# Revisiting Racial Differences in College Attendance: The Role of Historically Black Colleges and Universities

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*It is well known that the college enrollment rates of blacks have historically trailed those of whites, although in recent decades the actual size of the racial gap has fluctuated. Prior research has shown that blacks are more likely than whites to attend college after high school graduation, net of socioeconomic background and academic performance. It has been suggested that this "net black advantage" may be spurious—due to blacks' relatively high enrollment rates in historically black colleges and universities. With data from the National Education Longitudinal Study of 1988–1994, this hypothesis is tested by examining black-white differences in enrollment in different types of colleges: any college, four-year colleges, non-black four-year colleges, and academically selective four-year colleges. Overall, results confirm the existence of a net black advantage at low levels of family socioeconomic background. The implications of these findings for racial equality in access to higher education are explored.*

**The racial gap** in college attendance between blacks and whites has been well documented. Numerous studies have shown that the college enrollment rates of blacks have trailed those of whites, although the actual size of the racial gap has fluctuated somewhat in recent decades. As depicted by Hauser (1993a:287), the college attendance gap between blacks and whites has followed a "seesaw pattern." For example, it stood at 12.7 percentage points in 1968 but was a mere 1.1 percentage points in 1977. It increased to 19.5 percentage points in 1986 and narrowed again to 12.7 percentage points by 1994 (Hauser 1993a; National Center for Education Statistics 1999).

Although blacks' overall college enrollment rates have lagged behind those of whites, past research has shown that blacks are more likely than whites to attend college *net* of socioeconomic background and academic characteristics (Alexander, Holupka, and Pallas 1987; Bauman 1998; Hauser 1993b; Kane and Spizman 1994; Rivkin 1995). For simplicity, we refer to this finding as a "net black advantage." Although a net black advantage in college enrollment has been repeatedly reported in the literature, some scholars doubt its validity and suggest that this finding may be a statistical artifact owing to the existence of historically black colleges and universities (HBCUs) (Manski and Wise 1983; Monk-Turner 1995); that is, blacks only *appear* to be more likely than whites to attend college net of background

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factors because a large number of blacks enroll in HBCUs, colleges in which blacks do not compete with whites for admission. The implication is that without HBCUs there would be a net black *disadvantage* in college enrollment.

The supposition that the net black advantage is due to blacks' enrollment in HBCUs is essentially a hypothesis about an aggregation error (also called Simpson's paradox), in which the direction of a relationship between two variables reverses when data are aggregated over a third dimension (Simpson 1951). Such an error occurs when an omitted variable is correlated with both an explanatory variable and the dependent variable (Appleton, French, and Vanderpump 1996; Blyth 1972). In our case, the question is whether the relationship between race and college attendance reverses when college enrollment is disaggregated by college type. That is, will the net black advantage remain once we distinguish enrollment in HBCUs from enrollment in non-HBCUs?

There is some evidence to suggest that the net black advantage in college enrollment is driven by blacks' attendance at historically black colleges and universities. In a study of community college versus four-year college attendance, Monk-Turner (1995) attempted to control for HBCUs by controlling for *region* in her test of the net black advantage. She demonstrated that analyses that condition on region reveal a net black advantage only in the South. However, Monk-Turner merely used region as a proxy for the relative scarcity of community colleges in the South and for the prevalence of HBCUs there. Because her analysis fails to distinguish HBCUs as a unique college type, it remains unclear whether blacks' net advantage is due to their enrollment in HBCUs, and we are left to wonder whether blacks in the South are more or less likely than whites to enroll in four-year non-HBCUs. Therefore, Monk-Turner's analysis does not serve as a sufficient test of the aggregation error hypothesis and cannot inform us as to whether the net black advantage is due to blacks' enrollment in HBCUs.

We examine black-white differences in college enrollment using several alternative operationalizations of colleges. We distinguish between two- and four-year colleges, between HBCUs and other four-year colleges, and between academically selective and nonselective four-year colleges to determine whether the net black advantage in college attendance is real or a statistical artifact that results from the failure to treat HBCUs as a distinct college type. We proceed by first providing insight into how and why an aggregation error involving race, college enrollment, and college type might exist, after which we present an analysis of college enrollment patterns that tests the aggregation error hypothesis. We then explore the implications that our findings have for racial equality in access to higher education in the United States.

## HBCUs AND THE COLLEGE ATTENDANCE OF BLACKS

To understand the role played by historically black colleges and universities in blacks' college attendance we invoke Astin's (1965) student-college matching framework, which consists of two interrelated processes. The first process concerns where students seek admission. Astin has argued that students seek to attend colleges that not only satisfy their academic needs but also meet the expectations of their influential others, such as parents, teachers, and friends. Stated differently, the first process is one in which students exercise control over the path they take to postsecondary education by entering certain college application pools rather than others. The second process involves the selection of students by admissions officers. This process is one in which colleges and universities exert influence over the composition of their student bodies by admitting or rejecting applicants. HBCUs are distinct from other four-year colleges in both processes—the extent to which they appeal to black applicants and the likelihood with which they admit black applicants.

