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Introduction

What roles have colleges and universities played in the process of race and class stratification in the contemporary United States? Much of the relevant literature considers the transition to higher education as a transition largely exogenous to the agency of postsecondary institutions, leaving us to assume that racial, ethnic and class disparities in patterns of postsecondary attendance are the result of individual, structural and organizational forces at work during the childhood and adolescent years. There are, however, a handful of studies that take the opposite approach, focusing on the activities of particular types of schools—specifically community colleges or a small set of elite (largely private) four-year institutions—and how these affect college attendance patterns. Although informative, these studies do not address how the vast middle range of public four-year colleges and universities shape the postsecondary options and destinations of recent high school graduates.

In this paper, I explore the potential for institutional behavior to affect social stratification by considering the association between race/ethnicity, socioeconomic status and the types of postsecondary institutions initially attended by students who completed high school in 1972, 1982 and 1992.[1] Race-based affirmative action remains controversial in higher education, yet estimates of the extent of this practice vary from a modest fraction of the 20% to 30% of colleges engaged in selective admissions (Bowen and Bok 1998: 15), to one-fifth of all four-year colleges and universities in the 1980s (Kane 1998) and to approximately half of all comprehensive

[1] I discuss my postsecondary typology in the data section. Briefly, I distinguish between community colleges and four year colleges. I further classify four-year colleges based on the average test scores of incoming freshmen, distinguishing between elite colleges (top 3%), competitive colleges (next 7%), and four other groups.

colleges, universities and liberal arts colleges based on institutional self-reports.[2] Affirmative action based on social origins has received far less attention despite arguments that race-based affirmative action benefits only the most advantaged African American students (Wilson 1978; Kahlenberg 1996, 2004; Rimer and Arenson 2004). I argue that, in spite of substantial efforts to extend postsecondary opportunities to disadvantaged students, postsecondary institutions showed relatively little interest in class-based affirmative action over the period I study. In contrast, preferences for African American students and, more recently, Hispanic students appear widespread and substantial in magnitude.[3] I characterize the practice of race-based affirmative action as a form of compensatory sponsorship, building on Turner (1966), and discuss why postsecondary institutions engaged in compensatory sponsorship for limited racial and ethnic minorities but not for socioeconomically disadvantaged youth.

To see how colleges and universities facilitate or hinder the educational careers of potential matriculants, we must consider more systematically the organizational goals and values of postsecondary institutions. Just as students and their parents behave as self-interested actors, organizational actors in the system of higher education operate in ways that they hope will allow them to realize their own objectives. Likewise, just as students and their parents make choices under certain constraints, including decisions made by colleges and universities, institutions pursue their goals under constraints, including decisions made by students and their parents.

In the following section, I situate my work in the current research on the role of education in social stratification. Though empirically and theoretically well-developed, this literature has

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[2] Based on the author's tabulation of data collected by the College Board in the 1992 Annual Survey of Colleges. Of 1,275 responding institutions, 54% indicated that they at least consider minority status in making admissions decisions.

[3] I consider affirmative action as a particular form of institutional preference for a student characteristics. Throughout the paper I use institutional preferences for race/ethnicity and affirmative action interchangeably.

neglected to adequately incorporate the behavior of colleges and universities into its understanding of social stratification. I then outline the behavioral process by which colleges and matriculating students are matched with one another from the perspective of postsecondary institutions. Most previous research on affirmative action ignores the temporal dimension of institutional behavior, focusing exclusively on the admissions decision and thus ignoring most of the action on the parts of both students and institutions in the college matching market. I argue for expanding our notions of affirmative action beyond admissions decisions to the process of recruitment and financial aid offers.

Next, I review some of the sociological literature that describes the objectives of community colleges and elite colleges. I extend that work by discussing why a much broader range of colleges and universities might have enough of an interest in attracting socioeconomically disadvantaged students, Latinos and African Americans that they would be willing to compromise their academic standards to enroll them. Given the iterative process of mutual constraint in which students and postsecondary institutions engage, the utilities of students and institutions are difficult to disentangle with observational data. I discuss these data next, and in the methods section discuss how I parse out institutional utilities from this matching process and the degree to which I expect this procedure to be successful across different types of colleges and universities. I apply these methods to three representative samples of American high school graduates and discuss the results and their implications for our understanding of racial/ethnic and class-based affirmative action in higher education.

Social stratification and educational attainment

Most sociologists recognize the critical role education plays in the status attainment process and recent advances in social stratification offer a nuanced behavioral and empirical

model to account for the relationship between social origins and educational attainment. In particular, recent work has found substantial support for the thesis of Maximally Maintained Inequality (MMI). The basic premise of MMI is that students from privileged backgrounds seek to maintain and increase their privilege through educational attainment (Raftery and Hout 1993). They do so not with any class interests in mind, but rather as rational actors seeking to maximize their own individual life chances. As educational systems expand to enroll more students, MMI holds that the relative odds of attending any particular level of education will continue to favor socioeconomically advantaged children until they have saturated that transition. Only when virtually all advantaged students who wish to make an educational transition are able to do so will the odds of making that transition begin to approach equality across social class background.

Raftery and Hout (1993) suggest that socially stratified patterns of educational attainment reflect cost/benefit calculations on the parts of students and their parents. More highly educated families put a greater premium on educational attainment, cultivate stronger tastes for education in their children, and, by virtue of their economic standing, experience lower relative educational costs than families headed by less educated parents. As children advance in school, Raftery and Hout note a decline in the association between social origins and the odds of persisting to the next level of education. They attribute this pattern to the increased selectivity of students who persist in school, an insight further developed by Cameron and Heckman (1998).

Most studies of MMI focus on ordered educational transitions across the life course rather than distinctions among different types of education at any particular level (Raftery and Hout; 1993; Shavit and Blossfeld 1993; Gerber and Hout 1995). There are, however, a few notable exceptions. Breen and Jonsson (2000) distinguish between levels of schooling and secondary school vocational and academic programs. They find that in Sweden, the effects of

social origins vary not only across the life course but also across the paths through secondary school. In particular, transitions on the academic path are more sensitive to students' social origins than those along the vocational path.

In a project more closely engaged with MMI, Lucas (2001) proposes a theory of Effectively Maintained Inequality (EMI) to bridge the literatures on educational transitions (and MMI) on the one hand and tracking on the other. Lucas suggests that, once the privileged class has saturated a transition, "the socioeconomically advantaged seek out whatever qualitative differences there are *at that level* and use their advantages to secure quantitatively similar but qualitatively better education."[4] Although he anticipates stratification in kind at the postsecondary level, Lucas only models qualitative differences at the secondary school level, arguing that there is no consensus on distinctions among institutions of higher education.

Distinctions along the qualitative dimensions advocated by Breen and Jonsson and Lucas are a useful addition to the literature on MMI. Nonetheless, like other MMI scholars they fail to consider agentic behavior on the part of schools. This omission may be warranted in research on primary and secondary school transitions; however, at the tertiary level the agendas of academic institutions take on a greater importance. Postsecondary attendance in the United States is not fully subsidized by the state and admission to most colleges and universities is not guaranteed. Furthermore, MMI is a theory of *class* inequality, but says little about why racial and ethnic inequality net of social class might emerge or persist. To the extent that colleges choose students, an accurate understanding of the relationship between race/ethnicity, social origins and the type of college a student might attend requires developing a rational action perspective on persistent

[4] The idea that children of elites will seek to distinguish themselves from less advantaged students by attending more prestigious postsecondary institutions is not a new one. See Jencks and Riesman (1968), Karabel and Astin (1975) and Thresher (1966) for earlier work on the topic.

inequality from the side of *institutions* that is sensitive to the possibility that such institutions care about the racial, ethnic and socioeconomic composition of their incoming undergraduate classes.

From recruitment to enrollment: How colleges shape their incoming cohorts

> "In the market for higher education, just as in the job market or the marriage market, the process of search, appraisal, and selection go on continuously, on both sides, and emphases shift according to reciprocal needs and scarcities." (Thresher 1966: 3)

Colleges and universities engage in activities to influence students at every step on the path to college attendance. First, many institutions engage in outreach efforts designed to increase the likelihood that students with particular characteristics will attend *any* college (Swail and Perna 2002). These efforts, often under the rubric of "school-university partnerships" or "K-16 partnerships," are designed to encourage historically under-represented students to complete high school and go on to college, and include federally funded programs like Upward Bound and GEAR UP, state-sponsored interventions like New Jersey College Bound and Illinois Early Outreach Program, and programs sponsored by particular colleges and universities, such as the Monterey Bay Education Consortium (University of California—Santa Cruz) and the Early Outreach Program (University of Illinois) (U. S. Department of Education 2001).

Second, colleges spend an enormous amount of time and money trying to persuade targeted students to apply to their institutions for admission. Their objective is not to cultivate a general interest in college, but rather an interest in a specific institution. They shape their applicant pools by sending representatives to secondary schools and college fairs, working directly with specific secondary schools through outreach programs, advertising through print, video and on-line outlets, and engaging in substantial direct mail campaigns. Driven by fears of declining enrollments, the industry of college marketing emerged in the 1970s (Kotler 1976). By

2000, 80% of four-year public and private colleges engaged in direct mail campaigns to encourage students to apply to their schools (Breland et al. 2002). One of the primary sources of student information for colleges is the Student Search Service, started by the College Board in 1970 (Duffy and Goldberg 1998). In 2003, Sam McNair, director of the student search service, estimated that the College Board provided 1,600 colleges with 64 million names, sorted by categories such as ethnic group and zip code. The service generates $16 million in revenue for the College Board annually (Dobbs 2003).

There are relatively little data on the degree to which postsecondary institutions use targeted recruitment to either increase or reduce the number of minority or socioeconomically disadvantaged students in their applicant pools. Breland et al. (2002) estimate that among four-year colleges and universities, 91% of public institutions and 65% of private institutions engaged in special recruiting activities to attract racial/ethnic minority students in 1992. In contrast, 44% of public and 24 % of private institutions participated in such activities for students who were "disadvantaged" (as distinct from racial/ethnic minorities). The proportion of public and private four-year institutions targeting minority students for recruitment fell appreciably by 2000, to 66% and 54% respectively, while the percentage of public institutions targeting otherwise disadvantaged students fell to 37%. Despite this drop, there is some evidence that targeted recruiting of minority students has increased in places like Texas and California where race-based affirmative action has been eliminated by law (Harper and Reskin 2005). The proportion of private institutions targeting otherwise disadvantaged students did not change between 1992 and 2000.[5]

[5] The response rate for the 1992 survey was 71%. In 2000 the response rate dipped to 48%, making inferences based on the 2000 data more problematic.

