Race and Class Intersection in the Access to College Destinations:

The Influence of Race- and Need-sensitive Policies

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Abstract

While race and class barriers throughout the educational pipeline are well depicted in the stratification literature, very little attention has been paid to the intersection between them. This paper not only provides evidence on the intersection of class and race in college attendance patterns, it also considers the societal and organizational mechanisms that produce this conditional relationship by shaping the access of rich and poor blacks, Hispanics, Asians, and whites to selective and nonselective institutions. By means of the NELS:88 survey, the college destinations of all high school graduates in 1992 are arrayed by institutional type and selectivity: 2-year open-door; 4-year non-competitive; 4-year competitive and 4-year very competitive institutions, as well as non-enrollment. The results show that although, Hispanics and blacks on one hand, and poor youth on the other, were less likely to enroll in 4-year very competitive colleges, economically disadvantaged Hispanics, blacks, as well as Asians, were more likely than their white counterparts to enroll in these colleges, whereas the situation is reverse among affluent students. The concluding section considers the role played by affirmative action (race-sensitive) and financial aid (need-sensitive) in shaping the observed race-class intersectionality, creating unique educational opportunities for students hailing from different race-class groups.

Introduction

  While race and class barriers throughout the educational pipeline are well depicted in the stratification literature, very little attention has been paid to the intersection between them. Most research and policy initiatives split this bundle of characteristics and address either race/ethnic or socioeconomic disparities in postsecondary enrollment and college destination. The vast majority of research on group disparities in academic performance aims to "disentangle" the race and class effects treating them as distinct and unrelated systems of stratification (similar balkanization characterizes the general stratification scholarship (Reskin, 2003)). The merit in this practice is obvious but at the same time it ignores the possibility that this intersection generates specific group opportunities that are invisible within the traditional approach of simply including race in research on class or including class in studies of race. Consequently, we know little about the conditional impact, not the additive, of race and class in shaping access to college destinations of varying selectivity. Explicitly, beyond the obvious disparities in college enrollment among minority and non-minority or wealthy and disadvantaged students, the question arises as to whether and how the influence of class on college attendance and postsecondary destinations is conditional on race and whether the influence of race is conditional on class. Disregarding such intersection may well disguise important ethno-racial and class disparities in the access to different college destinations.

  Earlier research gives us some indirect clues to this intersection, but none directly explored it or assessed whether and how it generates distinct educational opportunities for race-class groups. Moreover, the research is silent about the mechanisms and conditions

through which race and class intersect in the higher education system. I follow Reskin (2003) call to look for "how" explanations—*how* variation is produced in ascriptive groups' access to opportunities—by suggesting a mechanism-based theory, i.e. exploring the societal and organizational mechanisms that link the ascribed characteristics of race and class to the outcome of varying desirability, namely access to college destination of increasing selectivity. Accordingly, this paper not only provides evidence on the intersection of class and race in college attendance patterns, it also explores the capacity of two policy initiatives, namely race- and need-sensitive admission practices, to account for this conditional relationship by shaping the access of rich and poor blacks, Hispanics, Asians, and whites to selective and nonselective institutions.

By means of the NELS:88 survey, the college destinations of high school graduates in 1992 are arrayed by institutional type and selectivity: 2-year open-door; 4-year non-competitive; 4-year competitive and 4-year very competitive institutions, as well as non-enrollment. This approach avoids a potential selection bias by analyzing the postsecondary experiences of *all* high school graduates, including youth who enroll in vocational training and open-door institutions, or who do not pursue postsecondary schooling at all. The results provide a full depiction of the intersection of race and class throughout the entire postsecondary spectrum by illuminating how this intersection directs students to different postsecondary trajectories. The concluding section considers the role played by affirmative action (race-sensitive) and financial aid (need-sensitive) in shaping the observed race-class intersectionality, creating unique educational opportunities for students hailing from different race-class groups.

Race and Class Differences in Postsecondary Schooling Attendance Patterns

Despite prodigious policy efforts to broaden educational opportunity, marked and persistent racial and ethnic differences endure in educational attainment (Mare, 1995).[1] Racial and ethnic gaps in college enrollment are considerable, as 65 percent of Asians, 49 percent of whites, 36 percent of blacks, and 28 percent of Hispanics, aged 18 to 19, were enrolled in a postsecondary institution (CPS, 2000). These striking disparities in college enrollment rates conceal wide variety in the college destinations of Hispanics, blacks, Asians, and whites. For example, in 2000, 75 percent of white undergraduate students aged 18-24 attended a 4-year college, compared with 74 percent of Asian students, 70 percent of blacks, and 60 percent of Hispanic students (CPS, 2000). Moreover, within the 4-year institutions tier persistent ethno-racial inequality in college selectivity is readily evident: Hispanic and black youth remain under-represented in selective and highly selective institutions (Persell et al., 1992; Davies and Guppy, 1997; Hearn 1984; 1990; 1991; Bowen and Bok, 1998)

Likewise, economic status is amply shown to be a key determinant not only of college enrollment but also of college destination (Karen, 2002; Karabel and Astin, 1975; Hearn 1984; 1990; 1991; Kingston and Lewis, 1990; Davies and Guppy, 1997; Baker and Velez, 1996; Persell et al., 1992). For example, in 1996 only 14 percent of students from low-income families were enrolled in private, not-for-profit 4-year colleges, compared with 25 percent of high-income students. Conversely, 43 percent of low-income students were enrolled in public 2-year colleges compared to 34 percent of affluent students (NCES, 1999). Moreover, students from lower socioeconomic backgrounds are less likely to attend more selective colleges, regardless of ability (Karen, 2002; Hearn, 1991;

Davies and Guppy, 1997). Three percent of the students admitted to one of America's most-competitive colleges in 1995 were from families of modest social and economic backgrounds (Carnevale and Rose, 2003). Just Fully 74 percent of the students came from the top quarter of the nation's social and economic strata, well in excess of their portion of the population.

Observations on the intersection of race and class are few and usually only a byproduct of other research questions. For example, Alexander, Pallas and Holupka (1987) found racial and ethnic differences in college attendance within SES levels, even net of academic characteristics, as minorities showed higher attendance rates than whites, especially in the lower and middle SES levels. In a different article these authors argued that socioeconomic factors were less consequential for black enrollment in higher education than they were for either whites or Hispanics (Alexander, Holupka and Pallas, 1987). Moreover, evidence suggests that this interaction exists not only in enrollment but also in shaping college destinations of varying selectivity. Davies and Guppy (1997) reported that black students from low socioeconomic backgrounds were more likely to enter selective institutions than their non-black statistical counterparts. Indeed, Bowen and Bok (1998), analyzing students in 28 academically selective schools in the fall of 1989, report that the percentage of black matriculants from low-SES background was far higher than the corresponding percentage of white matriculants—14 percent versus only 2 percent. This finding was recently extended to Hispanics as well.[2]

These disparities are important because race and class are becoming more salient in the current debate about strategies aiming to diversify college campuses (Bowen and Bok, 1998; Kane 1998; Carnevale and Rose, 2003; Bowen and Rudenstine, 2003).

However, in sketching effective diversifying strategies it is essential to know whether and why minorities are less influenced by the weight of their economic disadvantages in the access to the most selective institutions in the country. But what is a more meaningful contribution for devising effective policy recommendations is the understanding of *how* race and class jointly influence college enrollment and postsecondary destinations. In the following section, I suggest a conceptual framework within which race and class intersectionality in higher education is embedded.

Conceptualizing Race and Class Intersectionality in Postsecondary Education

Applying intersectional approach to the question at hand maintains that race and class should not be view as independent analytic categories that can be simply added together but rather that race and class fuse to create unique experiences and opportunities for all groups (Browne and Misra, 2003; Weber, 2001; King, 1988). However, although several authors have noted the importance of addressing the intersections between major status groupings (O'Connor, 2001; Cotter et al., 1999; Cookson and Persell, 1991; King, 1988; Collins, 1999), the theoretical framework motivating this approach is not clearly specified (Grusky, 2001). Feminist theory is in the forefront of the theorizing and conceptualization of issues of intersectionality, specifically that of race and gender (Browne and Misra, 2003).[3] One of the major tenets of this theory is that race and gender are socially constructed categories that contain inherent power differences and are mutually constituted to produce and maintain social hierarchy (Collins 1999, Weber, 2001 Glenn, 1999; Browne and Misra, 2003). Accordingly, disadvantages of social hierarchies are compounded so that individuals who suffer from multiple disadvantages

because they occupy the lowest position on two (or more) social positions—such as being black and poor—experience the most disadvantage of any group (Ransford, 1980; King, 1988; Pettigrew, 1981). Corroborating this assertion are Cookson and Persell (1991) findings about the experiences of black students in elite prep schools, suggesting that poor back students are doubly marginalized, being subjected to economic and social disempowerment that are difficult to overcome.