HBCUs and other four-year colleges differ in their historical orientations toward providing educational opportunities for black students. Whereas predominantly white colleges have histories of excluding blacks, HBCUs were specifically created to redress this exclusion. Born out of the efforts of white philanthropists, black and white religious organizations, and the Freedmen's Bureau, HBCUs represented the expansion

of educational opportunities for blacks in the South after their emancipation but continued exclusion from institutions of higher education (Redd 1998; Roebuck and Murty 1993). HBCUs became seats of black progress as they trained black teachers to instruct masses of newly freed slaves, produced the first large group of black professionals in the country, and educated black preachers and others who would become leaders in the struggle for racial equality.

It would be too simplistic, however, to assume that the rich history of HBCUs is the only reason for their appeal to black prospective students. Today, as before, HBCUs differ from other four-year colleges in their campus climates. Research suggests that HBCUs provide campus environments designed to nurture black students (Redd 1998; Roebuck and Murty 1993). Curricula at HBCUs include a greater integration of black history and culture than those at majority-white colleges and universities. Additionally, black students themselves are more integrated into campus life at HBCUs than at other colleges and universities; they enjoy closer relationships with faculty and participate more fully in campus organizations and activities (Redd 1998; Roebuck and Murty 1993). Given this, it is not surprising that a sizable proportion of black prospective college students seek their postsecondary education at HBCUs rather than at other four-year colleges. As a result, the first component of Astin's matching process is characterized by the self-selection of students into different college application pools by race, many blacks enter pools for HBCUs, and almost all whites enter those for non-HBCUs.

The treatment of black applicants in the second component of the student-college matching process also differs between HBCUs and other four-year colleges. Although blacks were once excluded from other four-year colleges based on race, no such explicit racial barriers exist today. Rather, the proximate determinants of admission are academic credentials, although there are no universally accepted standards regarding the specific academic criteria that should determine admission. In practice, colleges and universities set their own admissions policies, thereby directly shaping the postsecondary opportunity structure for blacks.[1] By comparison, the very mission of HBCUs is to educate blacks, and many HBCUs have admissions policies consistent with this objective. Given the racial inequality that exists in elementary and secondary education, these policies allow HBCUs to provide college opportunities to some blacks who otherwise might not attend college due to their academic weaknesses in areas typically considered for college admission.

Not only do HBCUs accept and nurture black students who might not be admitted to other four-year colleges, HBCUs also promote their graduation, with graduation rates higher than those for black students at predominantly white colleges. As a result, a sizable portion of black students receive their degrees from HBCUs every year. For example, in 1993–1994, graduates from HBCUs accounted for 28.0 percent of all bachelor's degrees awarded to blacks, 14.5 percent of all master's degrees, and 9.3 percent of all doctorate degrees (National Center for Education Statistics 1996a; Redd 1998). The ability of HBCUs to retain and graduate black students is noteworthy in light of the fact that the risk factors that impede graduation are more prevalent among black students than among white students. These risk factors include postponed college enrollment, earning GEDs rather than high school diplomas, financial constraints that permit only part-time enrollment, parenthood, and being first-generation college students (National Center for Education Statistics 1995; O'Brien and Zudak 1998).

In sum, the distinct history, positive campus environment, and open opportunity structure at HBCUs may combine to attract and admit enough black high school graduates to produce the documented net black advantage in college enrollment. If HBCUs draw enough black high school graduates

[1] Admissions policies designed to increase the representation of black (and Latino) students in academically selective colleges were the subject of two cases that appeared before the United States Supreme Court in 2003. These cases challenged the use of race in admissions decisions to institutions of higher education. On June 23, the Court upheld the use of race (see *Grutter v. Bollinger*) and clarified the means by which race can be taken into account in the college admissions process (see *Gratz v. Bollinger*).

into postsecondary education, particularly those who would otherwise not attend college if attending a black college were not an option, then the hypothesis that the net black advantage is due to blacks' attendance at HBCUs is plausible. We test this hypothesis in our analysis.

## DATA AND METHODS

### *Data*

Our data come from the 1988–1994 National Education Longitudinal Study (NELS). NELS is a nationally representative sample of adolescents who were in the eighth grade in 1988. It contains 24,599 students in its base year. The sample of respondents was followed up three times—in 1990, 1992, and 1994. By 1992 most respondents had graduated from high school. We include respondents in our sample if they (1) were high school graduates by 1992, (2) had valid information on their college enrollment status by 1994, and (3) were non-Hispanic white or non-Hispanic black. These selection criteria resulted in an analytic sample of 8,949 students.[2] Thus, our study of black-white differences in college attendance is an analysis of black and white high school graduates who were in the eighth grade in 1988.