Admissions and financial aid decisions are the third phase of student recruitment for colleges and universities. Although students receive financial aid from state and federal sources, institutional aid can be an important component of student matriculation decisions. Horn and Peter (2003) estimate that, in 1992-93, 17% of undergraduates attending four-year public institutions and 47% of undergraduates attending four-year private not-for-profit institutions received institutional support. Much of this aid went to students from families with modest incomes, but a substantial portion of aid flowed to middle and upper income students based on academic merit (Venti 1983; Duffy and Goldberg 1998). Among four-year institutions for which Breland et al. have data, 63% of public schools and 43% of private schools claimed to have made aid offers to racial/ethnic minority students in 1992. In contrast, 33% of public institutions and 24% of private institutions claimed to have extended offers of support to otherwise disadvantaged students (Breland et al. 2001: 122). Under threat of litigation from the United States Department of Justice and advocacy groups such as the Center for Equal Opportunity, the number of financial aid programs aimed explicitly at helping minority students continues to dwindle (Glater 2006).

The sociology of postsecondary institutions

Although sociologists have not considered how the organizational imperatives of the total range of colleges and universities affect social stratification, they have looked at both the upper and lower extremes of the American postsecondary market. In their work on community colleges, Brint and Karabel (1989) and Dougherty (1994) propose slightly different models of organizational behavior. Brint and Karabel suggest that community college administrators can best be understood as 'constrained entrepreneurs' striving to ensure the survival and prosperity of their institutions in a training market dominated by four-year colleges. Constrained by

demands of local business elites, state legislators and students, community colleges evolved into institutions that serve many masters. Dougherty, on the other hand, argues that the key actors in the evolution of the community college include local school superintendents and high school principals interested in opportunities for professional advancement for themselves and their students, as well as state legislators who saw some utility in expanding educational opportunities to historically disadvantaged groups of constituents. Key to both Brint and Karabel and Dougherty's work is the insight that organizational actors pursuing their own utilities created community colleges under exogenous constraints that included legislative bodies on which they relied for funding and the general public from which community colleges gained students and legitimacy.

At the other extreme, sociologists and others have evaluated the admissions patterns of a small number of elite colleges and universities. Most pertinent to the present work are studies by Bowen and Bok (1998), Massey et. al. (2003) and Espenshade et al. (2004, 2005) of cohorts attending a group of between 10 to 16 elite, mostly private institutions.[6] These studies provide strong evidence that institutions choose students based on more than just academic achievement. The prestigious schools that participated in these studies give admissions advantages to African American and Hispanic students, legacies, and athletes among others. Case studies of other competitive institutions conducted prior to local prohibitions against affirmative action corroborate these findings (Contreras 2003; Tienda et al. 2003), while a study of admissions records for a broader range of public postsecondary institutions suggests that admissions preferences for minority students extend beyond elite institutions (Lerner and Nagai 2001).

[6] The number of institutions included varies across these studies.

Some scholars have also looked more closely at the *process* by which students sort themselves and are sorted into varied postsecondary destinations. In his study of admissions at Harvard University, Karen (1990) argues for seeing admissions decisions as a political compromise between functionalist and class imperatives that flow from the organization's resource base, market and regulatory constraints. Karen demonstrates how, as a result of historically contingent classification struggles, Harvard applicants are divided into groups; residents of different regions, graduates of elite prep schools, legacies, athletes and racial/ethnic minorities are among the groups that receive special admissions consideration under this system.

The research on admissions suggests that postsecondary institutions are not passive in the education market; rather, they pursue their own ends in part through their selection of potential matriculants. Although informative, studies of admissions are limited in their ability to illuminate the magnitude of the effect of institutional preferences on patterns of student postsecondary attendance. The admissions decision is the culmination of a courtship initiated by colleges and universities months or even years before the student actually submits his college application, as discussed above.

Student characteristics and the objectives of colleges and universities

The sociological research on postsecondary institutions sheds some light on the objectives of community colleges and a handful of elite private colleges and universities. But what do other types of colleges and universities want and how do their preferences contribute to racial, ethnic and socioeconomic stratification? Among the goods colleges and universities generally seek are wealth (in the form of growing endowments) and prestige. Colleges and universities derive prestige from student achievements in academic, athletic and artistic spheres, as well as from the professional and public achievements of their academic faculties.

How do student characteristics bear on the achievement of these valued outcomes? First, the academic, athletic and artistic talents of the student body contribute directly to institutional prestige. The academic skills of students may also contribute indirectly to institutional prestige to the extent that talented students help attract and retain talented professors. Furthermore, talented students may be less risky for colleges, since such students are more likely to complete their degrees, and completion rates contribute to popular college rankings such as those put out by the *U.S. News and World Report*, and to formal and informal accountability systems designed to evaluate the performance of postsecondary institutions.[7]

In addition to contributing to prestige, students are also important for an institution's wealth. Since alumni are the primary donors to the institution's endowment, successful students, who are more likely to earn substantial sums of money in the future, are attractive. Likewise, students from affluent families may hold appeal since they can pay full tuition and their parents may make additional contributions to the university.[8]

Latino and African American students are, on average, less academically prepared and less economically advantaged than white students, and as a result may be less attractive to colleges and universities. A narrow understanding of the utility function of a college or university might lead to the conclusion that postsecondary institutions would engage in *de facto* discrimination against less advantaged students simply by sorting students on their secondary school achievement. However, postsecondary institutions do not exist in a vacuum; they are embedded in a complex web of social relationships with alumni, trustees, donors, state and/or federal government entities and the general public.

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[7] For an example, see Carey (2005).
[8] Sometimes this goal can be quite explicit, as in Duke's flagging of applicants in whom the fundraising office has a special interest (Toor 2001).

Postsecondary institutions derive resources from a range of actors besides potential matriculants and their parents. Following DiMaggio and Mohr's (1983) guidance, echoed in Karen's (1990) work, it is important to recognize the organizational field in which college and universities compete. First, colleges and universities must continue to satisfy (or at least placate) their primary base of support—alumni. Alumni are not only powerful financial supporters of the college; they also enable the school to claim to be successful by virtue of their own achievements (Meyer 1970) and, to the extent that their achievements translate into the academic success of their children, provide their alma mater with a new stream of able and socially advantaged recruits.

Second, colleges and universities must answer directly to boards of trustees, regents, or, in the case of some public institutions, state legislatures. These entities often control substantial amounts of fiscal resources, but can also call for the removal of administrators if they are dissatisfied with the way the institution is run. While senior faculty may enjoy the protection of tenure, college presidents, provosts and deans have no guarantee that they will continue to serve in those roles and hence may be more responsive than faculty to pressure exerted by superordinate groups.

Finally, colleges must cultivate favor with the general public. It is from this larger society that most potential matriculants will be drawn. According to Clark (1970: 250):

> [A] college seeking distinctiveness must make believers out of thousands of people on the outside whose lives are not directly bound up in the fate of the college. To the extent that outsiders believe it, the college achieves a differentiated, protected position in the markets and organizational complexes that allocate money, personnel, and students.

Thus colleges, in addition to their manifest functions as knowledge producers and educators, must engage in impression management to maximize their prospects of maintaining or increasing their standing in the general public.

Satisfying the demands of the general public, however, can be quite challenging. In their recent book on the state of higher education in the United States, Bowen, Kurzweil and Tobin write that "Americans want both equity and excellence in their higher education system." (2005: 1) The same can likely be said of college administrators and recruitment and admissions personnel. Equity, however, is a nuanced concept, as Coleman (1990) reminds us. Does equity require equality of opportunity? Equality of outcome? While equality of opportunity may be closer in spirit to what many Americans expect from their educational system, equality of outcome is both easier to observe and harder to ignore. Furthermore, inequality in opportunity in primary and secondary education leave colleges and universities in the difficult position of judging students either on the observed outcomes of an unequal race or the unobserved outcomes of what might have been if students all had the same high quality of education and came from homes of uniform economic and cultural resources.

Pressures from within the university (from faculty and students) and from without (from alumni, regents, and the public at large) act powerfully to shape institutional utilities. Colleges and universities generally want to attract the most academically able students they can, all else equal. However, these institutions must also at least maintain the appearance of equality; even (or perhaps particularly) the most elite private institutions in American must appear to be open to all conditional on academic merit. Thus postsecondary institutions are under pressure to recruit African American and Latino students as well as socioeconomically disadvantaged students, even if doing so means compromising on the goal of recruiting the academically strongest students. The

competition among universities to recruit the most academically accomplished disadvantaged students is especially intense.

As institutional standing increases, so too may the institution's need to attract minority students and socioeconomically disadvantaged students. First, prestigious institutions generally matriculate the most academically able undergraduates. Given the historic disparities in secondary school achievement across socioeconomic origins and race/ethnicity, prestigious institutions are more likely to have to compromise their academic standards to attract African American, Hispanic and socioeconomically disadvantaged matriculants. Second, prestigious institutions may hold greater symbolic importance to the general public as well as those groups that have been underserved by higher education in the past. It is not enough to point to a diverse state college as evidence of the truth behind the American dream of equality. To preserve the image of equality of opportunity requires that even the most elite postsecondary institutions appear diverse. This is not to say that less prestigious institutions will fail to engage in affirmative action based on race/ethnicity or socioeconomic origins. However, given the academic composition of their incoming students, as well as their less competitive admissions standards, the need of less prestigious colleges compromise their standards of academic readiness to achieve racial/ethnic or socioeconomic diversity is more modest.

Concerns about equity, whatever their origin, do not necessarily translate into equity for all. As Karen (1990), Skrentny (2002) and other have shown, defining the groups for whom equity must be achieved is itself a complex political and social process. I explore how institutional tastes for student racial/ethnic and socioeconomic background change over time and across institutional prestige by evaluating the college matriculation

patterns of three cohorts of high school graduates. Given the observational nature of these data, one must exercise some caution in making causal attributions. Nonetheless, I argue that, under fairly uncontroversial assumptions, my analyses suggest widespread affirmative action based on race/ethnicity. In contrast, the evidence for affirmative action based on socioeconomic origins is modest at best.

Data

My analyses are based on representative samples of students who completed high school in 1972, 1982 and 1992, as well as the initial postsecondary institutions those students attended, if any. The data required to classify the postsecondary institutions are from a variety of sources across cohorts. I obtained mean SAT and ACT scores of incoming first-year students primarily from surveys conducted by the American Council on Education in 1972 and the College Board (Annual Survey of Colleges) in 1983 and 1992.[9] These data are supplemented with information from various published college guides. I also use data on undergraduate enrollments, tuition and fees from institutional surveys conducted by the U.S. Department of Education to impute average test scores for observations missing such data. Finally, average characteristics of students attending each institution are derived from the longitudinal datasets used for student samples described below.