Thus, the underlying theme of intersectionality research is the premise of 'double disadvantages' or 'multiple disadvantages' which clearly has merit in understanding ascriptive groups' access to desirable opportunities. Extending this premise to the question at hand one can argue that poor blacks and Hispanics are at the bottom of the hierarchy, below poor whites and Asians, in the access to postsecondary institutions and specifically to attending the most selective schools. However, such prediction contradicts prior findings, albeit sporadic, suggesting that poor blacks and Hispanics enjoy an advantage over comparable whites, in access to the most selective institutions (Davies and Guppy, 1997). However, to devise a solid hypothesis concerning the nature and direction of race and class intersectionality in access to different college destinations it is critical to understand *how* such intersectionality is produced. In other words, if we wish to know whether the double disadvantage premise is applicable to the situation at hand we must first understand the societal and organizational mechanisms that generate ascriptive groups' access to educational opportunities.

This approach is embedded in recent voices in the stratification literature suggesting mechanism-based theories that specify the practices whose presence and implementation influence ascriptive inequality (Reskin, 2003; Browne and Misra, 2003).

Reskin (2003) calls to find social arrangements that link ascriptive group membership to opportunities and rewards. Browne and Misra (2003) in their recent review of "The intersection of gender and race in the labor market" argue that future research should develop explanations of why and how hierarchies of race and gender converge. Research should address the complex processes through which social categories influence economic fortunes and specify the conditions under which intersecrtions are exacerbated or naturalized. A good model should be able to illustrate the dynamic and interdependent matrices of privilege and disadvantage that effect outcomes across social locations.

I respond to this call by focusing on the policy context that regulates the access to higher education to suggest how it may perpetuate the intersection of race and class in the stratified postsecondary education system. Specifically, I argue that the juncture between Affirmative Action and Financial Aid policies produces the interplay between race and class. Description of both policies serves as a backdrop to developing a full account of how and why race and class come together to form diverse educational experiences and opportunities for all groups.

The Policy Context: Race-sensitive and Need-sensitive Policies

The large racial disparities in college destinations have undergirded the race-sensitive admission policies of selective institutions since the 1960s. During the last three decades important court rulings achieved milestones in the fight for equal access to higher education for minorities, and concurrently pressure on public colleges to become racially integrated reemerged (Bowen and Bok, 1998; Baker and Velez, 1996). The 2003 Supreme Court's Grutter v. Bollinger decision supports the use of student body *diversity*

as a justification for policies that employ race as a "plus" factor among many factors considered in selective admissions. [4] This decision joined the Supreme Court's ruling in *United States v. Fordice*, 505 U.S. 717 (1992) that state courts would be granted the power to redress policies and practices that limited the proportion of blacks in many educational institutions (Orfield, 1993) and the *Regents of the University of California v. Bakke*, 438 U.S. 265 (1978) judgment supporting policies that considered race and national origin in admission decisions. In practice, Affirmative Action (AA), which is need-blind, provides preferential admission to academically borderline Hispanic and black youth, giving them an advantage over whites and Asians. This state of affairs is schematically sketched in figure 1.

[Figure 1 about here]

On the other hand, to eliminate the tie between privilege and access to quality education, federal financial aid programs (FA), which are color-blind, aim to make college affordable for low-income students. Accordingly, as depicted in figure 2, the main beneficiaries of need-based FA are low-income students, while those of middle class have gained access to some resources, especially in recent years, and students from high-income families may qualify for merit-based scholarships.[5]

[Figure 2 about here]

Federal financial aid was at its peak in the 1970s but the real value of financial aid suffered a sharp decline in the early 1980s (The College Board, 2001), forcing institutions to spend more of their own resources on student aid. In the late 1980s financial aid started to rise again but the burden of supporting needy students shifted from the federal and state level to the institutions' level (Kane, 1999; Duffy and Goldberg,

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1998). I argue that this was the juncture where Affirmative Action (which is need-blind) and financial aid (which is color-blind) met. Not by coincidence did the development of financial aid offices in postsecondary institutions across the country parallel efforts to recruit minority students.[6] Duffy and Goldberg, who studied liberal arts colleges, argued that:

> Most of the colleges adopted formal programs to attract more minority students in the mid- to late 1960s. Although these programs initially focused on recruitment, the colleges soon realized that, without additional financial aid support, enhanced recruitment efforts were fruitless. Thus, during the late 1960s and early 1970s, the financial aid budgets at many of the colleges grew substantially to ensure that minority students who were admitted received whatever aid they needed. (1998:180)[7]

Duffy and Goldberg concluded that financial aid, especially in times of declining value of federal support, becomes an institutional tool to address institutional priorities of quality and diversity. Naturally, this process developed mainly among selective and highly selective institutions and to a lesser extent in non-selective ones. This is because non-selective and open door institutions admit almost all applicants so it is only the white institutions with selective admissions, many of which historically excluded minorities, that have had to respond to the demographic and social forces changing the contours of American society.   Furthermore, selective, but mostly highly selective, institutions can provide a better (aid) offering than non-selective 4- and 2-year colleges.

Since black and Hispanic youth are more likely to be economically disadvantaged than whites, a race-sensitive admission policy is ineffective if not accompanied by financial means. Therefore, minority students targeted by selective and highly selective institutions need a disproportionate amount of financial resources to make possible their enrollment. This is not because financial aid policy is race-conscious but because it is

used as *a recruitment tool to promote a race-conscious initiative*. Furthermore, competitive institutions operate in a zero-sum situation in terms of how many minorities and economically disadvantaged students they can accept and support, while maintaining class size and selectivity standards (Bowen and Bok, 1998). Consequently, selective and highly competitive colleges need to use their limited funds to achieve their (sometimes conflicting) institutional priorities of quality and diversity, and therefore may wish to attract and retain students who diversify their student body in more than one aspect. Bowen and Bok noted that:

> The academically competitive environment of these schools—both private and public—makes it unrealistic to expect them to serve large numbers of students who come from truly impoverished backgrounds; the fact that 14 percent of black matriculants at these schools come from families with limited education and low incomes is, in its way, remarkable. (1998:50)

Consequently, this makes access to selective schools more likely for disadvantaged minorities than for their poor white counterparts.[8]

There is evidence that black and Hispanic students are more likely than whites to receive financial aid (U.S Bureau of Census, 2002; Massey et.al., 2003).[9] Studies also provide evidence of the sensitivity of a minority's college enrollment and college choice to financial aid (Kane, 1999; Jackson, 1990; St. John and Noell, 1989; see Heller, 1997 for review). Assessing the effect of a new financial aid policy adopted by one selective institution in the Northeast, Linsenmeier, et al. (2001) report that replacing the entire loan portion of the financial aid package with grants had no significant effect on the enrollment of low-income students, but was associated with an increase in the enrollment of low-income *minority* students to that institution. This supports the claim that

institutions use financial aid to facilitate the admission of needy minorities — a tool with which an institution builds a diversified class (Duffy and Goldberg, 1998).

Figure 3 summarizes these arguments by illustrating how the two policy domains overlap, and more practically, who benefit from both. The top panel portrays my argument regarding the juncture between these two policies in selective and highly selective institutions while the bottom panel describes the situation in 4-year non-selective colleges. In institutions with selective admission, white students are subject only to the guidelines of FA, while black and Hispanic students are subject to impacts of both FA and AA, depending on their economic background. Low-income minorities are the beneficiaries of both policies, especially in institutions that wish to diversify their student body and have the financial resources for it. I therefore argue that the most needy minorities are able to attend wealthy (and expensive) selective and highly selective schools not only because they are targeted by these institutions but also because they get a financial assistance to do so, a support less likely be present in non-selective 4- and 2-year colleges.

[Figure 3 about here]

Middle and High-income black and Hispanic high school graduates enjoy preferential admission because of AA but theoretically should receive financial resources similar to those of their white counterparts. However, as the foregoing discussion intimates, selective institutions may alter their college choice by offering generous financial aid. This line of reasoning (shown in the figure by the smaller font of FA) implies that well-off minorities may get more financial support than what is suggested by their need status. However, affluent whites enjoy numerous advantages that foster their

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access to competitive schools that may eclipse the FA/AA advantage that middle class and affluent minorities enjoy. Whites from the highest income strata are more able financially than similar blacks and Hispanics to pursue expensive postsecondary education destinations because of an unobserved differences in wealth, which is a strong predictor of college attendance (Conley, 2001; Massey et.al., 2003). In addition, affluent whites are also more likely than high-income minorities to have the know-how about the selective educational market and to have a historical advantage deriving from legacy status. Moreover, they are also better prepared academically and therefore more eligible for merit-based financial aid.