### *Variables and Analytical Strategy*

Because our analytical strategy is closely tied to our operationalization of college enrollment by college type, we discuss the two together. A discussion of explanatory variables follows. Our strategy for investigating whether the net black advantage in college enrollment is real involves several steps. First, from the 1994 panel data we create four dichotomous dependent variables that indicate the type of college that respondents attended. These variables reflect our conceptualization of college type beyond the traditional two-year/four-year dichotomy by considering the HBCU/non-HBCU distinction as well as college selectivity. We include college selectivity in our investigation to determine whether blacks' net advantage in college enrollment extends to selective colleges. For our study, we operationalize college enrollment as attendance alternatively at: (1) any college, (2) a four-year college, (3) a four-year non-HBCU, or (4) a selective four-year college.[3] Each variable takes the value of 1 if the respondent attended the specific type of college considered and takes the value of 0 if the respondent did not attend college. Note that we intend these outcome measures to be sequentially nested and not mutually exclusive.[4]

[2] Some of the 15,650 lost cases are due to our sample selection criteria, while others are due to attrition. Specifically, 229 cases had missing data on race, 5,038 respondents belong to racial groups other than those considered here, 9,119 cases were lost to attrition between the base year and third follow-up, 889 cases were omitted because respondents were not high school graduates, and 375 cases had no information on the dependent variable. Blacks are 11.7 percent and whites represent 88.3 percent of the 375 observations with no information on college enrollment status. We handle the problem of attrition and nonresponse by weighting all analyses. Our use of the third follow-up panel weight adjusts for attrition and permits us to conduct longitudinal analyses of the educational outcomes in 1994 of 1988 eighth graders (National Center for Education Statistics 1996b:5–2). For observations with missing data on independent variables, we imputed missing values from other, nonmissing predictor variables (Little and Rubin 1987). At most, respondents had three of the ten independent variables imputed. However, the majority of cases (66.7 percent) required no imputation at all, 25.9 percent required only one imputed variable, 7.0 percent required two imputed variables, and .5 percent required three imputed variables.

[3] The dependent variable that measures enrollment in "any college" refers to any postsecondary education institution, which includes two-year and four-year colleges. We define selective colleges as those public and private colleges designated as tier-1 national colleges and universities in *America's Best Colleges* (U.S. News and World Report 1993). The tier-1 designation differentiates among colleges in ways that are consistent with a different and often-used measure of college selectivity—average SAT score of incoming freshmen. The average SAT score of the tier-1 colleges represented in our sample is 1,192.6 compared with 972.6 for colleges designated as tier 2 through tier 4.

[4] That is, the comparison category for each outcome variable is always "No college attendance." Therefore, the subsample size varies with each outcome variable, as shown later in Table 5.

They represent various operationalizations of college enrollment in which an ever more strict definition of college is applied.

The second step of our strategy is to estimate logistic regression models to assess net racial differences in college enrollment using the four dependent variables—enrollment in any postsecondary institution, in four-year colleges, in four-year non-HBCUs, and in selective four-year colleges. Because those who did not attend college serve as the reference group in all models ($Y = 0$), our binary logit models are essentially parts of multinomial logit models that pertain to the contrast between attending a particular type of college and attending no college.[5] For each outcome variable, we present two models. Model A is an additive model that controls for gender, socioeconomic background, and academic characteristics. Model B is an interactive model in which we explore interactions between race and gender and between race and socioeconomic background. Last, because NELS is not a survey based on a simple random sample, we use statistical methods appropriate to its complex survey design.[6]

Our analytical strategy has three main advantages. First, because we distinguish HBCUs from other four-year colleges, we directly test whether the net black advantage is due to blacks' enrollment in HBCUs. Second, our use of successively stringent definitions of college enrollment checks the robustness of our results. Third, the interactive model specification allows us to examine racial differences in college enrollment by gender and at different levels of socioeconomic background (Portes and Wilson 1976).

All explanatory variables were measured prior to 1994. Race, measured in 1988, equals 1 for non-Hispanic blacks and 0 for non-Hispanic whites. We use six variables to measure different dimensions of students' socioeconomic background, all of which were measured in 1988. The first is the socioeconomic status (SES) of their parents. NELS provides a composite SES variable comprised of standardized measures of parents' education, parents' occupation, and family income. This variable is standardized to have a mean of 0 and standard deviation of 1 for the entire NELS sample. The second is family composition, which is a categorical variable that measures whether respondents live in families comprised of (1) two parents, (2) one parent, or (3) other relatives or nonrelatives. The third socioeconomic background variable is number of siblings, indicating the extent to which respondents share family resources for educational achievement (Blake 1989). We intend the other three background variables to capture students' school environments when they were in the eighth grade. School type indicates whether the school attended by NELS students was public or private. We also consider whether the school was located in an urban, suburban, or rural area, and include the school's regional location.

To measure academic performance we combine the results of two standardized tests administered by Educational Testing Service in 1992, when most NELS respondents were in the 12th grade. Our variable is the average of standardized scores on math and reading tests, which yields a continuous measure of academic performance. We also include a measure of educational expectations. These were ascertained in 1992 with the following question: "As things stand now, how far in school do you think you will get?" NELS respondents were asked to choose among 10 levels of education, ranging from less than high school graduation to a professional/graduate degree. We recode this categorical variable into a dummy variable, which equals 1 if respondents expected to attain at least a bachelor's degree and 0 if otherwise.

[5] In previous versions of this paper, we estimated multinomial logit models. The results are available on request.