I restrict the institutional samples to community colleges, junior colleges and comprehensive public and private not-for-profit colleges and universities. Omitting specialized colleges (such as engineering schools, music colleges, seminaries and the like), proprietary colleges and non-degree granting institutions (including flight schools and cosmetology

[9] The 1983 data are the earliest available and it is unlikely that using the 1982 data would change the results of the classification. Test scores are generally stable across brief periods of time and only changes near the edge of a category would result in shifts.

programs) reduces the enrollment-weighted sample of postsecondary institutions only slightly. Furthermore, such institutions have utility functions that differ in fundamental ways from those colleges and universities that provide a broader range of academic opportunities. I also exclude single sex and historically black colleges and universities from these analyses because their utility functions are impossible to estimate using observational data (there is no variance in sex or race/ethnicity, respectively, in these colleges so they appear to have infinitely strong preferences for the types of students they serve).

Not all institutions require students to submit ACT or SAT scores with their application for admission and those with a mandatory entrance exam do not all report characteristics of the student test score distribution. I impute missing SAT scores as a function of school sector, out-of-state tuition and mandatory fees, average predicted SAT scores of sample students attending each institution, and other available indicators of student achievement available from institutional sources.[10] The final institutional data sets for 1972, 1983 and 1992 include 1,092, 1,042 and 1,259 baccalaureate-granting colleges and universities, respectively. To facilitate analyses, I classify comprehensive four-year colleges based on the cumulative distribution of average SAT scores of incoming students (see Table 1 for categories). The dependent variable for each model is the type of college attended with community college as the comparison category.

To give readers a better sense of what kinds of four-year colleges are included in each category and includes, Table 1 shows means and standard deviations of selected college

[10] I originally imputed five plausible values of average SAT scores for each missing observation (see Allison 2002; King et al. 2001). The imputations provided results that were consistent across the five data sets for each cohort, with inter-dataset correlations generally around 0.95 for SAT scores. The high correlation implies a limited return to multiple imputation (as opposed to a single draw), so I averaged across the data sets to produce a single imputed institutional file for each high school class.

characteristics in rows by college categories for the 1992 cohort. For example, colleges in the bottom decile of average SATs of incoming students (column 1) had an average mean SAT score of 786 (SD=39.1) and an average , out-of-state tuition of $5,351 (nominal dollars, SD=$2,029.).[11] At the other end of the distribution, the average SAT scores for institutions in the top 3% was 1,306 (SD=47.6) and average yearly tuition was $15,018 (SD=3,397). The top 3% category is the only category without public colleges or universities.

Data for representative samples of students graduating in the high school classes of 1972, 1982 and 1992 are taken from longitudinal surveys conducted by the U.S. Department of Education: the National Longitudinal Study of the High School Class of 1972 (NLS), the High School and Beyond Sophomore Cohort (HS&B), and the National Educational Longitudinal Study (NELS). In addition to the dependent variable, type of college first attended, each dataset collected measures of student background and secondary school achievement, extracurricular participation and, for students planning to attend college, student preferences for different institutional characteristics. Student background information includes student sex, race/ethnicity and characteristics of students' parents, such as parental education, occupation and income.

Data for parental education and income were collected using ordinal scales. In two parent homes, I use the higher of the two parents' scores; I use the resident parent's information for single parents in two parent households. For education, I substitute the modal years for each category (e.g., 12 years for a high school graduate). [12] For income measures, I use the midpoint of each category. The top category is generally open-ended, so a value for this group is imputed

[11] I use out-of-state tuition for public colleges and universities to obtain tuition estimates. The out-of-state tuition institutions charge conforms more closely to their relative standing than does in-state tuition.

[12] Parental education, like occupation, may contribute to students' transition to tertiary education beyond its contribution to educational attainment in a more general sense. Parents who have attended college are more likely to have experienced the college choice process than parents who ended their formal education at or before high school graduation.

based on the ranges covered by other income categories (All income measures are scaled in 1992 dollars based on the consumer price index for urban consumers). Measures of occupational standing are based on Hauser and Warren's (1997) occupational education for the decades in which the data were collected and in dual parent households, refer to the higher of the two parents' occupations.[13]

Student achievement measures include performance on standardized tests, high school GPA, class rank, and SAT and ACT test scores. dichotomous measures that indicate whether or not students participated in any school sport or other extracurricular activities.[14] Additional dichotomous measures indicate whether or not they took a leadership role in any of these activities.

In each survey, high school seniors rated the importance of each of the following considerations in their choice of college: college cost, availability of financial aid, specific course of instruction, the reputation of the athletics program, the reputation of the academic program, and the possibility of living at home while attending college. Students could respond that each quality was not important, somewhat important or very important. I use multiple imputation to compensate for nonresponse for all measures but student preferences and, unlike the institutional data, estimate models across the five imputed data sets. I use dummy substitution for the student preference measures because missingness is low for two of the three surveys and, given the skip pattern in which the questions were embedded, item nonresponse is unlikely to be

[13] Given that the focus of this research is on postsecondary access, occupational education seems an especially appropriate measure. Occupational education is not only an indicator of status, but may also reflect the amount of information about postsecondary education to which a student is exposed in the home.

[14] The activities include school musical group, play or musical, government, academic honor society, yearbook or newspaper, service clubs, academic clubs, hobby clubs, future farmers, teachers or homemakers of America, or intramural team or individual sports.

ignorable (the inclusion of student preference indicators has little affect on the coefficients of interest).

The outcome measure for all analyses is type of first postsecondary institution attended, classified as a community/junior college or four year college with four year colleges grouped by average SAT score (see Table 1). Substantive analyses are restricted to those students who continued on to some sort of postsecondary institution and whose first such institution was either a comprehensive four-year college or university or a community or junior college. Students attending certificate programs not at a community college, attending single-sex or special purpose institutions, HBCUs or any of the other institutions excluded from the institutional samples were themselves excluded.

Most students who attend college do so within two years of completing high school and thus I use only data for the first two years following high school graduation. This restriction excludes, for example, only 12% of those students in the class of 1982 who went on to attend some form of postsecondary education by 1992 (National Center for Education Statistics 1996) and 6% of students graduating in the class of 1992 who went on to some postsecondary education by 2000 (Roksa et al. forthcoming). The consequences of each sample restriction for the sample size, across cohorts, are shown in Table 2. The frequency column shows the size of the remaining sample with each additional restriction, while the percentage column shows the percentage of the sample retained from the previous restriction. Table 3 shows weighted and unweighted means and standard deviations for each independent variable, by cohort.

Methods

The objectives of this paper are to separate institutional from student preferences and to capture changes in institutional preferences over time. Given the repeated cross-sectional nature

of the data on where students first matriculate, the paper confronts two methodological challenges. First, how can one remove the effects of student preferences (or self-selection) in a statistical model that relies on student: institution pairings as the outcome measure? Second, how can one adjudicate between temporal change in the effects of different attributes on the likelihood of a match from temporal change in the unobserved variance of the matching process?

One approach to the self-selection problem is to consider admissions outcomes conditional on student application decisions (Contreras 2003; Kane 1998; Lerner and Nagai 2001; Long 2004; Manski and Wise 1983). To construe observed patterns as representative of opportunity (institutional preferences), however, one must assume that student application decisions are independent of institutional constraints. This assumption is questionable given the investments made by institutions to shape their applicant pools. Conditioning away student preferences by evaluating admissions offers made to applicants, as much of the research on affirmative action has done, risks understating institutional preferences for student characteristics. Furthermore, as other authors have acknowledged, students are unlikely to apply to schools they believe are too costly or where they perceive that their chances of admission are low.

As an alternative approach to the selection issue, I reduce the influence of student agency on parameter estimates by assuming that the decision of whether or not to take a college entrance exam, now required by most four-year colleges, is exogenous to institutional action but is indirectly related to student attendance outcomes. The choice to take a college entrance exam reflects a fairly high level of commitment to attending a four-year college or university. Few students would subject themselves to the stress, time and monetary cost of a college entrance exam were they not intent on attending college. Furthermore, by taking a college entrance exam

and completing the accompanying student questionnaire, students make information about themselves available to a much larger pool of postsecondary institutions than those to which they send their test scores.

I assume further that, conditional on making themselves available to four-year institutions, student preferences and matriculation outcomes are largely structured by the tastes of institutions rather than those of students. As discussed earlier, institutions go to great lengths to cultivate the preferences of students whom they hope to enroll. I test the sensitivity of my results to the assumption that student preferences are endogenous to institutions by estimating a model including student preferences as an exogenous predictor.

Of course, some institutions will enjoy more success in this competition than others. All else being equal, I expect that as institutional prestige increases, institutions will be better able to realize their objectives *viz.* student characteristics. As enrollments increase over time, the relative advantage of more elite institutions over their less elite peers in attracting desirable students will persist and perhaps even increase as advantaged students seek to distinguish themselves from less privileged college matriculants.[15]

Formally, the self-selection term I apply is based on Heckman's (1979) two-stage sample selection correction. In the first stage, I estimate a probit of taking either the ACT or SAT during high school as a function of student origin characteristics, race/ethnicity, sex and secondary school achievement (including grades, senior year test scores and class rank):

$$\Pr(y = 1 | \mathbf{x}) = \Phi(\mathbf{x}\beta)$$

Note that this equation is not restricted to college entrants. All students who persisted in the sample through the follow-up that occurred two years following their expected year of high

[15] See Trow (1984) for a more thorough discussion of institutional competition.

school completion are included. From this equation, I recover the inverse Mill's ratio, representing the hazard of *not* taking a college entrance exam: [16]

$$\lambda = \frac{\Phi(\mathbf{x}\beta)}{\phi(\mathbf{x}\beta)}$$

In the second stage of the model, I estimate a multinomial logistic regression for type of first institution attended as a function of student origin characteristics, race/ethnicity, sex, (predicted) SAT score and the hazard of not taking a college entrance exam:

$$\ln\left(\frac{\Pr(y=m\,|\,\mathbf{x},\lambda)}{\Pr(y=b\,|\,\mathbf{x},\lambda)}\right) = \mathbf{x}\beta_m + \lambda\gamma_m$$

where *m* denotes the type of college defined by its position in the cumulative distribution of average SAT scores of incoming students (bottom decile, 10th to 50th percentile, 50th to 75th percentile, 75th to 90th percentile, 90th to 97th percentile and the top 3%). Each type of institution is free to have different degrees of preference, captured by βs, for each student characteristic (*x*). The base category, *b*, is the community college. I assume that community colleges have no preferences for the types of students whom they enroll; β_b =0 and γ_b=0. Community colleges are generally open to all students who complete a high school diploma or GED. They do not require that students take the SAT or ACT so should be neutral to student proclivities to do so.