The bottom panel of figure 3 illustrates an entirely different situation in 4-year non-selective colleges: since there is no need to diversify the student body in these institutions, all students are subject only to the guidelines of financial aid policy—depending on their need-status. It is also worth mentioning the low tuition in such institutions compared with institutions at the top of the institutional selectivity spectrum, which makes financial aid less critical for attending.

The discussion so far does not advise on how Asians fit into this framework. While researchers pay close attention to Hispanics' and blacks' degree of educational opportunity, Asians' educational careers go largely unexamined, partly because of insufficient data but also because Asians' educational over-achievement does not pose a problem for the public policy agenda. Not only was AA historically not designed to enhance Asian youth's access to higher education, there are claims that Asians are treated differently from other ethnic minority groups in admission to highly selective colleges (Karen, 1990; Steinberg, 2003). I assume that this may primarily influence economically

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disadvantaged Asians because they, like all Asians, are not directly targeted by Affirmative Action policies (because of their relative over-representation at those institutions), but unlike affluent Asians, they lack the financial ability to pursue expensive postsecondary education. However, Asian students' outstanding academic achievements may alter this prediction because they may be more eligible for merit-based aid than all other ethno-racial groups with similar economic means. Although part of this short review may suggest that Asians' college destinations should not differ from whites' (neither group is perceived as an under-represented minority), such an argument ignores Asians' high motivation for educational attainment, high inclination to selective institutions, and academic over-achievement. Because of these conflicting effects on Asians' enrollment, and because of the literature's neglect of Asians' in higher education, I do not put forward solid hypotheses regarding Asians' college destinations and financial aid status. Instead I prefer to revisit this subject after gathering evidence on Asians' convoluted standing in postsecondary education.

To sum up the foregoing I suggest two hypotheses regarding students' college destinations:

H1) Hispanic and black high school graduates from economically disadvantaged background are more likely than are their white counterparts to enroll in 4-year selective and highly selective colleges than in 2-year or 4-year non-selective colleges.

H2) Hispanic and black high school graduates from high/middle economic background are less likely than are their white counterparts to enroll in 4-year

selective and highly selective colleges than in 2-year or 4-year non-selective

colleges.

The first section of the empirical investigation examines these two hypotheses;

subsequent section is focused on assessing the mechanisms that produced these race-class

group-specific college destinations by exploring the link between financial aid and

affirmative action practices.

Data and Variables

Data and sample: The eighth-grade cohort of the NELS:88 that graduated from

high school in 1992 (n=14,916) provides the data for the empirical analyses that follow.

The detailed education histories provided by this dataset make them ideal for studying

both the transition to college and the institutional selectivity of college students. In

addition to over-samples of blacks and Hispanics, this survey also includes rich

information regarding test scores and academic high school performance, as well as

standard indicators of family background. College transcripts are available for students

who attended postsecondary institutions. From the original 14,916 observations I

excluded 212 Native Americans, 23 students of unknown race, 228 students who did not

participate in the 3rd follow-up, and 1526 who did not graduate from high-school. Family

income in the 2nd follow-up was missing in 2088 observations: in 1581 of them I replaced

the missing data with their baseline family income value (Pearson correlation of 0.74

between the two measures), and I deleted the remaining 507 observations, which were

missing both base-year and 2nd follow-up family income. The final sample consists of

12,420 NELS:88 1992 high school graduates (including GED), of whom 8,529 were

whites, 1,313 were blacks, 1,604 were Hispanics, and 975 were Asians. This ethno-racial classification is broader than the usual black/white dichotomy, and it is necessary as the ethnic diversification of the student population increased.[10] All analyses are weighted to adjust for over-sampling, non-response, and attrition. Moreover, all multivariate analyses are adjusted to account for the complex survey design of the data set, namely the clustering of observations in primary survey units.[11]

Variables for modeling college destinations: The dependent variable—college destination—depicts the type and selectivity of the first institution attended, while considering the probability of attending 4-year schools (by their selectivity), attending 2-year community colleges and the probability of non-enrollment. Prior studies that addressed the issue of college selectivity limited their analyses to youth who attended college (Karen, 2002; Alexander, Holupka and Pallas, 1987; Hearn, 1984; 1988; 1991), and even more specifically to those who attended 4-year colleges (Massey et al., 2003; Bowen and Bok, 1998; Davies and Guppy, 1997; Persell et al., 1992). This approach introduces a potential selection bias by excluding from the analysis youth who enroll in vocational training and open-door institutions, or who do not pursue postsecondary schooling at all. Moreover, breaking down college destinations to distinct categories circumvents the common use of continuous measures of institutional selectivity, which assume that the impact of ascriptive characteristics is uniform across the selectivity spectrum (see Karen, 2002; Hearn, 1984; 1990; 1991; Davies and Guppy, 1997). For example, analyzing the NELS:88 data and using a continuous measures of institutional selectivity, Karen (2002) report that blacks were less likely than whites to attend colleges of increasing selectivity. This practice ignores the heterogeneity in admission policies

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across the selectivity spectrum and camouflage race-sensitive admission initiatives in selective schools. My approach of categorical representation of all postsecondary destinations overcomes both limitations of prior research so that the intersection of race and class allows to differ by type of institution and selectivity level.

The measure of selectivity of an institution is based on the Barron's selectivity measures that was merged to the NELS:88 data.[12] The Barron's selectivity measures group schools into several levels from the most selective to the least selective that include: Most Competitive, Highly Competitive, Very Competitive, Competitive, Less Competitive, and Noncompetitive.[13] Table 1 depicts the distribution of students along these categories and their mean SAT scores. Due to small sample sizes of NELS:88 students attending top tier schools—2 percent in most competitive, 3 percent in highly competitive, and 8 percent in very competitive—I aggregated these three top levels of selectivity to one group of very selective schools. To sum, college destinations of NELS:88 high school graduates are arranged in 5 categories: non-enrollment; 2-year open door schools; 4-year non-competitive institutions (average SAT 855); 4-year competitive institutions (mean SAT 919); 4-year very/mostly/highly competitive institutions (average SAT 1092). Table Appendix A provides a detailed definition and descriptive statistics of all variables included in the analysis.

[Table 1 about here]

Descriptive Analysis

Table 2 shows that 76 percent of the class of 1992 attended a postsecondary institution. One in three of the high school graduates attended a 2-year institution, and

only one in ten high school graduates attended a 4-year non-competitive school. Seventeen percent of high school graduates attended a competitive school and about 14 percent enrolled in very/mostly and highly competitive schools. Black and Hispanic youth were more likely than whites not to pursue postsecondary education altogether, and had substantially lower odds than whites of attending 4-year selective institutions. Specifically, the share of whites who attended a very competitive school (about 15 percent) was double that of minority youth (about 7 percent). Asian high school graduates were the only group whose proportion in selective colleges exceeded its proportion in non-enrollment: while only 13 percent of Asian youth were not enrolled in the fall of 1993, about a quarter found their way into one of the top schools in the country.

[Table 2 about here]

The data also suggests that community colleges continued to attract a disproportionate share of minorities, especially Hispanic youth, maintaining ethnic tracking in higher education. About 47 percent of Hispanic high school graduates attended 2-year or other open-door institutions, compared with only one in three of all other students (blacks, whites, and Asians). Conversely, Hispanics were less likely than blacks, whites, or Asians to matriculate in a 4-year non-competitive college. Thus, although blacks and Hispanics had similar college enrollment rates and similar proportions at selective destinations, they differed in their propensity to attend 2-year vs. 4-year non-competitive institutions. This difference in college destinations may reflect the fact that 16 percent of black college bound youth attended historically blacks colleges and universities (HBCU) in 1992 (NCES, 1996b), a destination less likely for Hispanic youth (all HBCU are classified as 4-year non- competitive institutions). Consequently,

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Kane (1998) argues that black students are less sensitive to college selectivity because of their attendance in HBCU.

Table 2 also reports college destination by economic strata. Not surprisingly, while more than one in three high school graduates from low-income families did not continue education beyond high school, only one in ten of affluent graduates did not. Poor youth who did pursue postsecondary education were highly likely to do so at a community college or another open-door program – inexpensive destinations that are not oriented toward obtaining a bachelor's degree. Only 6 percent of economically disadvantaged high school graduates matriculated in one of the very selective destinations, compared to about a quarter of affluent youth.