[6] Specifically, we use the collection of *survey* commands in Stata to explicitly model the amount of stratification and clustering in the data. The *survey* commands use Taylor-series linearization methods to produce correct estimates of variance for complex survey data. Consequently, the degrees of freedom are calculated as follows:

d.f. = Number of clusters
– Number of strata
– Number of predictor variables + 1.
(StataCorp 2001)

**Table 1. Percentage Distribution and College Enrollment Rates in Any College for Blacks and Whites: National Education Longitudinal Survey, 1988 to 1994**

| Independent Variable | Percentage | | College Enrollment Rates | |
|---|---|---|---|---|
| | Blacks | Whites | Blacks | Whites |
| Total sample | 14.4 | 85.6 | 61.4 | 72.3 |
| *Gender* | | | | |
| Male | 47.3 | 50.3 | 53.6 | 69.2 |
| Female | 52.7 | 49.7 | 68.4 | 75.5 |
| *Socioeconomic Background* | | | | |
| 1st quintile (lowest) | 28.5 | 9.5 | 53.0 | 41.2 |
| 2nd quintile | 22.3 | 17.1 | 58.9 | 59.4 |
| 3rd quintile | 16.6 | 20.3 | 66.8 | 69.4 |
| 4th quintile | 14.5 | 21.6 | 67.0 | 82.8 |
| 5th quintile (highest) | 7.0 | 19.4 | 92.2 | 94.9 |
| Missing | 11.2 | 12.1 | 53.2 | 65.1 |
| *Family Structure* | | | | |
| Two-parent family | 53.3 | 83.8 | 66.6 | 74.3 |
| Single-parent family | 35.2 | 13.9 | 61.2 | 64.1 |
| Other family structure | 10.9 | 1.4 | 38.8 | 45.8 |
| Missing | .7 | 1.0 | 24.1 | 59.0 |
| *Number of Siblings* | | | | |
| 0 | 11.1 | 6.4 | 56.1 | 75.6 |
| 1 to 2 | 40.3 | 64.3 | 69.0 | 75.9 |
| 3 to 4 | 29.3 | 21.0 | 54.6 | 66.1 |
| 5 to 6 | 18.3 | 8.0 | 58.4 | 57.9 |
| Missing | 1.1 | .3 | 64.7 | 61.0 |
| *School Type* | | | | |
| Public | 92.9 | 86.3 | 59.2 | 69.9 |
| Private | 7.1 | 13.7 | 90.2 | 87.9 |
| *Urbanicity* | | | | |
| Urban | 49.6 | 18.6 | 65.6 | 76.2 |
| Suburban | 27.6 | 47.6 | 61.9 | 75.9 |
| Rural | 22.9 | 33.8 | 51.7 | 65.3 |
| *Region* | | | | |
| South | 65.6 | 30.5 | 57.1 | 71.3 |
| North central | 12.7 | 31.3 | 65.5 | 69.2 |
| Northeast | 16.1 | 21.7 | 74.1 | 77.9 |
| West | 5.6 | 16.5 | 65.5 | 72.9 |
| *Standardized Test Score* | | | | |
| 1st quintile (lowest) | 25.3 | 10.2 | 48.9 | 41.0 |
| 2nd quintile | 19.0 | 14.2 | 62.9 | 58.6 |
| 3rd quintile | 14.7 | 17.3 | 73.4 | 71.9 |
| 4th quintile | 10.3 | 19.4 | 69.2 | 86.8 |
| 5th quintile (highest) | 4.0 | 18.5 | 96.3 | 94.6 |
| Missing | 26.7 | 20.5 | 57.3 | 64.0 |
| *Expectation for Bachelor's Degree* | | | | |
| No | 15.1 | 14.5 | 22.0 | 29.5 |
| Yes | 67.8 | 74.6 | 75.0 | 85.2 |
| Missing | 17.1 | 10.9 | 42.2 | 41.0 |

*Note*: Data are weighted; unweighted N = 8,949.

## RESULTS

### *Descriptive Findings*

In Table 1, we present, by race, the percentage distributions of our explanatory variables and associated rates of enrollment in any college. Two preliminary results emerge in this table. First, we observe that socioeconomic background generally has a positive effect on college entry, and its distribution favors whites over blacks. One peculiar thing to note, however, is that college enrollment increases monotonically with socioeconomic background among whites, but not among blacks. Specifically, blacks in the two middle socioeconomic background strata have similar college attendance rates (66.8 percent and 67.0 percent).[7] It appears that almost all blacks and whites from the highest socioeconomic background stratum attend college, whereas more blacks than whites from the very lowest socioeconomic stratum attend college.

Second, we find that blacks fall behind whites in academic performance. While whites are relatively evenly distributed across standardized test score strata, blacks are concentrated in the lower performance quintiles. Academic performance has a sharp positive relationship with college enrollment for both blacks and whites. Noteworthy are racial differences in college entry within each academic performance stratum. With only one exception, blacks experience higher college enrollment rates within each level of academic performance.

Given our interest in the role of HBCUs in producing the net black advantage in college attendance, we are interested in whether black students who attend HBCUs differ from their black peers who attend four-year non-HBCUs. More specifically, do HBCUs attract students who more closely resemble those who attend two-year colleges or those who attend other four-year colleges? To answer this question, we present the percentage distributions of blacks by college type in Table 2. We find that black students at HBCUs have, on average, socioeconomic backgrounds that are slightly higher than those of their black counterparts at other four-year colleges. Furthermore, blacks at HBCUs have academic profiles that are more similar to black students at other four-year colleges than to black students at two-year colleges.