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[16] Following Leung and Yu's (1996) advice, I checked for collinearity between the inverse Mill's ratio and other covariates in my models. Average condition numbers across data sets were around 5.6 for test taking models. I also estimated models in which I corrected for the hazard of applying to college before completing high school, but condition number for these models were larger in earlier years (14.4 for 1972 and 10.7 in 1982). Although these values are well below the threshold of 30 suggested by Belsley, Kuh and Welsch (1980) as indicative of collinearity problems, they are substantial enough to cause instability in some estimates. For that reason, I prefer models based on the probability of taking an entrance exam over those based on the probability of applying to college.

In models not shown, I use two measures of college density (number of four-year colleges and number of two-year colleges within fifty miles of a student's high school) as instruments in the selection equation. Although these measures significantly improve the fit of the selection model, only about three quarters of the observations in NELS had valid zip code information; zip codes for private schools were not available to me. Correlations between the inverse Mills' ratios with and without these instruments were above 0.98 across data sets, so I opted to exclude the density measures from the selection equation.

Community colleges are the least expensive of the postsecondary options explored here and are within commuting distance of virtually all students in the United States. Constraining the coefficients for a reference category to 0 is one way of identifying the multinomial logistic model; in this case, that constraint also reflects a substantive assertion about the utility of the reference group.[17]

The second methodological challenge in this project is to adjudicate between temporal change in institutional preferences and temporal change in the residual variance in student: college pairings. The residual variance in a logistic regression model is not separably identified from the coefficients of interest, leaving open the possibility that what appear to be changes over time in the association between some independent variable and student matriculation outcomes are really changes in the (unobserved) variance of the matching process.

Allison (1999) offers a simple test for the presence of heteroskedasticity in a logit model. I have not seen Allison's work applied to the MNL, so I apply his test to separate logits of attending each type of institution relative to the community college. Results of these tests show evidence of heteroskedasticity between 1992 and 1972 for all outcomes except the odds of attending an institution in the bottom decile or in the top 3%. [18]

Allison (1999) notes that it is very difficult to distinguish between heteroskedasticity in disturbances across groups and group interactions for a subset of independent variables. [19] To

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[17] A critic suggested that an ordered logit model might be preferable given the ordered nature of the outcomes. However, ordered logit model imposes the strong assumption that effects of a covariate are proportional across levels of the dependent variable. I tested this assumption and found it violated for each model and each data set. In fact, violations of proportionality tended to be most serious for the race/ethnicity, SAT and grade coefficients.

[18] For example, in the equation predicting the odds of attending a school at the 90th to 97th percentile relative to attending a community college, error variances to the 1992 and 1972 data are significantly different ($\chi^2(1)=34.7$) while those for 1982 and 1972 are not ($\chi^2(1)=0.48$).

[19] To complicate things further, Hoetker (2004), using simulated data, finds that, in the presence of heteroskedasticity, Wald tests for real group differences in the effect of *x* on *y* fail to pick up the difference, and in some cases actually indicate significant differences in the opposite direction.

avoid this problem, as well as to aid in the interpretation of model coefficients within and across cohorts, I follow Hoetker's (2004) guidance and present *ratios* of each coefficient of interest to the SAT coefficient rather than raw coefficients. This results in a scaling of the effects of key stratification measures (race/ethnicity and parental education, occupation and income) in SAT points. In Hoetker's terms, I present indirect comparisons of the effects of independent variables rather than direct comparisons. By doing so, I render any potential differences in residual variation across cohorts irrelevant to my substantive findings.

Borrowing Hoetker's notation, consider coefficients for parental education and SAT scores for 1972. Each coefficient estimate consists of two parts: the true coefficient, α, and the unobserved scale factor σ. Since σ is assumed to be homoskedastic within each cohort, I can factor out the unobserved scale factor by taking a ratio of the two coefficients of interest:

$$\frac{\beta_{par\,ed,1972}}{\beta_{SAT,1972}} = \frac{\alpha_{par\,ed,1972} \big/ \sigma_{1972}}{\alpha_{SAT,1972} \big/ \sigma_{1972}} = \frac{\alpha_{par\,ed,1972}}{\alpha_{SAT,1972}}$$

This procedure leaves me with a ratio of the estimated parental education coefficient to the estimated test score coefficient that can be interpreted as the effect of one year of parental education, in the metric of SAT points, on the log-odds of attending a school of type *m* relative to attending a community or junior college. The ratio can then be compared to ratios of the parental education and SAT score coefficients from other years to see if the importance of parental education to college admissions relative to that of test scores has changed over time. As Hoetker notes, however, such ratios may fail to attain statistical significance if one or more of the terms has a large standard error. Furthermore, such differences across cohorts may reflect changes in the role of parental education in college recruitment and admissions (the numerator), changes in the role of SAT scores in the college matriculation process (the denominator), or both.

For my purposes, this ambiguity is not of great importance. In considering the net (dis)advantages associated with family background, we generally compare the role of ascriptive factors to the role of achieved factors. By standardizing each coefficient on the coefficient for SAT scores I merely make that comparison more explicit, while at the same time achieving the important methodological and substantive goals of isolating difference in the log-odds of matriculation from differences in the unobserved dispersion of estimation errors.

For each cohort, I estimate three models. The first model is essentially descriptive and includes student race/ethnicity, sex, high school grade point average, predicted SAT scores, parental occupation, education and income as regressors. The second model adds a correction for self-selection into four-year college eligibility based on the hazard of taking a college entrance exam. I believe that this baseline model most accurately reflects institutional preferences for student characteristics. To check how sensitive results are to omitted student attributes, I estimate a third model that includes student extracurricular and athletic participation and leadership and student preferences for college attributes.

Results

Ratios of coefficients of interest to SAT coefficients are presented in Table 4 for racial/ethnic contrasts and in Table 5 for SES measures. [20] The coefficient ratios are in the log-odds metric and are scaled in 100-point SAT units. Each table includes three panels, corresponding to the descriptive, baseline and full models described above. Untransformed coefficient estimates for the baseline model are included in Appendix I.

[20] For details on how standard errors are calculated see StataCorp (2003). All coefficient ratios mirror individual coefficients in their valence and statistical significance.

Race/ethnicity

The descriptive results for the black: white differences in the log-odds of attending different kinds of four-year institutions relative to attending a community college are shown in the top panel of Table 4. These ratios suggest fairly widespread and substantial net black advantages throughout the period studied. For example, after controlling for student sex, social origins and secondary school academic achievement, the log odds that a black student attended a college between the first decile and median in 1972 were significantly and substantially higher than those of an otherwise comparable white student. All else equal, the black advantage was equivalent to a 289 point increment in SAT scores (2.89*100). For more competitive schools the black advantage was even greater, peaking at 353 points, give or take 82 points, at colleges between the 90^{th} and 97^{th} percentile.

Between 1972 and 1982 the black advantage in four-year college attendance appears to have declined. At schools in the top 3% of the SAT score distribution, the black attendance advantage declined by almost half, from 324 SAT points to 154 SAT points. The reduction in black advantage is similar across other types of colleges and universities above the median. There is modest evidence of an increase in black advantage in the 1992 cohort, but the black advantage in 1992 is much closer to the advantage in 1982 than it is to the advantage in 1972.

To what extent are these descriptive results driven by student self-selection? The second panel of Table 4 corrects for the hazard of taking a college entrance exam as a way of adjusting for student preferences to attend some type of four-year college. Correcting for self-selection leads to the (more intuitive) finding that colleges below the median have no clear preference for African American students over otherwise similar white students. This shift is driven by a reduction in the magnitude of both the numerator (black coefficient) and denominator (SAT

score coefficient). Among youth continuing on to some postsecondary education, black students in the class of 1972 appear more likely than otherwise similar white students to prefer attending a relatively non-competitive four-year college to attending a community college. Controlling for this preference—through the propensity to take a college entrance exam—suggests that the descriptive result for colleges below the median was driven by student rather than institutional behavior.

While ratio estimates for the 1972 and 1992 cohorts generally increase in magnitude with the inclusion of the selection correction, coefficients for 1982 decline in magnitude (in the case of schools between the 90th and 97th percentile, to the point of nonsignificance). These coefficient shifts may reflect the greater willingness of white students to make themselves available to four-year colleges by taking a college entrance exam. Once I control for the propensity to make oneself available to four-year colleges, the net preference of colleges above the median for African American students may increase slightly in response to the more constrained supply of available African American students relative to white students.

Finally, the third panel of Table 4 presents ratios net of student athletic and other extracurricular participation and leadership in high school as well as student preferences for selected college characteristics, including expense, availability of financial aid and academic reputation. Controlling for these factors reduces estimates of institutional preferences for student race/ethnicity, but generally by no more than 10% to 15%. The pattern of coefficient ratios for African American students is largely the same as in the other two panels, with a fairly sharp decline from 1972 to 1982 followed by stability or a modest increase between 1982 and 1992.[21]

[21] In models not shown, I introduced measures of athletic and extracurricular leadership and participation separately from measures of student preferences for institutional attributes. Student preferences appear to be much more important mediators than student extracurricular and athletic leadership and participation.

This suggests that preferences for African American students were at their peak in the early 1970s, but for whatever reason declined over the course of the decade. Nonetheless, those preferences remained fairly substantial into the early 1990s and were shared by a much wider range of colleges and universities than previously thought.[22]

Turning to Hispanic: white contrasts in Table 4, there is little evidence of any institutional preferences for Hispanic students relative to white students in the 1972 cohort. Preferences for Hispanic students emerge in 1982 only among the most elite schools in the sample, but then spread to other schools above the third quartile by 1992 and increase in magnitude. The Hispanic advantage over otherwise comparable white students in the log-odds of attending a college above the third quartile as opposed to the community college was equivalent to around 120 SAT points in 1992. In contrast to the black advantage, the Hispanic advantage appears somewhat suppressed by student preferences. This may be driven by the stronger preferences of Hispanic students to live at home and the fact that few students live within commuting distance of a college or university above the third quartile.

In general, these results suggest that the practice of affirmative action based on race/ethnicity was widespread in the early 1990s and, for African American students, in the early 1970s. Much of the advantage minority students enjoyed over otherwise similar white students was unrelated to socioeconomic status, secondary school achievement, extracurricular participation and leadership, student self-selection into college eligibility and student preferences for college characteristics. The magnitude of the affirmative action effect is surprisingly stable

[22]Appendix I shows that the drop in preferences for African American students is also reflected in both the ratios and the raw coefficients. Coefficients for 1972 and 1992 are generally closer to one another in magnitude than they are to coefficient estimates for 1982, with the exception of coefficients for SAT scores. The SAT coefficient increases in magnitude across cohorts, implying a greater role of test scores in college recruitment and admissions. Recall also that residual variation *declines* between 1972 and 1992 by as much as 40%. This combination of factors leads me to prefer ratio estimates over raw coefficient estimates for purposes of comparing cohorts.

across institutional prestige within each cohort. This apparent stability masks increases in both the race/ethnicity coefficients and the SAT coefficient across institutional prestige within cohorts (see Appendix I). More competitive colleges are more responsive to both qualities so that, although in an absolute sense the SAT advantage enjoyed by black (and later Hispanic) matriculants increases across prestige, in a relative sense it does not. If the underlying logic of affirmative action is advantage based on non-academic characteristics relative to academic characteristics, it makes sense to compare the effects of race/ethnicity on matriculation patterns relative to the effects of test scores for each institution type.