Table 3 attends to the intersection of race and class by depicting college destinations of black, Hispanic, Asian, and white high school graduates from different economic classes (Panel A). The results depict considerable race/ethnic variation in college destinations among disadvantaged High school graduates. About 41 percent of poor white high school graduates were destined for non-enrollment, compared with 34 percent of blacks and Hispanics, and only 17 percent of Asians. Moreover, only one in four of white high school graduates attended a 4-year school of any selectivity compared to 31, 21 and 39 percent of blacks, Hispanics and Asians with similar slender economic means. Economically disadvantaged Hispanics and especially Asians had an advantage over whites in their access to very competitive schools, one not enjoyed by disadvantaged black high school graduates precisely because they occupy in large shares 4-year non-competitive institutions. Specifically, while 5 percent of poor whites and blacks attended a very competitive school, 8 percent of poor Hispanics did so and a remarkable 17

percent of low-income Asians enrolled in such an institution. Clearly, claims about "double disadvantage" or "double jeopardy" often found in the feminist literature about intersectionality (Browne and Misra, 2003, King, 1988) are defiantly not adequate to portray the educational trajectories of poor minority high school graduates as compared to whites with similar economic means. Moreover, among the poor, Asians high school graduates have the most outstanding access to institutions at the top tiers of the selectivity spectrum as one in three students matriculated in one of the nation's competitive schools.

[Table 3 about here]

Interestingly, while among whites and blacks a clear class hierarchy is evident with respect to access to very competitive colleges, the class hierarchies in Hispanics and Asians are less straightforward: for them the percentage of low income youth in such schools exceeded that of middle income youth, but not that of the affluent. Higher up in the economic ladder Hispanics lost ground compared to whites: affluent whites were as twice as likely as affluent Hispanics (and blacks) to acquire postsecondary education at very competitive institutions. Again, the percentage of affluent Asians in top tier destinations was the highest: 40 percent enrolled at these schools (very competitive) and additional 15 percent enrolled at competitive schools.

Although pattern of ethnicity and class intersection is apparent, some may argue that since the postsecondary education system is stratified, focusing on 4-year students is a more apt comparison as qualified students may need to choose between selective to less selective schools but not between attending a selective school and not attending at all. In that respect, a community college and an Ivy League school are not viable alternatives for any given student. Following this reasoning, admission policies performed at highly

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competitive institutions can attract students who were intending to attend a 4-year institution but not students who planed to join a community college or not attend at all.

To capture students destinations in a world of highly stratified educational system and constrained options, Panel B depicts college destination of NELS:88 students who matriculated in any 4-year school in 1992. The results demonstrate that even among 4-year college bound students considerable intersection exists between race and class. Poor Hispanic students attending 4-year colleges and universities are more likely than poor whites (and blacks) to attend a very competitive school. As a matter of fact economically disadvantaged Hispanic students percentage in very competitive institutions even exceeds that of Hispanic students with better economic means (37 percent of poor Hispanics compared to 19 and 32 for Hispanic students from middle and highest thirds of family income, respectively). That two in three poor black 4-year college bound students choose the non-competitive option (conceivably HBCU) shed some light on why blacks are less likely than Hispanic to attend the most competitive schools. As predicted, among the affluent, white and Asian students are in a better position to secure themselves a seat in one of the most selective institutions while only a tiny share of them attended non-competitive schools. Specifically, 43 percent of white students attended very competitive schools compared to 32 and 21 percent of Hispanics and blacks respectively. Remarkably, affluent Asian 4-year college bound students are twice and three times more likely than Hispanics and blacks to attend one of the very/highly/most competitive schools, respectively.

Taking the issue of a stratified educational system a step further, panel C reports these statistics for students attending competitive and very competitive schools to

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illustrate their allocation among these two destinations. Race and class intersection is even more pronounced: economically disadvantaged unrepresented minority students are more likely than whites to attend more selective institutions whereas the situation is reverse among affluent students. Interestingly, among middle-class students blacks still enjoy an advantage over whites while middle-class Hispanics are less able to secure seats at top tier schools. These results confirm that low and middle-class blacks enjoy better access than whites to selective destinations and this pattern was obscured in the prior results by the inclusion of non-competitive destinations in my framework.

In principal these results are somewhat misleading because in the admission process students from all economic strata are pooled together, and universities make their selection from one general pool. In this process the competition is not between disadvantaged minorities and disadvantaged whites but most likely between minorities (most of them from an impoverished background) and affluent whites and Asians. Clearly, the results presented in tables 2 and 3 illustrate that in such state of affairs affluent whites and Asians are the winners.[14] Keeping in mind this warranted qualification the results presented in Table 3 accord with the first two hypotheses by showing intersection of race and class in the access to the stratified postsecondary educational system. These results evince the existence of such intersection but are silent about why and how it is produced. Although this intersection may represent the functional link between race-sensitive and need-sensitive policies as argued, the observed differences in college destinations could simply reflect group differences in educational preparation rather than sheer economic or racial/ethnic inequality.[15] To disentangle these conflicting effects a multivariate analysis gauging college destinations of *equally*

qualified high school graduates is required. Accordingly, the multivariate analysis is designed to single out the interaction between race and class in determining college destinations, net of prior scholastic achievements and high school characteristics.

Multivariate Analysis

College Destinations

The purpose of this section of the multivariate analysis is to test the two hypotheses regarding the differential access of youth from different race and class groups to a stratified education system. I estimate three multinomial logistic regressions—one for each of the family income strata—in order to examine the intersection between race and class on college destination, net of other covariates. The dependent variable in all models is the 5-category college destination. This analysis includes youth characteristics correlated with educational outcomes, arranged in three main categories: *race/ethnicity* (white-omitted); *school type* (public; private and Catholic omitted)*, geographic region (Northeast omitted)); and *Academic performance (*SAT score and class rank deciles—the two most important determinants of college admissions).[16] Table 4 reports multinomial logistic regression models based on the NELS:88 national sample. Reported in the tables are the point estimates of the covariates of interest, i,e, these of the race and ethnicity variables.[17]

To facilitate interpretation I compare the likelihood of attendance at the "very competitive" schools to all other college destination, including non enrollment.[18] Results obtained for low-income youth corroborate the descriptive results by showing that economically disadvantaged Hispanic high school graduates were about 3 times as likely

as their white counterparts to matriculate in very competitive 4-year colleges, compared with competitive colleges, everything else being equal. Remarkably, Hispanics were also more likely than whites to attend very competitive schools also compared to their odds of not attending altogether. Blacks from impoverished backgrounds also have a substantially increased likelihood of attending very competitive schools compared to their likelihood of attending a competitive school (positive but not statistically significant), 2-year community college or not attending at all, compared to whites' relative odds. However, blacks' pull to the very selective schools is only second to their attraction to non-competitive schools, possibly the HBCU, as was already demonstrated in the descriptive results.

[Table 4 about here]

Race and class intersectionality is evident because such patterns do not emerge among youth of better economic standing. Middle income and affluent Black and Hispanic students do not have better chances than their white counterparts of attending top schools. Furthermore, some comparisons suggest that they are even in a disadvantaged position compared to whites with regard to the access to the most selective schools in the nation, everything else equal. The results also show that blacks from all economic strata are more likely than whites to attend non-competitive 4-year institutions compared to their likelihood of attending very competitive schools, capturing their attraction to historically black colleges and universities. Differences between Asians and whites are mostly pronounced among poor and affluent youth, as equally qualified Asian high school graduates enjoy an advantage over whites in access to selective schools.

These results provide support to the first hypothesis: although, Hispanics and blacks on one hand, and poor youth on the other, were less likely to enroll in selective colleges (the additive effect depicted in table 2), the multivariate analysis clearly demonstrates that economically disadvantaged Hispanics, blacks, as well as Asians, were more likely than their white counterparts to enroll in 4-year very competitive colleges. The results also uphold the second hypothesis as black and Hispanic students from high economic background were less likely than whites to attend institutions of increasing selectivity. The foregoing analysis clearly captures race and class intersection by depicting poor minority students' advantage over equally qualified whites in access to selective destinations. What is still unclear is how poor (and middle class) minorities finance the opportunity granted to them to attend selective schools. In other words, to what extent are race-sensitive initiatives complemented by financial support to guarantee minority presence in selective, alas expensive, schools? The next section provides more concrete data on the role of the generous financial support available in selective institutions in engendering this intersection and generating a real opportunity to disadvantaged minority students.