The first line of Table 3 reports the racial difference in the percentage of black and white high school graduates who are enrolled in any college. Analogous figures are given in the next three lines under alternative operationalizations of college enrollment.[8] Consistent with earlier findings, the percentage of high school graduates who enroll in college is smaller among blacks than among whites. Almost three quarters (72.3 percent) of whites attend some type of college after high school, compared with only 61.4 percent of black graduates. Thus, the *total* racial gap in college entry is 10.9 percentage points. In the odds-ratio scale, this difference means that blacks are only 60.8 percent as likely as whites to enter college.[9] We note that blacks' disadvantage in college enrollment increases with the use of more stringent definitions of college attendance. The black-white odds ratio of college enrollment falls to .570, .331, and .280 when enrollment is restricted to four-year colleges, four-year non-HBCUs, and selective four-year colleges, respectively. The pattern of decreasing raw (unadjusted) odds ratios in Table 3 underscores our research strategy: If we find a net black advantage in a multivariate analysis, we are interested in whether the

[7] Part of this anomaly, of course, is due to sampling variation. For this reason, one should resort to multivariate analysis for interpretations.

[8] Strictly speaking, the percentages in lines 2 through 4 are not enrollment rates, because they are based on subsamples excluding those who attend other colleges. We apply the restriction to obtain racial difference measures that are comparable to multivariate analyses reported later. Changing the bases to the whole sample does not change the main finding in Table 3.

[9] Odds-ratio is defined as:

$$OR = \frac{\Pr(Y=1|Black)/\Pr(Y=0|Black)}{\Pr(Y=1|White)/\Pr(Y=0|White)},$$

where $\Pr(Y=1|Black)$ and $\Pr(Y=1|White)$ represent the race-specific probabilities of college attendance, and $\Pr(Y=0|Black)$ and $\Pr(Y=0|White)$ represent the race-specific probabilities of nonattendance.

**Table 2. Percentage Distribution for Blacks by College Type: National Education Longitudinal Survey, 1988 to 1994**

| | Percentage | | | |
|---|---|---|---|---|
| Independent Variable | No College | 2-Year | HBCU | Other 4-Year |
| Total sample | 38.6 | 26.1 | 14.8 | 20.5 |
| *Gender* | | | | |
| Male | 46.4 | 21.4 | 15.1 | 17.1 |
| Female | 31.7 | 30.3 | 14.6 | 23.5 |
| *Socioeconomic Background* | | | | |
| 1st quintile (lowest) | 47.0 | 30.5 | 8.9 | 13.6 |
| 2nd quintile | 41.1 | 26.5 | 11.0 | 21.4 |
| 3rd quintile | 33.2 | 22.1 | 19.3 | 25.5 |
| 4th quintile | 33.0 | 16.9 | 21.6 | 28.4 |
| 5th quintile (highest) | 7.8 | 29.1 | 32.1 | 31.0 |
| Missing | 46.8 | 29.9 | 11.3 | 12.0 |
| *Family Structure* | | | | |
| Two-parent family | 33.5 | 25.1 | 18.2 | 23.2 |
| Single-parent family | 38.8 | 28.4 | 12.6 | 20.2 |
| Other family structure | 61.2 | 23.7 | 6.4 | 8.7 |
| Missing | 75.9 | 16.8 | .0 | 7.3 |
| *Number of Siblings* | | | | |
| 0 | 43.9 | 16.7 | 16.8 | 22.7 |
| 1 to 2 | 31.0 | 22.7 | 19.5 | 26.8 |
| 3 to 4 | 45.5 | 27.3 | 11.9 | 15.3 |
| 5 to 6 | 41.6 | 36.7 | 8.1 | 13.6 |
| Missing | 35.3 | 35.5 | 11.7 | 17.6 |
| *School Type* | | | | |
| Public | 40.8 | 27.0 | 13.0 | 19.2 |
| Private | 9.8 | 13.8 | 38.6 | 37.8 |
| *Urbanicity* | | | | |
| Urban | 34.4 | 30.2 | 13.7 | 21.6 |
| Suburban | 38.2 | 25.2 | 17.3 | 19.3 |
| Rural | 48.3 | 18.2 | 14.1 | 19.3 |
| *Region* | | | | |
| South | 42.9 | 22.4 | 17.7 | 16.9 |
| North central | 34.5 | 28.6 | 9.3 | 27.6 |
| Northeast | 25.9 | 34.1 | 11.2 | 28.9 |
| West | 34.5 | 40.1 | 4.0 | 21.4 |
| *Standardized Test Score* | | | | |
| 1st quintile (lowest) | 51.1 | 27.5 | 12.2 | 9.2 |
| 2nd quintile | 37.1 | 30.9 | 14.2 | 17.8 |
| 3rd quintile | 26.6 | 26.0 | 19.6 | 27.7 |
| 4th quintile | 30.8 | 15.3 | 14.2 | 39.6 |
| 5th quintile (highest) | 3.7 | 4.9 | 30.9 | 60.4 |
| Missing | 42.7 | 28.6 | 13.0 | 15.8 |
| *Expectation for Bachelor's Degree* | | | | |
| No | 78.0 | 18.7 | 2.1 | 1.3 |
| Yes | 25.0 | 27.1 | 19.5 | 28.4 |
| Missing | 57.8 | 28.6 | 7.5 | 6.1 |

*Note*: Data are weighted; unweighted N = 1,124.