Differences in the temporal pattern of institutional preferences for African American and Hispanic students are striking. When conditional preferences for African American students were at their most pronounced, in 1972, I find almost no evidence of preferences for Hispanic students. Although point estimates for schools above the median are positive, estimates are fairly unreliable, as reflected in their large standard errors. On the other hand, preferences for Hispanic students diffused downward over the 1980s and increased in magnitude at the most elite schools, mirroring a modest (and non-significant) uptick in preferences for African American students.

Socioeconomic status

Descriptive results show that, net of secondary school achievement, race/ethnicity and sex, more advantaged students are more likely to attend a four-year college than are less advantaged students. Both parental education and parental income consistently predict four-year college attendance, although effects do not increase across institutional prestige. Effects of occupational education, while in the expected direction, attain statistical significance for only a few institution types in 1972, none in 1982 and one in 1992 but disappear once I control for self-selection.

Based on the results in the second panel of Table 5, it appears that, for the class of 1972, much of the college matriculation advantage enjoyed by children of more educated or affluent parents can be accounted for by the greater propensity of such children to take a college entrance exam. Whether they are more likely to take an entrance exam because they are more serious about going to college or because they are more likely to have the information, academic preparation and resources to take such an exam is unclear. Either way, their propensity to make themselves available to four-year colleges is unlikely to be influenced very much by the behavior of colleges and universities. Net of self-selection, only colleges between the 90th and 97th percentiles show evidence of having preferences for children of more educated parents. Each additional year of parental education had the same effect on the log odds of attending such a college rather than a community college as a 22 point increment in SAT scores, give or take about 15 points. This implies an 88 point advantage for the child of a college graduate relative to the child of a high school graduate.[23]

Over time, tastes for parental education diffused to other types of postsecondary institutions. In 1982, the most elite schools had a modest preference for children from more educated families, and there is some evidence that this preference was shared by schools between the third quartile and ninth decile.[24] By 1992, schools above the third quartile had clear preferences for children of more educated parents. Schools at the top of the prestige distribution had significantly stronger tastes for such students than schools between the third quartile and 97th percentile. Controlling for student preferences and extracurricular participation does little to account for the preferences of colleges and universities for educationally advantaged children in

[23] (16-12)*0.22*100=88

[24] The coefficient of 0.14 for schools between the 75th and 90th percentile barely attains statistical significance at α=0.05.

1972 and 1992, but seems to mediate the parental education effect in 1982 (see third panel of Table 5).

Patterns of preferences for parental income are somewhat similar to those for parental education. One important exception is that the income preferences of the most elite colleges and universities fail to attain statistical significance for any cohort. Point estimates of income coefficients for the most elite colleges are around one half to one third the size of income coefficients for other schools above the third quartile. In 1992, schools between the 90th and 97th percentiles had the strongest income preferences. At such schools, a one standard deviation increase in the log of parental income had the same effect on the odds of attendance relative to attending a community college as an 80 point increment in student SAT scores.[25]

Table 5 seems to suggest that schools fail to engage in affirmative action based on socioeconomic background; coefficients for parental education and income, where significant, are always positive. Were schools interested in redistributing postsecondary opportunities, one might expect those coefficients to be negative. However, the conclusion that schools below the top 3% consistently prefer more economically advantaged students must be tempered by the recognition that the real advertised costs of attending postsecondary institutions increased by about 60% between the 1980s and 1990s, a period when real median family income increased by only 16% (The College Board 2002: Figure 6). Thus stability or decline in the magnitude of income advantage over this period provides some evidence of redistributive effort on the parts of colleges and universities above the median on the SAT score distribution.

The absence of evidence of net preferences of elite colleges and universities for family income net of other characteristics suggests a commitment to resource-based equality on their

[25] 0.831*0.964*100=80.1

part, if not affirmative action. However, these institutions also had the strongest preferences for parental education in both 1982 and 1992. It may be that rather than the economic capital less prestigious institutions seek, the most elite institutions place a premium on cultural capital transmitted by more educated parents to their children. Their relative preference ordering may reflect differences in the values held by the most elite colleges compared to other competitive schools, but it may also reflect the fact that the private colleges and universities that constitute the top 3% already have sizable endowments and are thus less concerned with enrolling affluent students than they are with enrolling culturally elite students.[26]

Discussion

The results reviewed above leave us with several puzzles. How can we accommodate the clear evidence of widespread affirmative action for African American and Hispanic students in our understanding of social stratification? Why is it that socioeconomically disadvantaged students fail to enjoy the same opportunities as racial/ethnic minorities? And, how can we account for the disparate temporal patterns of affirmative action for African American students on the one hand and Hispanic students on the other?

I propose a modified version of Turner's ideal types of sponsored and contest mobility as a useful tool for understanding affirmative action in higher education. Admissions and recruitment personnel in competitive colleges and universities engage in *compensatory sponsorship* to try to craft new cohorts of elites that conform more closely to a vision of a just society. The notion of compensatory sponsorship does not, however, make clear the motivation that leads schools to favor minority students over otherwise similar white students. To make

[26] Another possibility is that the variance (or conditional variance) in family income among students attending the most elite colleges and universities is smaller than that of students attending other institutions. Descriptive analyses not presented show that this is not the case.

sense of the motivations for and timing of institutional preferences for African American and Hispanic students, I turn to Skrentny's crisis management thesis and to organizational work on the diffusion of norms and values. Skrentny's work, combined with Rubinson's insights into the political sociology of American education, also helps account for the lack of affirmative action based on socioeconomic origins.

Sponsored and Contest Mobility in American Higher Education

Turner (1966) argues that the accepted mode of upward mobility, and the role of the educational system in facilitating upward mobility, differs in the United States and England. In the United States, the organizing folk norm of upward mobility is one of *contest mobility*. Upward mobility is the prize for which youth compete in a contest governed by a minimal set of rules and judged by prescribed criteria. Elite status is earned and selection of elites is postponed to avoid "premature judgments… [or] anything that would give special advantage to those who are ahead at any point in the race." (452) Special advantages or inequities violate the contest norm; "[t]he contest is judged to be fair only if all the players compete on an equal footing." (451)

In contrast, the organizing folk norm in England, according to Turner, is one of *sponsored mobility*. Under sponsored mobility, elites or their agents choose new elites early in their life course. Turner likens sponsorship to joining a club in which a new member is "selected because the club members feel that he has qualities desirable in a club member…" (458) Once a member is inducted into the club, membership cannot be taken away.

Admission to competitive colleges and universities in the United States more closely conforms to the norm of contest mobility, consistent with Turner.[27] Secondary school

[27] Though see Persell and Cookson (1990).

achievement drives the process, primarily through grades and entrance exam scores, although extracurricular and athletic participation and leadership are also considered important achievements by some types of colleges. But what happens if the norm of universal opportunity is violated, or in Tuner's language if the players are *not* thought to compete on equal footing? What if African American, Hispanic and socioeconomically disadvantaged students suffer from inferior educational opportunities throughout their primary and secondary school careers? Those who select the new elites are then faced with a dilemma. If they do nothing, they risk betraying the contest norm and sacrificing the legitimacy bestowed on those judged to prevail in a fair contest, as well as their own legitimacy. If they act to remedy past inequalities in the contest, they likewise risk sacrificing both their own legitimacy and the legitimacy of the victors in the contest, especially those victors for whom the rules of the contest were violated in order to remedy past inequities in the competition.

I argue that competitive colleges and universities choose the latter course of action. Faced with a pool of potential matriculants who have, for reasons completely beyond their control, experienced wildly unequal educational opportunities, admissions and recruitment personnel engage in *compensatory sponsorship* for those students thought to suffer from constrained opportunities earlier in the educational competition. While it would be virtually impossible to know the details of each player's history, and thus to know at an individual level who suffered from unfair disadvantage earlier in the game, it is fairly easy to consider groups of people who may have endured previous inequities. Following Turner's logic of sponsorship, I believe that admissions and recruitment personnel sponsor those students who possess the qualities they or others to whom they must answer desire to see in the next generation of elites, including qualities of skin color. In the words of Joan Fetter, former Dean of Admissions at Stanford University,

"[t]he redress of past and present injustices, of lack of opportunity, and of the negligible representation of minorities in positions of authority and responsibility had to begin somewhere, and affirmative action in college admissions had an essential part to play" (1995: 110).

In the case of affirmative action, African American and Hispanic students are members of classes that benefit from compensatory sponsorship. They are believed to have been unfairly hindered in their ability to compete during primary and secondary school, and perhaps even before then as a result of parental education or income, neighborhood of residence, etc. Furthermore, elites for a variety of potential reasons feel compelled to increase the racial/ethnic diversity of their ranks. By virtue of being members of under-represented minority groups, African American and Hispanic high school graduates possess qualities the elite and their agents seek to add to the next cadre of elites. Students who experience socioeconomic disadvantages, on the other hand, are not necessarily seen as suffering from an unfair competition. Indeed, it is the upward mobility of such students that contributes to the Horatio Alger myth—anyone can make it in America. Furthermore, as I discuss below, elites do not seek out the socioeconomically disadvantaged to join their ranks in the same way that they seek out members of racial and ethnic minority groups. Thus African American and Hispanic students benefit from compensatory sponsorship while socioeconomically disadvantaged students do not.

Origins of racial and ethnic compensatory sponsorship

While compensatory sponsorship may account for the presence of affirmative action based on race/ethnicity, it does not explain either the emergence or the temporal patterns of affirmative action reflected in Table 4. Unfortunately, I lack adequate data to speak conclusively to the origins of affirmative action for African American students; preferences for African American students were at their strongest in 1972, the first year of data available to me.

Nonetheless, taking temporal censoring into consideration, I speculate that Skrentny's crisis management thesis can account for the subsequent decline in preferences for African American students. This thesis can probably not account, however, for the persistence of preferences for African American students or the emergence and diffusion of preferences for Hispanic students from the 1980s to the 1990s. To explain these patterns, I turn to ideas about the diffusion of organizational norms developed by Dimaggio and Powell (1983) Edelman (1992; 2001), and others.