Financial Aid

Intersection of race and class demonstrated I now aim to understand the role played by FA in supporting a race-sensitive admission policy that may generate this intersection. This is an empirically complicated matter because both enrollment and financial aid statistics are short of revealing whether college choice is the result of AA and FA forces, as these recruitment efforts are hypothesized to shape the decision-making

and deliberation process that takes place *before* enrollment. Enrollment statistics only depict the final outcome of this deliberation but fail to disclose "what would have happened" if financial aid were not part of the effort to create a real opportunity for disadvantaged minorities. To overcome this analytical hurdle I compute *color-blind need- or merit-based eligibility*: this is white students' likelihood of receiving FA solely on need-based and/or merit-based criteria. By design, this predicted eligibility is not affected by race and institution type so as to keep out the impact of race-sensitive recruitment efforts: this is what every student would have received on the grounds of need or merit in the absence of race-conscious preferential admission. Finally, I contrast this predicted eligibility with the actual FA status for all four racial groups. This allows me to examine what could have been minorities' FA status in different college destinations had they been subject only to need-based/merit-based criteria, and to compare it with what they actually got, specifically in selective and highly selective institutions.

If indeed financial resources facilitate a race-sensitive admission policy to ensure poor minorities' enrollment at expensive schools, I hypothesize that

> *H3) For Hispanic and black students attending competitive/very competitive institutions (specifically from economically disadvantaged background) the actual receipt and amount of financial aid exceeds predicted eligibility, and this gap is larger than it is for whites.*

Since the above discussion suggests that minority students' enrollment is more sensitive to grants as against loans, and because grants and scholarships are the most available organizational mechanism for well-endowed schools to entice enrollment, I hypothesize

H4) The pattern described in hypothesis 3 is more evident with regard to the grant component and less significant regarding loan-taking behavior.

The following empirical analysis is designed to gauge financial aid status in college destinations of varying degree of selectivity. Appendices A and B provide definitions and summary statistics of variables used for modeling financial aid eligibility. Appendix C presents logistic modeling equations of white students' status regarding grants or loans receipt likelihood and results from a Heckman selection model predicting the dollar amount of aid received. What determines financial aid eligibility is a very important matter in times of ever-higher tuition fees, but this is beyond the scope of this paper. Therefore, I do not dwell on the specific covariates of these models but focus on the actual/eligibility gap, which is of main interest here. To directly test the third and forth hypotheses I obtained, after each model, a predicted value—"eligibility"—and then I calculated, for each group, the actual/eligibility ratio. Whenever this ratio is larger than one it suggests that actual value of FA exceeds eligibility: this group received more FA that what is suggested by color-blind need/merit-based criteria. Of specific interest is to examine whether the gap between actual FA status and eligibility is higher for students subjected to AA admission practices than it is for whites.

Table 5 depicts these statistics for low- and high-income students while the complete actual and eligibility values are delegated to Appendix D. The top section of table 5 reports the results for scholarship- and grant-receiving patterns. While white students attending very competitive institutions are no more likely to receive a grant as their need/merit eligibility would predict, for both Hispanic and Asian students attending

similar institutions the likelihood of getting a grant exceeds in more than 20 percent their predicted eligibility. By and large, similar pattern is found among affluent students.

[Table 5 about here]

However, what is unique only to low income students, but not observed among the well-to-do students, is an increase in the gap between Hispanic and Asian students and their white classmates—in terms of grant receipt—as institutional selectivity increases. For example, among poor students destined to 4-year non-competitive institutions the Hispanics' actual/predicted gap was 11 percent larger than whites' (1.27 vs. 1.14); it rose to 22 percent among student attending competitive (1.31 vs. 1.08) and to 24 among students attending very competitive institutions (1.23 vs. 0.99). Same pattern is evident for Asian students but not for blacks. Certainly, the black/white pattern is different from that of Hispanics and Asians: actual/eligibility ratio is larger for poor blacks than for whites in 2-year and 4-year non-competitive institutions but not in very competitive schools. This substantiates the finding about black youth's higher likelihood to enroll in 4-year non-selective institutions.

What stands out for well-to-do students is black 4-year college bound students' ability to secure financial resources not only more than what is predicted by need/merit eligibility but also more than whites. For affluent Hispanic we observe a bi-polar pattern whereas those attending 2-year and very competitive institutions have higher likelihood than whites to receive grant aid. These results imply that even among affluent students, minority students' ability to secure grants exceeds their eligibility, an advantage less pronounced among well-to-do white students. This finding is in harmony with the notion that FA serves as a recruitment tool used to attract (rich and poor) minority students.

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As predicted, loan-taking behavior is entirely different from that of grant receiving. The findings support the hypothesis that the grant component is more color-sensitive than loan-taking behavior, particularly in selective settings. In very competitive institutions all groups actual loan taking surpasses eligibility, indicating that all students took loans to finance tuition and other costs and to realize the opportunity to attend such schools (Kane, 1999). However, among poor students, whites' and Asians' actual/eligibility ratio is larger than that computed for blacks and Hispanics, indicating that underrepresented minority students in these selective alas costly settings took fewer loans than what they could, while whites and Asians had greater dependence on loans in order to attend. Asian students from low income families experienced the highest actual/eligibility ratio in order to finance their schooling in very competitive institutions as their actual likelihood of loan taking was 70 percent larger than what is predicted for them (27 percent larger than same ratio among whites).

The bottom panel of table 5 depicts the total annual amount of dollar aid from both sources. In general, the actual/eligibility gap increases with college selectivity reflecting a parallel increase in tuition and costs associated with attendance. However, while all students attending competitive and very competitive settings were able to secure funds exceeding their predicted dollar amount, whites and especially Asians done so more than their black and Hispanic counterparts. Taking together, the results suggest that blacks and Hispanics received more grants but secured smaller total amounts of aid than whites because of their risk aversion in taking loans. Moreover, these students may be responding to superficial aspects of grant aid (such as whether it has a name), and to a grant's share of college costs rather than its amount, as suggested by Avery and Hoxby

(2003). This is an alarming finding because it means that economically disadvantaged blacks and Hispanics are financially unprepared to face college costs compared to white and Asian students. This, in turn, may curb their ability to successfully complete college because financial resources are related to performance by reducing students' need to direct time away from academic activities and ultimately lower their chances of dropping out for lack of funds (Alon, 2003; St. John and Starkey, 1995; Paulsen and St. John, 2002; Hu and St. John, 2001; DesJardins et al., 2002). Remarkably, in all types of 4-year institutions Asians students were able to secure the largest amounts of financial aid compared to their eligibility. This may reflect not only high motivation to attend selective destinations and a high likelihood to receive merit based scholarships, but also a better navigation in the financial aid system.

Discussion

This paper aimed to scrutinize race and class intersectionality in higher education to fill the gap with regard to the conditional impact, not the additive, of ascribed characteristics in shaping access to college destinations of varying selectivity. Results confirm the additive effect of either aspect by demonstrating high race and class barriers to the 1992 stratified postsecondary education system, even among the selective group of high school graduates. Not surprisingly, this suggests that for the most part institutions if higher education are short of compensating for prior social inequalities. However, the findings also indicate that race-sensitive initiatives aimed at granting opportunity to minority students, specifically in institutions with selective admissions (where it is needed the most), have been successful in alluring minority youth from *all* economic

classes. That affluent black and Hispanic high school graduates are attending selective and highly selective institutions is less surprising compared to the ability of some (although not many) of their poor counterparts to do so and matriculate in one of the most demanding, academically and financially, schools in the nation. That about 60 percent of black and Hispanic high school graduates (in the sample) are hailing from families in the lowest income stratum explains why race-sensitive initiatives easily and quickly reach poor under-represented blacks and Hispanics. The financial aid analysis showed that part of what ensures access by these poor minorities was the allocation of financial resources, mainly in the form of grant aid. This implies that efforts to increase college access on the one hand and to increase college affordability on the other, although they do not entirely level the playing field, go a long way in this direction.

An intriguing question is why black and Hispanic youth did not share similar college destinations and similar access to financial aid if both were subject to similar race-sensitive and financial aid policies. Specifically, the question arises to why among the poor, Hispanic students had a more significant advantage over whites than blacks had. One possible explanation is an overflow of qualified black candidates from middle and high income families as against the relative dearth of Hispanics from these income levels. In that case, selective and highly selective colleges that wish to respond to the demographic change of the population, namely the increase in Hispanic population, will have to entice poor Hispanic candidates and guarantee their enrollment by granting them more financial support. The results hint at this possibility by depicting a strong black upper-class that is able to convert preferential admission into matriculation at the top

schools and also to master the financial aid system to secure generous grants in order to attend 4-year institutions of all selectivity levels.