**Table 3. Enrollment Rates by Race and College Type: National Education Longitudinal Survey, 1988 to 1994**

| College Type | Percentage | | Black/White Odds Ratio | (S.E.) |
|---|---|---|---|---|
| | Blacks | Whites | | |
| Any college | 61.4 | 72.3 | .608*** | (.068) |
| Four-year college | 47.7 | 61.6 | .570*** | (.067) |
| Four-year non-HBCU | 34.6 | 61.5 | .331*** | (.041) |
| Selective four-year college | 5.0 | 15.9 | .280*** | (.069) |

*Note*: Standard errors are in parentheses. Data are weighted; N = 8,949, including 1,124 blacks and 7,825 whites.

***$p \leq .001$ (two-tailed tests for the null hypothesis that odds ratio = 1)

finding holds true after we progressively tighten the operationalization of college enrollment.

### *Multivariate Findings*

In Table 4, we present the odds ratios from the binary logistic regression models that predict enrollment in any college versus no college attendance. We show only two models in this table, but the black-white odds ratios can be compared to the raw (unadjusted) odds ratio displayed in the first line of Table 3, which serves as the baseline. We have already observed that, without controls, blacks' odds of attending any college are 39 percent lower than those for whites. When we consider socioeconomic background and academic performance in Model A, blacks are shown to be more likely than similar whites to enroll in college. Blacks' *net* odds of entering college are estimated to be about 1.5 times those of whites. Thus, it appears that our results confirm a finding from earlier studies that there is a net black advantage in college entry.[10]

In Model B, we consider interactions between race and gender and between race and socioeconomic background. We do not find a significant interaction between race and gender.[11] The significant interaction between race and socioeconomic background indicates that blacks' chances of attending college respond less sharply to their socioeconomic background than do those of whites. However, assessment of a racial gap is not straightforward, because it depends on socioeconomic status. Setting other variables to their sample means, we find that blacks' predicted probability of attending college is greater than whites' at lower levels of socioeconomic background but essentially converges to that of whites' at higher levels (see Figure 1). Stated differently, a net black advantage exists only among students from the lower half of the socioeconomic background scale.

Next, we conduct stronger tests of the net black advantage using increasingly stringent definitions of college attendance. Table 5 displays odds ratios that pertain to racial differences from the same logit models as Models A and B of Table 4 but with the dependent variable alternately replaced by enrollment in four-year colleges, in four-year non-HBCUs, and in selective colleges.[12]

In the first panel, we reproduce the summary coefficients reported in Table 4. In the second panel, we present the net black-white ratios in the odds of attending four-year colleges versus no college attendance. The results are qualitatively the same but quantita-

[10] In analyses not shown, we confirm that our finding of a net black advantage is not dependent on the exclusion of high school dropouts from the sample.

[11] When we do not condition college attendance on high school graduation, we observe a significant interaction between race and gender, indicating that black women are more likely than black men and whites of either sex to attend college (analyses not shown).

[12] Tables that display all coefficients are available from the authors.

**Table 4. Odds Ratios for Selected Logit Models Predicting Enrollment in Any College: National Education Longitudinal Survey, 1988 to 1994**

| Independent Variable | Model A | Model B |
|---|---|---|
| Black | 1.483** | 1.038 |
| | (.138) | (.180) |
| Female | 1.445*** | 1.338*** |
| | (.084) | (.085) |
| Socioeconomic background | 2.121*** | 2.383*** |
| | (.064) | (.064) |
| Single-parent family | .914 | .892 |
| | (.113) | (.111) |
| Other family structure | .454 | .464* |
| | (.427) | (.382) |
| Number of siblings | .930* | .919** |
| | (.029) | (.027) |
| Public school | .542*** | .551*** |
| | (.157) | (.157) |
| Suburban school | 1.083 | 1.074 |
| | (.129) | (.126) |
| Rural school | 1.070 | 1.066 |
| | (.125) | (.122) |
| North central region | .908 | .920 |
| | (.107) | (.106) |
| Northeast region | 1.233 | 1.241 |
| | (.120) | (.117) |
| West region | .869 | .862 |
| | (.127) | (.127) |
| Standardized test score | 1.076*** | 1.076*** |
| | (.006) | (.006) |
| Expectation for bachelor's degree | 4.494*** | 4.317*** |
| | (.113) | (.102) |
| Black × Female | — | 1.466 |
| | | (.244) |
| Black × Socioeconomic background | — | .581*** |
| | | (.162) |
| Constant | .029*** | .031*** |
| | (.334) | (.336) |
| Adjusted Wald F-statistic | 83.21 | 75.12 |
| Degrees of freedom | 972 | 970 |

*Note*: Standard errors are in parentheses. Data are weighted; unweighted N = 8,949. Reference categories are: two-parent family for family structure, private school for school type, urban school for urbanicity, South for region

*$p \leq .05$ **$p \leq .01$ ***$p \leq .001$ (two-tailed tests for the null hypothesis that odds ratio = 1)