Crisis management and affirmative action

Although a few predominantly white colleges recruited African American students prior to the 1950s, scholars generally agree that more colleges began taking special steps to recruit and admit African American students during the 1960s. [28] Skrentny (1996; 2002) and Bowen and Bok (1998) suggest that the expansion of affirmative action programs based on race occurred in response to student unrest and to race riots. By increasing the number of African American students on campus, they reasoned, colleges and universities hoped to preempt vocal and embarrassing criticism from minority constituencies and to avoid violent confrontations that were becoming increasingly common on college campuses during that period. According to Skrentny, the original impetus for affirmative action was one of "crisis management" and of elites' interests in crisis management that grew out of the civil rights struggle (1996).

The thesis of crisis management might lead us to expect that many schools, not only elite institutions, would engage in affirmative action. State colleges and universities had no more interest in negative publicity than elite private institutions. If anything, following Skrentny's

[28] Antioch and Oberlin, for example, recruited African American students in the late 19th century (Duffy and Goldberg 1998). Karen (1990) suggests that Harvard's original efforts at recruiting African American students began in the 1950s, following the publication of Myrdal's *An American Dilemma* (1944).

logic, public institutions might be more likely than private institutions to engage in affirmative action. Public institutions are more sensitive to state actors and policy making elites, two groups that Skrentny suggests endorsed affirmative action. The crisis management thesis is, in this sense, consistent with the widespread affirmative action for African American students reflected in Table 4.

Moreover, if affirmative action emerged in response to a perceived crisis, we might expect the practice to abate as the perceptions of the crisis diminished. In the absence of the threat of violence, colleges and universities should return to their previous (presumably colorblind or racist) admissions and recruitment procedures. This would be consistent with Karen's (1991) argument that a 'counter-mobilization' helped produce declines in the postsecondary enrollment of African American students in the 1980s. In fact, Table 4 suggests a decline in the salience of race in college recruitment and admissions, as crisis management would anticipate, but not a disappearance of the practice. Though crisis management may explain the drop in affirmative action for African American students over the 1970s, it does not help to explain the persistence of race-based affirmative action through the 1980s.

The crisis management thesis could also account for the *absence* of affirmative action on behalf of Hispanics or socioeconomically disadvantaged students. Although there was a Hispanic counterpart to the civil rights struggle, as a social movement the struggle of Hispanics never attained the salience or media attention of the black civil rights struggle. This could be in part due to the lower levels of violence (and perceived threat) associated with Hispanic protests. Carter (1992) reports that between 1964 and 1971 there were 752 black riots and 44 Hispanic riots, or 94% fewer Hispanic riots. Hispanics simply did not pose the threat that blacks did to white-dominated institutions in the 1960s.

If Hispanics were unable to capitalize on the civil rights revolution to gain access to historically privileged institutional positions, members of the working class and poor were even less empowered. There is no evidence of a serious class equality movement in the United States during the 1960s or thereafter. Looking at rates of college enrollment among different social groups, Karen (1991) argues that increases in the college enrollment rates of African Americans and women between 1960 and 1986 reflect the political struggles in which those groups engaged, while stagnation in the enrollment rate for working class students is due to that group's lack of political mobilization.[29] In fact, according to Rubinson (1986), social class has never been an organizing framework for conflict over education in the United States. He argues that early universal white male suffrage undermined the formation of class-based political parties in the United States, leading instead to interests defined by race, ethnicity and religion rather than by social class. Without a class struggle, there could be no class-based crisis to which colleges and universities had to respond.

There have, of course, been some efforts to lessen the challenges economically disadvantaged families face in securing a college education for their children. In addition to federal and state tuition assistance programs, many institutions offer financial aid packages in the form of grants, loans and work study. These programs have typically not been intended to serve as compensatory sponsorship, however. They remove *current* barriers to participation faced by

[29] Some writers in the 1960s and 1970s suggested that a class crisis in higher education was imminent. For example, Bowles and Gintis suggested in 1976 that "the contradictions [of global capitalism] now manifest in higher education provide us with the opportunity to organize, and to bring that revolutionary potential to fruition." I have seen little evidence of such organization.

academically successful but economically disadvantaged students, but do not seek to redress past disadvantages those students faced as a result of economic hardship.[30]

If crisis management helps account for the decline in the strength of race-based affirmative action over the 1970s, what can account for its persistence into the 1990s? And how, in the absence of a potentially threatening social movement, can we account for the emergence of preferences for Hispanic students over the 1980s? Two plausible and related explanations for these phenomena are the diffusion of norms across organizations and the evolution of a rhetoric of diversity independent of legal rationales rooted in the civil rights struggle.

Diffusion

The logic of normative diffusion derives from Edelman's (1992; 2001) work on affirmative action policies.[31] Edelman (1992) finds that colleges created equal employment opportunity and affirmative action (EEO/AA) structures at over three times the rate of businesses, but at a slower rate than local, state and federal agencies. More importantly, she notes that such structures enjoyed a high degree of diffusion across organizations by 1970, despite the fairly lax federal enforcement of EEO/AA requirements prior to 1970. This pattern suggests "that it is the indirect normative effect of the law—rather than the direct threat of legal sanctions—that motivates organizations most sensitive to their environments to create symbols of attention to the law." (p. 1563)

Although colleges and universities were not legally obligated to take race/ethnicity or social class into account, the norm of doing so may have crystallized during the period of crisis

[30] There is some evidence that this may be changing. For example, sometime around 2004 Harvard added a docket for 'socioeconomic disadvantage' to its admissions process (Basinger and Smallwood 2004). Consistent with Karen's (1990) analysis of Harvard's admissions procedures, this suggests that socioeconomic disadvantage joined race/ethnicity, legacy status and prep school affiliation as symbolically elevated markers at Harvard.

[31] Diffusion could also be related to institutional isomorphism. Following DiMaggio and Powell (1983), it may be that, as admissions personnel became professionalized and professional associations of admissions personnel rose in prominence, norms regarding admissions spread across institutions.

management. As Edelman (1991) and others have noted, organizational practices can develop a life of their own, persisting or evolving even after the problem they sought to address has been resolved or lost saliency. Over the course of the 1960s and 1970s, affirmative action programs may have simply become part of what it means to be a legitimate college or university in the same way that a common script of well-defined roles and behaviors define 'real' secondary schools (Metz 1990). In their study of sixteen liberal arts colleges, Duffy and Goldberg (1998) find support for this assertion, arguing that the desire of colleges in their study to enroll disadvantaged students "became almost an obsession" (p. 141). This was particularly true of the competition to enroll black students, which, they suggest, became more intense as the number of black matriculants became a status marker for liberal arts colleges. Along the same lines, Steinberg (2002) writes that "elite colleges had become something like combatants in a global arms race, a contest in which strength would be measured by stockpiles of candidates arranged by test scores, grade point averages, outside interests and skin color."[32]

Although not the original intended beneficiaries of affirmative action programs, over time Hispanics began to benefit from these programs as the political and institutional environment changed.[33] First, the 1978 *Bakke* decision may have reflected or contributed to a fundamental shift in the institutional climate for compensatory sponsorship of minority students in higher education. In *Bakke*, the Supreme Court ruled in favor of a white plaintiff who argued that he had been discriminated against when he was denied admission to medical school at the University of California—Davis while minority students with weaker grades and test scores had been admitted. The Court wrote that, although the University did have a legitimate interest in maintaining a racially and ethnically diverse class, it could not do so by imposing a quota system. Instead, the University's remedy to racial/ethnic inequalities in enrollments would have to be narrowly tailored. Second, around the same time the Reagan administration gained control of the White House and sought to dramatically curtail enforcement of Equal Employment Opportunity and Affirmative Action provisions (Kelly and Dobbin 2001). This inaction helped set a tone for affirmative action policies in the United States.

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[32] Note that social class is *not* among the attributes over which Steinberg suggests institutions compete. For more anecdotal evidence on the matriculation of African American students as a source of institutional status competition, see Steinberg (2000a, 2000b) and Dobbs (2003).

[33] Skrentny (2002: 177) claims that "nonblack official minorities became co-beneficiaries of [affirmative action] within a year or two," but empirical evidence presented in this paper suggests that the lag was a bit longer.

These events may have contributed to a change in diversity rhetoric and concomitant expansion of the pool of affirmative action beneficiaries. Proponents of diversity rhetoric, according to Edelman et al., argue that "diversity is directly valuable to organizational efficiency and important in its own right rather than because it might promote legal ideals." (2001: 1591). Changes in diversity rhetoric may have been endemic to postsecondary institutions, but may also have originated from those hired to establish and manage affirmative action programs. Kelly and Dobbin (2001) find that, faced with reduction in the enforcement of affirmative action provisions during the 1980s, affirmative action managers "downplayed legal compliance and emphasized first the goal of efficiency and later the goal of increasing profits by expanding diversity in the workforce or customer base." (89)

The postsecondary institutions included in this study do not produce profits, but do produce a product: well-rounded and highly educated young adults. Engaging in affirmative action, they argue, enhances the value of the education they can offer by increasing the breadth of perspectives to which students are exposed (Iuliano et al. 2003; Keith et al. 2003; Milem 2000). Diversity rhetoric arose during a period of legal ambiguity and controversy over affirmative action. Key to the timing of Hispanic preferences, diversity rhetoric steps away from arguments based on civil rights toward arguments based on educational quality. In doing so, it may enable the expansion of that which is considered diverse to include Hispanics. As the rhetoric diffuses downward across postsecondary organizations, preferences for Hispanic matriculants may also have spread. Furthermore, Hispanics constitute a rapidly growing and important new pool of clients for colleges and universities. By favoring admitting Hispanic students relatively early on, colleges and universities may be looking to the future to cultivate a broader base of clients.

Conclusion

This paper demonstrates the importance of institutional agency in structuring the postsecondary matriculation patterns of students who completed high school in 1972, 1982 and 1992. Conditioning on student secondary school achievement, commitment to attending a four-year college (proxied by taking a college entrance exam), participation and leadership in

extracurricular activities, and even preferences for some important characteristics of college and universities, I find evidence of affirmative action for African Americans, and later Hispanics, at a wide range of institutions. In the early 1990s, over half of the liberal arts colleges and comprehensive four-year colleges and universities preferred African American and Hispanic students to otherwise similar white students.

These findings are premised on the assumption that, net of the individual attributes discussed above, colleges and universities have substantial latitude in the kinds of students they recruit and enroll. The assumption is perhaps more persuasive for the more affluent institutions toward the top of the distribution than it is for the less affluent institutions near the bottom. However, the findings presented here are consistent with institutional self-reports reviewed in other research. Breland et al. (2002), for example, report that the majority of four-year colleges claimed to target racial/ethnic minority student for special recruiting activities in 1992. Likewise, Grodsky and Kalogrides (2005) show that just over half of four-year colleges and universities claimed to at least consider student race/ethnicity in making admissions decisions between the 1980s and 1990s.