Another difference is the depicted propensity of blacks to enroll in 4-year non-selective schools, a feature not evident among Hispanics. This may be explained by the clustering of all Historically Blacks Colleges and Universities in this category and the lack of a parallel option for Hispanic youth. These institutions clearly absorbed some of the black youth's demand for postsecondary education. However, it is unclear if HBCUs are the first choice of black students (from all economic strata) or only a last resort. If the former, a significant share of academically qualified blacks conceivably do not apply to highly selective colleges in the first place. The analysis also demonstrates that less financial resources are delegated to finance black attendance in selective destinations conceivably because of their inclination to less selective schools. However, the findings are short of determining whether blacks took the available financial aid resources to attend non-competitive institutions or were magnetized to these institutions in the first place because of better financial aid offers.

Despite an increasing number of voices claiming that Asians' suffer from their over-representation in elite schools (e.g., Karen, 1990; Steinberg, 2003), the evidence gathered in this paper showed the distinct advantage Asian youth enjoyed in access not only to selective destinations but also to financial resources. From the results it is impossible to determine whether this advantage in access and resources stemmed from Affirmative Action practices, namely institutions treating Asians youth as under-represented minorities, or whether Asians' exceptional prior academic achievements made them the most sough-after candidates for competitive institutions. Some truth

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perhaps lies in both claims because selective and highly competitive colleges wishing to achieve the twofold goal of quality and diversity may view Asian students as promoting both aspects. Moreover, Asians, with their high motivation and penchant for high quality education, may use the admission and financial resources offered by selective institutions more efficiently than their Hispanic, black, as well as white counterparts.

In the recent backlash against race-sensitive admission initiatives some policy makers have suggested focusing on class-sensitive criteria (sometime referred to as class-based affirmative action). However, evidence indicates that initiatives that focus only on class, without considering race, will gain limited success in promoting minorities' educational attainment (Kane, 1998; Karabel, 1998; Bowen and Rudenstine, 2003).[19] However, while class-sensitive admission policy holds no promise for promoting racial diversity, my analysis highlights another aspect of this debate: race-sensitive admission policy has proven to enhance class diversity. This is because the success of race-sensitive programs in ensuring diversity is *conditional* on considering class as well.[20] In light of these results the newly implemented program at Ivy League institutions, to replace all student loans by grants, seems sensible if these institutions wish to broaden their economic and racial diversity of students.

The changing landscape of higher education, especially the tolerability of race-sensitive admission criteria in conjunction with the ethno-racial diversification of the college-age population, requires solid understanding of the mechanisms that allow some groups to enroll in selective and highly selective institutions while channeling others into non-selective and open-door institutions. This paper is a first step toward conceptualizing the intersection between race and class in access to a stratified array of college

destinations. The results attest the importance of addressing the intersectionality between status groupings and the merit in using intersectional approach by highlighting the fuse influence of the race and class factors in shaping postsecondary attendance patterns.

The policy context not only provides valuable theoretical leverage in understanding why such intersection is perpetuated in the postsecondary education but also why the link of race and class defeat the familiar social hierarchies. Relying on the policy context clarifies why the expected situation of double disadvantage is not produced among postsecondary students as it may be for women of color in the labor market. Moreover, the conceptual framework employed in this research and the supporting evidence suggest that the power and oppression scheme that dominates feminist intersectional approach with regards to gender and race intersectionality in the labor market (Collins 1999; Glenn 1999; Weber 2001) is inadequate to portray race and class intersectionality within the higher education system. However, beside the policy context other social and organizational mechanisms, not to mention intrapsychic mechanisms (Reskin, 2003), may play a key role in shaping the group-specific college choice. I hope that the fascinating puzzle portrayed here will stimulate further research to fully disentangle the complex nexus of race and class in the higher educational pipeline. Moreover, I believe the results assembled in this paper stress the merit and necessity of considering issues of intersectionalities within the general stratification literature and future research should address the complex processes through which social categories influence economic fortunes.

ENDNOTES

[1] According to the U.S. Bureau of the Census in 2000 there were no racial/ethnic gaps in elementary school enrollment rates, and only modest differences in high school enrollment rates. In 2000, 98 percent of whites and 97 percent of Hispanics, blacks, and Asians aged 7 to 9 were enrolled in elementary school. In that year, 93 percent of Asians, 92 percent of whites, 89 percent of blacks, and 84 percent of Hispanics aged 16 to 17 were enrolled in high school (CPS, October 2000 (PPL-148)).

[2] Massey et al. (2003), analyzing the National Longitudinal Survey of Freshmen database, similar institutions to those investigated by Bowen and Bok, report that blacks and Hispanics in these institutions tend to come from substantially less privileged background than whites or Asians. Black and Hispanic freshman not only have less family wealth to rely upon (as measured by home ownership) but are also more likely to come from a low-income family or a family that had been on welfare at some point in the past.

[3] Under the rubric of multiracial, multicultural or postcolonial feminism (Browne and Misra, 2003).

[4] Race-sensitive practices in higher education experienced a shift, at least in rhetoric. The belief that Affirmative Action in higher education was necessary mainly to redress historical inequalities and to compensate for past discrimination was replaced by the notion that selective colleges and universities should enroll minority students to represent racial and ethnic diversity. This was because "it is good for the institution and good for the nation" (Bowen, 1987: 433; also see Duffy and Goldberg, 1998). This new rationale may reflect an effort to widen Affirmative Action to groups other than blacks because of immigration waves from Asia and Latin America, and/or it may be a tactic to cope with the backlash against Affirmative Action in the legal arena. In any event, it sees diversity as an educational value representing the belief that association with dissimilar individuals is essential for learning (Bowen and Bok, 1998).

[5] While initially all grants of the Basic Educational Opportunity Grant Program, initiated in 1973, went to low-income students, subsequent awards were extended to middle and higher income students, especially following the exclusion of home equity from the FA equation (Manski and Wise, 1983). Moreover, for the most sought-after students, college discretionary aid offers are not based solely on need, since institutions use financial subsidies to entice the most meritorious applicants.

[6] In many institutions both functions are under the same administrative roof.

[7] Although Duffy and Goldberg stated that part of what drove colleges to focus more aid on minority students was "a genuine commitment to increased access and diversity" it was the "intense competition for qualified minority students that led colleges to commit more money to financial aid" (1998:181).

[8] A contributing factor that may make economically disadvantaged minorities more attractive is selective attrition, whereby previous educational transitions have already filtered students, keeping only those most fitting. This implies that although the "sorting machine" favors affluent students, those from lower income families who survive the early sorting regimes are increasingly able to continue toward higher attainment levels (Kerckhoff, 1995). However, selective attrition is not only performed along economic status lines but also with regard to race/ethnicity. In 2000 only about 8 percent of whites dropped out of high school, compared with 13 percent of blacks and a whopping 29 percent of Hispanic youth (Lloyd et.al., 2001). However there is no evidence to suggest that this was above and beyond the selective attrition by family background. Nonetheless, to the extent that low-income minorities (high school graduates), specifically Hispanics, are more selective than low-income whites, they are more attractive for recruitment into selective institutions. (If this is the case, it is also possible that low-income minorities are also more selective than their middle class counterparts). Therefore the selective attrition process supports and facilitates the process of minority recruitment, specifically low-income minorities.

[9] According to the U.S Bureau of Census (2002) among full-time students in 1996-97 blacks and Hispanics were more likely than whites to have received financial aid: 74 and 69 percent of blacks and Hispanics, respectively, compared to 60 and 56 percent of whites and Asians reported being financial aid recipients. Likewise, among students attending selective schools, Massey and associates (2003) maintain that while 38 and 32 percent of white and Asian freshman families, respectively, were paying the full cost of higher education this was true for only a tiny share of black and Hispanic students: 10 and 17 percent, respectively.

[10] The proportion of Hispanics in the college-age population rose from 2 percent in 1950 to 15 percent by 2000; that of Asians rose from less than one percent to about 4 percent in the same period (U.S. Bureau of Census, 1950, 2000).

[11] This correction affects the estimated standard errors and the variance-covariance matrix of the estimators, but not the estimated coefficients.

[12] The Barron's selectivity measures are determined by several factors that include: the median SAT or median composite ACT entrance exam score; the student's high school class rank; student's average GPA; and the percentage of students accepted.

[13] Similar results were produced using the CIRP selectivity measure.

[14] Assessing the race-class composition of all students who attended very competitive institutions I find that it consisted of 48 percent affluent whites; 17 and 6 percent of middle and low income whites, respectively; 2 percent of high, middle and low income blacks, respectively; 2, 1.6 and 2.6 percent of high, middle and low income Hispanics, respectively; and 9, 3.5 and 4 percent of high, middle and low income Asians, respectively.

[15] The apparent advantage in access to selective schools by needy Hispanics could merely reflect selective attrition that filters Hispanic high school graduates more severely than it filters whites or blacks (see footnote 6).