**Table 5. Odds Ratios for Selected Logit Models Predicting College Enrollment by College Type: National Education Longitudinal Survey, 1988 to 1994**

| College Type | Model A | Model B |
|---|---|---|
| *Any College (N = 8,949)* | | |
| Black | 1.483** | 1.038 |
| | (.138) | (.180) |
| Black × Female | — | 1.466 |
| | | (.244) |
| Black × Socioeconomic background | — | .581*** |
| | | (.162) |
| *Four-Year College (N = 6,558)* | | |
| Black | 2.858*** | 2.312*** |
| | (.153) | (.216) |
| Black × Female | — | 1.141 |
| | | (.320) |
| Black × Socioeconomic background | — | .539*** |
| | | (.188) |
| *Four-Year Non-HBCU (N = 6,373)* | | |
| Black | 1.673** | 1.203 |
| | (.162) | (.223) |
| Black × Female | — | 1.362 |
| | | (.349) |
| Black × Socioeconomic background | — | .485*** |
| | | (.226) |
| *Selective Four-Year College (N =3,026)* | | |
| Black | 3.742** | 2.176 |
| | (.441) | (.726) |
| Black × Female | — | 2.372 |
| | | (.949) |
| Black × Socioeconomic background | — | 1.060 |
| | | (.708) |

*Note*: Standard errors are in parentheses. Data are weighted.

*$p \leq .05$ **$p \leq .01$ ***$p \leq .001$ (two-tailed tests for the null hypothesis that odds ratio =1)

tively more pronounced. We observed in Table 3 that blacks' unadjusted disadvantage is slightly larger for four-year college enrollment than for any college enrollment. Yet, surprisingly, the overall net black advantage is larger for four-year college enrollment than for any college enrollment (2.858 versus 1.483, Model A). This is because our explanatory variables, such as socioeconomic background and academic performance, hold more explanatory power for four-year college enrollment than for any college enrollment (results not shown). As in the case for

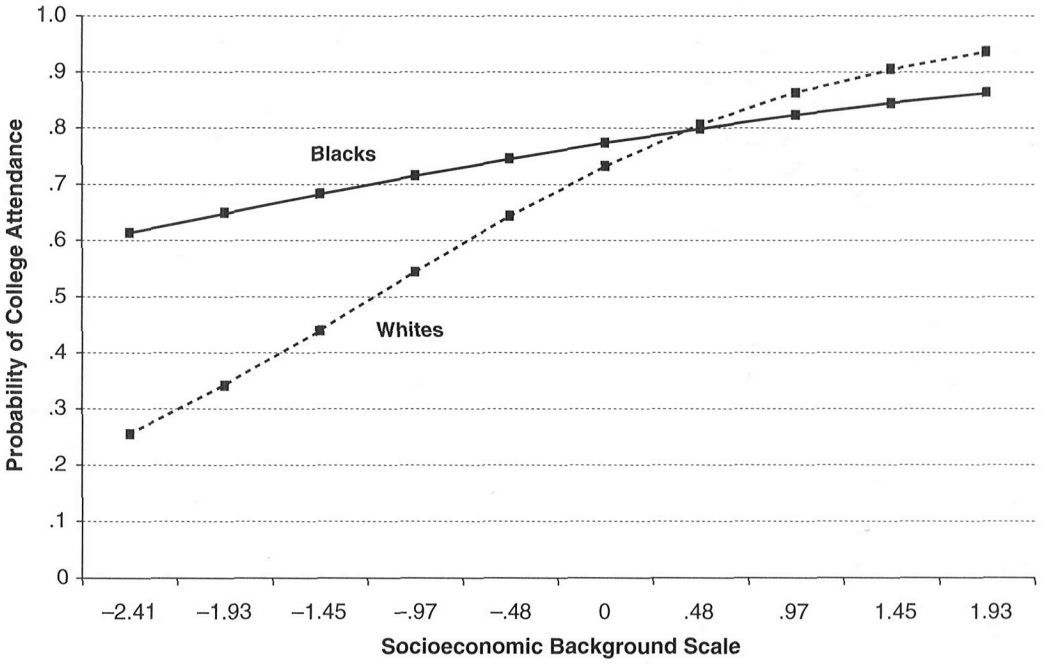


**Figure 1. Probability of Attending any College, by Race and Socioeconomic Background**

enrollment in any college, there is a significant interaction between race and socioeconomic background, but not between race and gender (Model B).

The third panel represents our first attempt to test the hypothesis that blacks' attendance at HBCUs produces the appearance of having a net advantage over whites in college enrollment. To test this hypothesis, we reestimate the black-white odds ratio in college attendance after we exclude HBCUs from the operationalization of four-year colleges. As expected, the black-white odds ratio declines from the second panel to the third panel (from 2.858 to 1.673, Model A). This reduction in blacks' net advantage between the second and third panels is due to the fact that a sizable proportion of blacks, but only a few whites, are enrolled in HBCUs. Thus, blacks' attendance at HBCUs contributes to their net advantage over whites, but contrary to the expectation in the literature, the option to attend HBCUs does not fully explain blacks' net advantage over whites in college enrollment. When we consider only enrollment in four-year non-HBCUs, we still find that black high school graduates are overall more likely than their white counterparts to attend college. We also find a significant interaction between race and socioeconomic background for enrollment in four-year non-HBCUs (Model B). Again, this interaction effect indicates that the net black advantage exists only for students with low socioeconomic background.[13]