While postsecondary institutions place a premium on racial/ethnic diversity, they seem much less inclined to pursue socioeconomic diversity in their matriculating classes. The net matriculation advantages enjoyed by the children of more socioeconomically successful parents are consistent with other empirical work. In their study of elite colleges, Bowen and Bok (1998) compare the distribution of ‘socioeconomic status’ for members of their sample to that of college-age students nationwide. They find that high SES black students are over-represented in their sample by a factor of 5, while low-SES students are under-represented in their sample by a factor of 3.6 (my calculations based on Figure 2.12, p. 49). Like Bowen and Bok’s work, my

research is consistent with charges leveled by Kahlenberg (1996), Sacks (2003) and Rimer and Arenson (2004) that race-based affirmative action programs do not target the segment of the minority population most in need of assistance.

Beyond the contours of college matriculation patterns over the 1970s and 1980s, this paper shows the importance of institutional action to our understanding of educational stratification. Research based on status attainment, the thesis of maximally maintained inequality, and other microlevel student-side models risks misrepresenting the role of student and family agency in the educational attainment process. Likewise, work on social reproduction may misrepresent the extent to which educational institutions can, through compensatory sponsorship, undermine stratification regimes. Colleges and universities over the course of the 1970s and 1980s worked to change the relationship between some student background characteristics and matriculation patterns. They reached out to African American students, and later Hispanic students, to redistribute college opportunities through the process of compensatory sponsorship. In doing so, they may have weakened rather than reinforced some aspects of social stratification.

This does not necessarily mean that postsecondary institutions acted with the sole intention of enhancing social equality. The beneficiaries of compensatory sponsorship are historically and politically determined. Black students were early beneficiaries at least in part because colleges and universities feared the consequences of excluding them; to manage a potential crisis of confidence, image or actual violence, colleges and universities began recruiting and admitting African American students with lowers levels of secondary school achievement than white students of the same socioeconomic background. As diversity rhetoric changed over the 1970s and 1980s, however, colleges sought to extend similar opportunities to Hispanic students.

Colleges and universities have the potential to reduce the effects of social background characteristics on postsecondary attendance outcomes. Whether they have continued to realize that potential since the early 1990s is less clear. Evidence from self-reports suggests that many schools have stepped back from their earlier commitments to matriculating racial and ethnic minority students. Over the 1990s, there was a sharp decline in both claims to target minority students for recruitment (Breland et al. 2002) and claims to consider minority status in making admissions decisions (Grodsky and Kalogrides 2005). This may be a result of increases in the number and quality of minority students choosing to attend college (or alternatively declines in the number and quality of white students) that negated the necessity of advantaging minority students. However, there is little evidence of a black-white convergence in SAT scores between 1986 and 2003 (NCES 2004: Table 128). Hispanic-white convergence in mathematics and reading achievement among 17 year olds has been modest and inconsistent; the black-white gap in reading and mathematics has been stable.[34]

A more likely cause of the shift away from stated preferences for minority matriculants are shifts in the legal and policy environments away from race-based affirmative action. In the late 1990s, the Fifth Circuit Court of Appeals struck down affirmative action programs in college admissions for Louisiana, Mississippi and Texas in the *Hopwood* decision, while voters in California and Washington passed ballot initiatives barring affirmative action in public institutions. These legal developments directly impacted postsecondary institutions in those states and may have indirectly influenced colleges and universities in other states as well. To the extent that stated preferences and behavior align in the future as they appear to have aligned in

[34] Based on tables from http://nces.ed.gov/nationsreportcard/ltt/results2004/natsubgroups.asp.

the past, these developments bode poorly for racial and ethnic equality in patterns of postsecondary attendance.

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Table 1: College characteristics by college category, 1992

	SAT category					
Measure	<.10	.10-.50	.50-.75	.75-.90	.90-.97	>.97
SAT total	786	889	980	1070	1174	1306
	(39.1)	(31.6)	(23.6)	(28.3)	(35.0)	(47.6)
out-of-state tuition	5351	6080	7708	9942	12677	15018
	(2029)	(2279)	(2340)	(3227)	(3917)	(3397)
per-pupil instructional	2874	3511	4599	6043	9922	17029
expenditures	(1184)	(2483)	(2902)	(3043)	(6777)	(9291)
% FT faculty with	0.52	0.60	0.70	0.79	0.86	0.94
terminal degree	(0.17)	(0.18)	(0.16)	(0.15)	(0.12)	(0.07)
acceptance rate	0.83	0.80	0.75	0.71	0.62	0.35
	(0.14)	(0.14)	(0.13)	(0.14)	(0.16)	(0.11)
yield	0.58	0.54	0.47	0.40	0.39	0.43
	(0.18)	(0.17)	(0.16)	(0.12)	(0.14)	(0.11)
% completing degree	0.41	0.45	0.54	0.63	0.74	0.88
in <=5 years	(0.17)	(0.15)	(0.14)	(0.12)	(0.11)	(0.05)
% first-time first-year	0.80	0.77	0.71	0.63	0.43	0.22
from in-state	(0.21)	(0.20)	(0.22)	(0.23)	(0.28)	(0.17)

Table 2: Student sample restrictions

	Data					
	NLS		HS&B		NELS	
Restriction	Freq	%	Freq	%	Freq	%
None	21902		14825		14915	
Adequate imputation data	19332	88.3%	12119	81.7%	14000	93.9%
Postsecondary attendance	12304	63.6%	7315	60.4%	8987	64.2%
Attend eligible institution	9946	80.8%	6190	84.6%	7856	87.4%
Included in 2nd follow-up	9345	94.0%	6190	100.0%	7550	96.1%
Analytic sample size	9345		6190		7550	

Table 3: Descriptive statistics

	1972	1982	1992
race/ethnicity			
black	0.060	0.064	0.073
	(0.238)	(0.245)	(0.260)
Hispanic	0.030	0.081	0.085
	(0.171)	(0.273)	(0.279)
Asian	0.016	0.020	0.043
	(0.126)	(0.140)	(0.202)
female	0.470	0.526	0.525
	(0.499)	(0.499)	(0.499)
social origins			
occupation	-0.834	1.090	1.202
	(1.548)	(1.322)	(1.301)
ln(income)	2.417	2.919	3.750
	(0.578)	(0.629)	(0.831)
parental education	13.770	13.637	14.797
	(2.671)	(3.001)	(2.661)
achievement			
SAT score	8.887	8.435	8.745
	(2.170)	(2.163)	(2.128)
GPA	2.681	2.773	2.731
	(0.703)	(0.658)	(0.646)
extracurricular			
athletic participation	0.573	0.608	0.472
	(0.495)	(0.488)	(0.499)
extra curric participation	0.728	0.807	0.785
	(0.445)	(0.394)	(0.411)
athletic leadership	0.162	0.244	0.205
	(0.369)	(0.430)	(0.403)
extra curric leadership	0.278	0.398	0.350
	(0.448)	(0.490)	(0.477)

Table 3: Descriptive statistics

student preferences			
expenses	1.513	1.924	2.007
	(1.201)	(1.033)	(0.783)
financial aid	1.239	1.787	2.145
	(1.101)	(1.057)	(0.866)
specific courses	1.716	2.224	2.514
	(1.305)	(1.104)	(0.752)
athletics	0.939	1.300	1.377
	(0.838)	(0.842)	(0.694)
live at home	1.084	1.397	1.486
	(1.014)	(0.956)	(0.792)
coll reputation	1.573	2.083	2.354
	(1.226)	(1.074)	(0.812)
missing preferences	0.342	0.175	0.047
	(0.475)	(0.380)	(0.211)
selection			
took entrance exam	0.712	0.730	0.758
	(0.453)	(0.444)	(0.428)
sample size	7550	6190	9345

Table 4: Ratios of race/ethnicity coefficients to SAT coefficients

	black vs white			Hispanic vs white		
college type	1972	1982	1992	1972	1982	1992
Descriptive						
bottom decile	-3.64	-2.26	3.28	-10.40	0.31	3.04
	(4.81)	(1.72)	(4.68)	(9.86)	(1.06)	(3.99)
10-50%	2.89**	2.16	1.36*	-2.29	0.33	0.31
	(0.85)	(1.26)	(0.69)	(1.43)	(1.06)	(0.62)
50-75%	2.87**	1.35*	1.71**	0.46	-0.67	-0.61
	(0.57)	(0.56)	(0.54)	(0.68)	(0.53)	(0.55)
75-90%	3.31**	2.08**	1.88**	1.11*	0.45	1.09**
	(0.37)	(0.43)	(0.39)	(0.56)	(0.32)	(0.36)
90-97%	3.53**	1.65**	1.87**	0.89	0.48	1.16**
	(0.41)	(0.41)	(0.42)	(0.79)	(0.34)	(0.38)
>97%	3.24**	1.54**	1.65**	1.03	0.91**	0.99**
	(0.47)	(0.34)	(0.53)	(0.98)	(0.32)	(0.32)
Corrected for self-selection						
bottom decile	0.35	-1.70	0.02	-2.94	0.40	-2.35
	(1.22)	(2.36)	(2.65)	(2.03)	(0.96)	(2.64)
10-50%	-156.99	6.92	1.54	670.97	5.98	1.31
	(8410.12)	(12.03)	(1.66)	(35423.75)	(11.38)	(1.58)
50-75%	3.99*	-0.34	1.87*	0.20	-2.79	-0.67
	(1.64)	(1.44)	(0.75)	(1.81)	(1.73)	(0.76)
75-90%	3.98**	1.57*	1.94**	1.39	-0.09	1.22**
	(0.62)	(0.71)	(0.42)	(0.90)	(0.58)	(0.38)
90-97%	3.91**	0.88	1.91**	0.92	-0.020	1.26**
	(0.56)	(0.66)	(0.44)	(1.01)	(0.52)	(0.43)
>97%	3.46**	1.29**	1.65**	1.25	0.84*	1.17**
	(0.65)	(0.42)	(0.55)	(1.32)	(0.38)	(0.34)
Full model						
bottom decile	1.02	-1.40	0.86	-2.86	0.32	-2.07
	(1.15)	(2.47)	(2.39)	(2.00)	(0.99)	(2.35)
10-50%	7.37	9.82	0.47	-97.10	3.41	2.25
	(54.65)	(16.29)	(2.07)	(801.33)	(7.79)	(2.41)
50-75%	3.07*	-1.27	1.62*	0.54	-2.45	-0.36
	(1.56)	(2.11)	(0.82)	(1.68)	(2.05)	(0.85)
75-90%	3.60**	1.51	1.73**	1.68	0.29	1.46**
	(0.64)	(0.80)	(0.42)	(0.91)	(0.58)	(0.36)
90-97%	3.59**	0.79	1.73**	1.15	0.18	1.58**
	(0.57)	(0.75)	(0.47)	(1.03)	(0.59)	(0.39)
>97%	3.09**	1.09*	1.46**	1.80	1.04**	1.30**
	(0.72)	(0.48)	(0.55)	(1.43)	(0.38)	(0.34)