[16] Flags for missing values are included in all models, but are not reported in the results presented here. These flags capture any bias introduced by the non-random distribution of missing values, thus purging substantively important coefficients of potential bias.

[17] Full models are available from the author.

[18] This was reproduced by running several (statistically identical) multinomial logistic models with different comparison groups. I only report the "very competitive" equation results from each model.

[19] For example, Kane (1998) and Karabel (1998) argue that class-based affirmative action will not effectively replace race-sensitive programs in promoting diversity because most young people who will qualify are neither Hispanics nor blacks.

[20] A similar conclusion is reached with regard to the success of new percent plans to maintain the diversity. Walker and Lavergne (2001), who compared the racial diversity at the University of Texas at Austin with Texas A&M after the implementation of the ten percent plan in Texas, suggest that the increased availability of financial aid is responsible for the effectiveness of those plans. In 1996 the Texas legislature passed House Bill 588, dubbed the Top 10% Law (or Plan), which guarantees that Texas high school graduates who rank in the Top 10 percent of their senior class be admitted to any state institution of higher learning.

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Table 1: Institutional Selectivity Categories in the NELS:88 data

Barrons' Categories	Percent	Mean SAT
Not Enrolled	24.1	762
2 Yr. Open Door	34.9	809
4 Yr. Less/Non-competitive	10.5	855
4 Yr. Competitive	16.8	919
4 Yr. Very Competitive	8.4	1022
4 Yr. Highly Competitive	3.5	1126
4 Yr. Most Competitive	1.9	1265
N	12,420	

Table 2: College Destinations of 1992 High School Graduates by Race/Ethnicity OR by Economic Status, NELS:88

College Destinations	Mean SAT	Race/Ethnicity Total	White	Black	Hispanic	Asian
Not Enrolled		24.1	23.5	29.7	26.6	13.4
2 Yr. Open Door	809	34.9	33.4	32.9	46.7	38.9
4 Yr. Non-competitive	855	10.5	9.7	19.9	7.1	7.5
4 Yr. Competitive	919	16.8	18.6	10.4	11.5	15.1
4 Yr. Very Competitive	1092	13.7	14.8	7.1	8.1	25.1
N		12,420	8,529	1,312	1,604	975

		Family income Total	Lowest Third	Middle Third	Highest Third
Not Enrolled		24.1	37.2	25.8	11.1
2 Yr. Open Door		34.9	36.4	37.2	31.2
4 Yr. Non-competitive	809	10.5	9.4	11.0	11.0
4 Yr. Competitive	855	16.8	10.8	16.7	22.1
4 Yr. Very Competitive	919	13.7	6.2	9.3	24.7
	1092				
		12,420	4,141	4,347	3,932

Very competitive is an aggregation of the Barrons's very, highly and most competitive categories.

Table 3: college destinations of NELS hs graduatesand 4-year students

	Mean	Lowest Third				Middle Third				Highest Third			
	SAT	White	Black	Hispanic	Asian	White	Black	Hispanic	Asian	White	Black	Hispanic	Asian
Panel A: All HS Graduates													
Not Enrolled		41.2	34.1	33.8	16.7	26.0	31.8	19.0	20.0	11.1	12.1	14.9	5.9
2 Yr. Open Door	809	33.5	35.0	45.2	44.2	36.4	28.9	53.3	42.3	30.6	32.7	40.4	31.8
4 Yr. Non-competitive	855	7.3	17.7	6.7	7.4	10.5	20.0	7.6	7.8	10.3	27.1	7.4	7.4
4 Yr. Competitive	919	12.6	8.4	6.6	14.9	17.6	10.5	14.9	16.1	22.9	16.8	23.1	14.5
4 Yr. Very Competitive	1092	5.4	4.9	7.7	16.8	9.5	8.9	5.3	13.9	25.1	11.4	14.3	40.4
N		2,172	763	898	308	3,239	347	463	298	3,118	202	243	369
Panel B: All 4-year College Bound Students													
4 Yr. Non-competitive	855	28.7	57.1	32.1	18.9	27.9	50.8	27.3	20.7	17.7	49.1	16.4	11.9
4 Yr. Competitive	919	50.1	27.2	31.2	38.2	46.8	26.7	53.7	42.6	39.2	30.3	51.7	23.3
4 Yr. Very Competitive	1092	21.3	15.7	36.7	43.0	25.3	22.6	19.1	36.8	43.1	20.6	31.9	64.9
N		507	221	167	143	1,185	140	119	134	1,837	118	108	253
Panel C: All 4-year SELECTIVE College Bound Students													
4 Yr. Competitive	919	70.2	63.4	45.9	47.1	64.9	54.2	73.8	53.7	47.6	59.5	61.9	26.4
4 Yr. Very Competitive	1092	29.8	36.6	54.1	52.9	35.1	45.8	26.2	46.3	52.4	40.5	38.2	73.6
N		346	101	104	120	858	80	85	109	1,527	71	89	226

Table 4: Multinomial Odds Ratios of College Destinations of 1992 High School Graduates, by Faminly Income, NELS:88[1]

Family income												
	Lowest Third				Middle Third				Highest Third			
Comparison	Very Comptitive				Very Comptitive				Very Comptitive			
	vs. Not Enroll	vs. 2YR	vs. N. compt	vs. Compt.	vs. Not Enroll	vs. 2YR	vs. N. compt	vs. Compt.	vs. Not Enroll	vs. 2YR	vs. N. compt	vs. Compt.
Hispanic	2.959**	1.829	1.832	2.910*	1.195	0.586*	0.835	0.693	0.626	0.626	0.887	0.551*
	(1.051)	(0.605)	(0.701)	(1.256)	(0.349)	(0.158)	(0.282)	(0.213)	(0.210)	(0.177)	(0.280)	(0.164)
Black	3.130**	2.060*	0.829	1.823	1.286	1.826	0.575	2.020	0.729	0.716	0.242**	0.749
	(0.940)	(0.632)	(0.269)	(0.603)	(0.473)	(0.585)	(0.198)	(0.727)	(0.271)	(0.266)	(0.080)	(0.241)
Asian	6.517**	2.309*	1.579	1.823	1.673	1.344	1.744	1.398	2.299*	1.257	1.637	1.828*
	(2.979)	(0.797)	(0.660)	(0.638)	(0.675)	(0.382)	(0.774)	(0.397)	(0.881)	(0.406)	(0.614)	(0.464)
R2	0.15				0.15				0.16			
N	3587				4030				3772			

Robust standard errors in parentheses
* significant at 5%; ** significant at 1%

[1]All models control for parental education, student's SAT scores and HS class rank, HS type and geographic region. Models also include flags for missing values.

Table 5: Actual and Color-blind Need/ Merit-based Financial Aid Eligibility of 1992 Postsecondary Students in Various College Destinations, by Race-- Low- and High-Income Students

	Low Income				High Income			
	2 Yr. Open Door	4 Yr. Non-compe	4 Yr. Competitiv	4 Yr. Very Competitive	2 Yr. Open Door	4 Yr. Non-compe	4 Yr. Competitiv	4 Yr. Very Competitive
Actual/Eligibility ratio								
Grants Reciept								
White	0.94	1.14	1.08	0.99	0.75	1.10	1.14	1.05
Black	1.18	1.29	1.15	0.87	0.74	1.52	1.81	1.16
Hispanic	0.87	1.27	1.31	1.23	0.94	0.50	1.09	1.36
Asian	0.81	1.17	1.36	1.21	0.58	0.71	1.07	1.16
Loans Reciept								
White	0.73	1.23	1.29	1.33	0.65	0.99	1.04	1.24
Black	0.66	1.56	1.61	1.02	0.96	1.04	1.06	0.96
Hispanic	0.59	1.10	0.99	1.17	0.35	0.98	1.48	1.85
Asian	1.10	1.56	1.23	1.70	1.26	0.57	1.24	1.25
Amount Yearly Aid in $k								
White	0.88	1.48	1.77	3.07	0.50	1.09	1.22	1.71
Black	0.96	1.82	2.21	1.97	1.72	1.80	2.05	2.43
Hispanic	0.67	1.29	2.06	2.97	0.24	0.68	1.29	1.89
Asian	0.89	2.36	3.83	3.81	0.59	0.83	1.91	1.57

Figure 1: The Beneficiaries of Affirmative Action Policy (Race-Sensitive)[a]

		White	Black	Hispanic	Asian
Benefit From Affirmative Action	**Yes**		*	*	
	No	*			* (?)

a) A star indicates being subject to preferential admission.