We conduct another test of the net black advantage by examining enrollment in selective four-year colleges versus no college attendance. Although blacks maintain an advantage over whites with respect to attending four-year colleges, they may, nevertheless, be concentrated in *less* selective

[13] Inclusion of this interaction term reduces the race coefficient to nonsignificance in the third panel. However, the nonsignificance only indicates that there is no racial difference at the mean level of socioeconomic status. At low levels of socioeconomic status we do find a statistically significant net black advantage. To accomplish this, we create a new variable, SES′, which equals SES + 2. The mean value of SES′ is approximately two standard deviations below the sample mean of the original SES variable. By replacing the original SES variable with SES′ in regression models, we observe a statistically significant net black advantage (results not shown but available on request).

colleges. We showed in Table 3 that the raw racial differences are such that blacks' disadvantage relative to whites is the most severe for enrollment in selective four-year colleges. However, contrary to what one might expect from the raw odds ratios in Table 3, we find that restricting our attention to selective colleges sharply increases the net black advantage (with the estimated odds ratio increasing from 1.673 to 3.742). That is, controlling for relevant background factors, black high school graduates are 3.7 times more likely than whites to attend selective colleges. Again, this is due to the stronger effects of family background and academic performance on enrollment in selective colleges than on enrollment in any college (results not shown). Furthermore, this finding from the additive model (Model A) adequately summarizes the racial gap in attending selective colleges because the interaction terms introduced in Model B are statistically nonsignificant.

## DISCUSSION AND CONCLUSIONS

We focus on the question of whether the often-reported net black advantage in college enrollment is real or is the result of an aggregation error involving race, college enrollment, and college type. Our analysis yields two main findings. First, if we take a naive approach and are forced to make an overall comparison between blacks and whites (e.g., Model A), our results indicate that the net black advantage is real: Not only are black high school graduates more likely than their white counterparts to enroll in *any* college following high school, they are also more likely than whites to enroll in four-year colleges, four-year non-HBCUs, and selective four-year colleges. Second, we find that the net black advantage cannot be fully understood apart from socioeconomic class in the sense that the net black advantage is mostly limited to students from low levels of family socioeconomic background (Model B).

Although the two empirical findings are unambiguous, their theoretical interpretations are less straightforward. Like most other social phenomena, the net black advantage in college attendance at low levels of family socioeconomic background does not have a single, simplistic explanation. We suggest three possibilities.

First, in accord with the economic reasoning that youth's employment opportunities reduce college enrollment (Manski and Wise 1983), more blacks than whites are likely to pursue college because of the lack of employment opportunities in the labor market. Unemployment rates among black youth have consistently been more than twice those for white youth (U.S. Census Bureau 2000, table 674). Whereas a low unemployment rate among white youth means that they are relatively free to decide between attending college and entering the labor market after high school, blacks, particularly those from low and middle socioeconomic backgrounds, often face difficulties securing employment upon graduating from high school. Second, affirmative action policies implemented at institutions of higher education operate effectively to recruit blacks and other disadvantaged minorities who come from the bottom half of the socioeconomic background scale. Finally, larger financial aid awards to blacks than whites, often a component of affirmative action programs (Kane and Spizman 1994), facilitate blacks' enrollment by reducing the cost of higher education.

Whatever the sources of the net black advantage, what are its implications for racial equality in access to higher education? To answer this question, we need to understand the social processes that underlie another paradox that is apparent in our study: Although blacks enjoy a net advantage over whites of similar academic performance at low levels of family background, blacks nonetheless are much less likely than whites to enroll in college, particularly selective colleges, in raw percentages. Thus, the net black advantage has both positive and negative implications for racial equality in access to higher education.

If we were to interpret the net black advantage positively, we would treat it as an indicator of black educational progress specifically and of social progress generally. It shows that despite the many disadvantages that blacks face in the educational attainment process, black youth who successfully navigate high school are more likely than their white counterparts to enroll in college. Interpreted more broadly, the net black ad-

vantage indicates that blacks have been successful at placing social and legal pressure on the American system of postsecondary education to gain access to it at all levels, including selective colleges (Ballard 1973; Exum 1985; Gurin and Epps 1975; Karen 1991).

We might ask ourselves, however, whether this *net* black advantage should be thought of as progress when the advantage is, at its very core, conditional on controlling for racial disparities in family socioeconomic background and academic performance. After all, many studies, including our own, clearly show that racial disparities in the *precollege* experiences of black and white youth are responsible for blacks' overall lower rates of college attendance than whites' rates. That is, the persistent *total* gap favoring whites is indicative of blacks' continued disadvantage in exactly the factors that predict college attendance: Blacks are concentrated in the lowest socioeconomic strata and academic performance quintiles, are concentrated in public and Southern schools, and have more siblings than whites. That these resource characteristics favor whites produces the *total* black-white gap in college attendance. In other words, the main obstacles that block black youth from attending college exist *prior to submitting a college application*. Hence, the reduction and eventual elimination of the racial gap in access to higher education requires the improvement of the socioeconomic conditions and academic credentials of blacks.

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