Table 5: Ratios of SES coefficients to SAT score coefficients

	parental education			parental income			parental occupation		
college type	1972	1982	1992	1972	1982	1992	1972	1982	1992
Descriptive									
bottom decile	-0.27	-0.21	0.20	0.81	0.85	-0.14	-0.01	-0.17	0.55
	(0.50)	(0.18)	(0.64)	(1.89)	(0.76)	(1.14)	(0.72)	(0.33)	(1.17)
10-50%	0.38**	0.38*	0.16	1.31**	0.80	0.29	0.15	-0.04	0.22
	(0.12)	(0.17)	(0.10)	(0.44)	(0.57)	(0.24)	(0.18)	(0.28)	(0.17)
50-75%	0.29**	0.29**	0.17**	0.84**	0.90**	0.60**	0.08	0.09	0.31**
	(0.06)	(0.08)	(0.06)	(0.24)	(0.26)	(0.18)	(0.09)	(0.14)	(0.12)
75-90%	0.20**	0.23**	0.14**	0.55**	0.80**	0.63**	0.21**	0.00	0.11
	(0.05)	(0.05)	(0.04)	(0.20)	(0.21)	(0.15)	(0.07)	(0.09)	(0.08)
90-97%	0.25**	0.16**	0.12**	0.94**	0.78**	0.97**	0.03	0.02	0.09
	(0.06)	(0.05)	(0.05)	(0.32)	(0.25)	(0.20)	(0.08)	(0.10)	(0.10)
>97%	0.085	0.17**	0.23**	0.92**	0.46*	0.32**	0.19**	0.05	0.07
	(0.06)	(0.04)	(0.04)	(0.31)	(0.18)	(0.12)	(0.08)	(0.09)	(0.11)
Corrected for self-selection									
bottom decile	0.15	-0.15	0.40	0.950	0.83	1.59	0.18	-0.09	0.39
	(0.17)	(0.20)	(0.42)	(0.61)	(0.68)	(1.07)	(0.24)	(0.31)	(0.65)
10-50%	-5.75	0.20	-0.07	-66.292	0.080	-0.59	29.25	3.20	-0.09
	(309.71)	(0.87)	(0.23)	(3534.21)	(3.16)	(0.74)	(1536.63)	(5.88)	(0.40)
50-75%	0.17	0.21	0.12	0.500	1.11	0.48	-0.24	-0.30	0.25
	(0.15)	(0.15)	(0.08)	(0.63)	(0.61)	(0.25)	(0.27)	(0.33)	(0.16)
75-90%	0.10	0.14	0.12**	0.24	0.85**	0.59**	0.17	-0.27	0.07
	(0.08)	(0.07)	(0.04)	(0.32)	(0.34)	(0.17)	(0.11)	(0.15)	(0.09)
90-97%	0.22**	0.03	0.11*	0.93**	0.79*	0.96**	-0.04	-0.21	0.07
	(0.08)	(0.08)	(0.05)	(0.40)	(0.38)	(0.21)	(0.10)	(0.17)	(0.11)
>97%	-0.06	0.13**	0.21**	0.77	0.41	0.26	0.13	-0.02	0.02
	(0.11)	(0.05)	(0.05)	(0.43)	(0.21)	(0.15)	(0.11)	(0.12)	(0.11)

Table 5: Ratios of SES coefficients to SAT score coefficients

	parental education			parental income			parental occupation		
college type	1972	1982	1992	1972	1982	1992	1972	1982	1992
Full model									
bottom decile	0.17	-0.16	0.43	0.79	0.60	1.11	0.11	-0.08	0.36
	(0.17)	(0.22)	(0.40)	(0.61)	(0.69)	(0.83)	(0.24)	(0.33)	(0.60)
10-50%	-0.40	0.50	-0.23	8.977	-0.50	-0.61	-2.04	2.88	-0.22
	(5.55)	(1.09)	(0.34)	(71.61)	(3.35)	(1.09)	(19.32)	(5.18)	(0.57)
50-75%	0.10	0.15	0.07	0.366	1.33	0.23	-0.14	-0.32	0.19
	(0.14)	(0.18)	(0.09)	(0.61)	(0.82)	(0.30)	(0.24)	(0.42)	(0.17)
75-90%	0.060	0.10	0.11*	0.14	0.71*	0.41*	0.21*	-0.24	0.01
	(0.08)	(0.08)	(0.05)	(0.32)	(0.34)	(0.17)	(0.10)	(0.17)	(0.09)
90-97%	0.20*	-0.01	0.11*	1.04**	0.71	0.63**	0.00	-0.24	-0.01
	(0.08)	(0.09)	(0.05)	(0.42)	(0.45)	(0.21)	(0.11)	(0.19)	(0.10)
>97%	-0.09	0.09	0.18**	0.78	0.20	0.02	0.18	-0.02	-0.04
	(0.12)	(0.06)	(0.05)	(0.52)	(0.20)	(0.14)	(0.11)	(0.13)	(0.09)

Appendix 1: MNL coefficients

	bottom decile			.10-.50			.50-.75			.75-.90			.90-.97			>.97		
	1972	1982	1992	1972	1982	1992	1972	1982	1992	1972	1982	1992	1972	1982	1992	1972	1982	1992
race/ethnicity																		
black	-0.078	0.459	-0.003	0.116	-0.190	0.177	0.538**	-0.062	0.591*	1.373***	0.655*	1.438***	2.288***	0.611	2.195***	3.027***	1.896**	2.936**
	(0.285)	(0.483)	(0.360)	(0.166)	(0.222)	(0.190)	(0.194)	(0.257)	(0.242)	(0.218)	(0.330)	(0.322)	(0.329)	(0.484)	(0.504)	(0.561)	(0.716)	(1.062)
Hispanic	0.655*	-0.108	0.318	-0.498*	-0.164	0.150	0.027	-0.521*	-0.212	0.480	-0.036	0.904**	0.540	-0.014	1.451**	1.090	1.235	2.081**
	(0.328)	(0.275)	(0.275)	(0.236)	(0.179)	(0.168)	(0.245)	(0.213)	(0.237)	(0.314)	(0.238)	(0.289)	(0.592)	(0.363)	(0.462)	(1.151)	(0.637)	(0.658)
Asian	-0.730	-0.982	-0.773	-1.242**	-0.188	-0.093	-0.305	-0.852**	0.093	0.163	0.439	0.536**	0.495	0.108	0.548	0.814	-0.305	0.523
	(0.610)	(0.677)	(0.409)	(0.431)	(0.215)	(0.239)	(0.245)	(0.275)	(0.197)	(0.339)	(0.327)	(0.206)	(0.444)	(0.295)	(0.348)	(0.673)	(0.550)	(0.397)
female	-0.219	-0.476*	-0.272	0.079	-0.154	-0.141	0.011	-0.004	-0.165	-0.023	-0.064	-0.100	-0.367*	0.125	-0.252	-0.124	-0.360	-0.580
	(0.146)	(0.214)	(0.197)	(0.075)	(0.103)	(0.103)	(0.083)	(0.129)	(0.109)	(0.097)	(0.138)	(0.147)	(0.166)	(0.194)	(0.203)	(0.305)	(0.330)	(0.373)
social origins																		
Occupation	-0.039	0.024	-0.053	-0.022	-0.088	-0.010	-0.032	-0.055	0.079	0.057	-0.111	0.054	-0.024	-0.146	0.076	0.116	-0.034	0.031
	(0.056)	(0.081)	(0.090)	(0.032)	(0.047)	(0.045)	(0.033)	(0.056)	(0.051)	(0.037)	(0.061)	(0.067)	(0.061)	(0.113)	(0.122)	(0.098)	(0.173)	(0.191)
ln(income)	-0.212	-0.225	-0.216*	0.049	-0.002	-0.068	0.067	0.208*	0.150	0.084	0.353**	0.438***	0.543*	0.549*	1.106***	0.677	0.601	0.456
	(0.135)	(0.188)	(0.099)	(0.075)	(0.087)	(0.072)	(0.086)	(0.098)	(0.084)	(0.111)	(0.135)	(0.122)	(0.220)	(0.250)	(0.268)	(0.391)	(0.311)	(0.281)
parental education	-0.033	0.040	-0.055	0.004	-0.006	-0.008	0.024	0.039	0.036	0.033	0.059	0.088**	0.130**	0.023	0.121*	-0.048	0.188*	0.373***
	(0.039)	(0.047)	(0.048)	(0.018)	(0.024)	(0.026)	(0.021)	(0.028)	(0.027)	(0.026)	(0.033)	(0.033)	(0.045)	(0.056)	(0.056)	(0.091)	(0.077)	(0.091)
achievement																		
SAT score	-0.223**	-0.270*	-0.136	-0.001	-0.027	0.115*	0.135***	0.187**	0.316***	0.345***	0.416***	0.740***	0.585***	0.698***	1.148***	0.874***	1.472***	1.783***
	(0.085)	(0.118)	(0.085)	(0.039)	(0.051)	(0.047)	(0.037)	(0.067)	(0.050)	(0.040)	(0.076)	(0.067)	(0.069)	(0.107)	(0.107)	(0.121)	(0.225)	(0.187)
GPA	0.283	1.079**	-0.428	0.145	-0.012	0.133	0.032	0.004	0.770***	0.238	-0.275	0.846***	0.897***	-0.856*	0.948*	0.363	0.592	0.268
	(0.202)	(0.372)	(0.241)	(0.088)	(0.165)	(0.162)	(0.108)	(0.209)	(0.173)	(0.129)	(0.251)	(0.219)	(0.204)	(0.387)	(0.448)	(0.515)	(0.665)	(0.666)
selection	-1.227*	-0.263	-2.448***	-1.508***	-2.083***	-1.863***	-2.096***	-2.519***	-1.458**	-2.061***	-3.414***	-0.624	-1.455	-6.662***	-0.681	-6.039*	-4.119	-5.795*
	(0.483)	(0.832)	(0.582)	(0.238)	(0.381)	(0.391)	(0.271)	(0.530)	(0.455)	(0.368)	(0.807)	(0.732)	(0.917)	(1.778)	(1.252)	(2.724)	(3.749)	(2.942)
constant	0.559	-2.815	2.841	-0.286	1.031	-0.379	-1.274	-2.441	-6.113***	-4.581***	-4.443*	-13.471***	-13.338***	-5.962*	-22.803***	-12.736***	-24.215***	-29.987***
	(1.713)	(2.816)	(1.770)	(0.806)	(1.179)	(1.179)	(0.855)	(1.502)	(1.300)	(0.990)	(1.909)	(1.616)	(1.757)	(2.943)	(2.340)	(4.105)	(5.712)	(6.069)