Figure 2: The Beneficiaries of Financial Aid Policy (Need-Sensitive)[a]

		Low Income	Med Income	High Income
Benefit From Financial Aid	**Yes**	*** (need-based)	**	* (merit-based)
	No			*

a) A star indicates the predicted level of financial aid

Figure 3: A Demonstration of the Overlap Between Affirmative Action (AA) and Financial Aid (FA) Policies--by Institution Selectivity[a]

A: 4 Yr. Selective and Highly Selective Colleges

	White	Black	Hispanic	Asian
Low-income	FA	AA FA	AA FA	FA
Med-income	FA	AA FA	AA FA	FA
High-income	FA (merit)	AA FA	AA FA	FA (merit)

B: 4 Yr. Non-Selective Colleges

	White	Black	Hispanic	Asian
Low-income	FA	FA	FA	FA
Med-income	FA	FA	FA	FA
High-income				

a) Font size indicates the predicted level of financial aid

Table Appendix A : Definitions and descriptive statistics of variables included in the analysis

	NELS:88		
Variable	Definition	$\overline{x}(s.d)/\%$	
College destination	First destination after HS graduation		
Not Enrolled	Based on the Barron's selectivity measures	24.1	
2 Yr. Open Door		34.9	
4 Yr. Less/Non-competitive		10.5	
4 Yr. Competitive		16.8	
4 Yr. Very/Highly/Most Competitive		13.7	
Race	The student racial or ethnic background		
White	White, not of Hispanic origin	74.7	
Black	Black, not of Hispanic origin	11.5	
Hispanic	Hispanic, regardless of race	9.4	
Asian	Asian or Pacific Islander	4.4	
Family Income	2nd follow-up total family income from all sources		
Low	Up to total family income of $24,999	29.8	
Med	$25,000 to $49,999	35.4	
High	Above $50,000	34.8	
School Characteristics			
Public school	High school being public	85.4	
Region	In which of the four U.S. Census regions the school is located		
Northeast		19.7	
West		18.4	
South		35.0	
Midwest		26.7	
rural	High school located outside MSA	31.3	
High School Performance			
Class rank Deciles	Class rank in 12 grade divided by class size--arranged in 10 groups	6.11	(2.78)
SAT Combined	A combined test score based on mathematics and verbal	896.72	(202.83)
	scholastic aptitude test taken in the 2nd follow-up		
	ACT scores were converted by a formula in use by institutions of higher education.		
Family Socioeconomic Characteristics			
Family size	Composite estimates of student's family size in 12 grade	4.27	(1.40)
Intact family	Living with both parents	70.2	
Father College Degree	Father has a B.A. degree	32.5	
Household's appliances	A scale of family possessions: an electric dishwasher, a dryer,	0.84	(0.22)
	a washing machine, a microwave oven, and a VCR—alpha 0.62[a]		
Financial Aid	Type of financial aid received		
Grants	grants or scholarships	44.6	
Loans	loans	27.6	
$ amount	Total annual amount of financial aid received	3851.25	(4492.98)
Familiarity with Financial Aid			
Importance of financial aid	The importance of financial aid, such as a school loan, scholarship,	2.26	(0.77)
	or grant in choosing a school you would like to attend? On a scale of		
	1 (not important) to 3 (very important).		
Knowledge about financial aid	Scale based on several questions regarding discussing or reading	0.44	(0.31)
	information about financial aid—alpha 0.48[a]		

a- A summative rating scale divided by the # of items

<u>Appendix B: Variables for modeling financial aid</u>

Financial aid information is available only for students who attended any institution of postsecondary education. They were asked: "What types of student financial aid did you receive while attending "INSTNAME"? Did you receive . . . Grants/scholarships/fellowships? Loans? College work-study? Other? None?" Using this information I created a set of dummy variables indicating whether each student received grants or scholarships (Grants); or loans (Loans). The students were also asked: "During your most recent period of enrollment at "INSTNAME", what is(was) the total amount of financial aid you receive(received) yearly?"—an additional aspect of financial aid status that serves as a dependent variable in the financial aid analysis. I based the predicted financial aid eligibility on criteria used to determine financial support. Eligibility for the two largest federal aid programs, the Pell Grant and Stafford Loan, is determined by a complex formula that defines financial need on the basis of income, assets, and family size. Merit aid is awarded based upon performance in the classroom and on standardized tests. Consequently, as covariates in modeling financial aid status I included the following array of variables: *school's characteristics* (geographic region, type, and urbanicity) and *academic performance* (class rank and test scores); covariates for *family socioeconomic characteristics* (family income; family size; family structure; whether father had a college degree; and a scale for household's appliances). Also reflecting socioeconomic status is *the importance of financial aid* (How important is or was the availability of financial aid, such as a school loan, scholarship, or grant in choosing a school you would like to attend?). However, financial aid status is not only determined by need or merit but also by familiarity and understanding of how, when, and where to apply (Kane, 1999). Accordingly, I also included two variables indicating *knowledge and direct action taken regarding receiving financial aid*: knowledge about financial aid (scale based on several questions regarding discussing or reading information about financial aid); and a question from the parents' questionnaire asking them whether the student had applied for financial aid.

Table Appendix C: Determinants of Financial Aid Status of 1992 High School Graduates, NELS:88[1]
White Students Only (Asymptotic standard errors of the underlying coefficients

	Grants Logistic OddsRatio	Loans Logistic OddsRatio	$Amount FA Heckman Selection Model
School Characteristics			
Public school	1.157	1.155	-17.110
	(0.155)	(0.132)	(91.783)
Region			
Northeast	—	—	—
Midwest	1.115	0.597**	-247.2695 **
	(0.148)	(0.066)	(88.421)
South	0.854	0.393**	-232.311 *
	(0.105)	(0.054)	(120.202)
West	0.972	0.382**	-298.946 **
	(0.129)	(0.062)	(108.054)
Rural	1.318**	1.125	-10.896
	(0.112)	(0.113)	(69.799)
High School Performance			
Class rank Deciles	1.184**	1.040	69.041 **
	(0.024)	(0.022)	(20.663)
SAT Combined/100	1.153**	1.081**	157.252 **
	(0.029)	(0.032)	(32.255)
Family Socioeconomic Characteristics			
Med-income	—	—	—
Low-income	2.197**	1.185	181.083 *
	(0.244)	(0.131)	(86.858)
High-income	0.598**	0.585**	-160.684 **
	(0.055)	(0.063)	(88.583)
Family size	1.088*	1.047	13.767
	(0.042)	(0.041)	(20.752)
Intact family	0.957	0.886	-48.918
	(0.101)	(0.099)	(67.335)
Father College Degree	0.939	0.901	-45.313
	(0.089)	(0.093)	(80.407)
Household's appliances	0.707	0.807	-183.779
	(0.172)	(0.201)	(159.845)
Importance of financial aid	1.973**	1.715**	459.275 **
	(0.144)	(0.119)	(80.624)
Knowledge about financial aid	3.119**	5.627**	963.243 **
	(0.431)	(0.952)	(169.657)
Intercept			-1383.389
ath rho			3.731 **
Ln sigma			8.178 **
Pseudo R^2	0.175	0.135	
N	5984	5984	5984

[1] All models include flags for missing values.   * significant at 5%; ** significant at 1%

Table Appendix D: Actual and Color-blind Need/ Merit-based Financial Aid Eligibility of 1992 I
Students in Various College Destinations, by Race

Panel A — Low Income

		Not Enrolled	2 Yr. Open Door	Actual/Elig. ratio	4 Yr. Non-competitive	Actual/Elig. ratio	4 Yr. Competitive	Actual/Elig. ratio	4 Yr. Very Competitive	ratio	N
Grants Reciept											
White	**Actual**		0.56	0.94	0.77	1.14	0.79	1.08	0.75	0.99	1,188
	Eligibility	0.50	0.60		0.68		0.73		0.75		2,172
Black	**Actual**		0.68	1.18	0.87	1.29	0.75	1.15	0.67	0.87	443
	Eligibility	0.51	0.58		0.68		0.65		0.76		763
Hispanic	**Actual**		0.52	0.87	0.78	1.27	0.92	1.31	0.89	1.23	549
	Eligibility	0.50	0.59		0.62		0.70		0.72		898
Asian	**Actual**		0.48	0.81	0.69	1.17	0.87	1.36	0.88	1.21	262
	Eligibility	0.51	0.59		0.59		0.64		0.73		308
Loans Reciept											
White	**Actual**		0.25	0.73	0.50	1.23	0.58	1.29	0.61	1.33	1,188
	Eligibility	0.27	0.34		0.40		0.45		0.46		2,172
Black	**Actual**		0.20	0.66	0.62	1.56	0.59	1.61	0.46	1.02	443
	Eligibility	0.25	0.31		0.40		0.37		0.44		763
Hispanic	**Actual**		0.16	0.59	0.34	1.10	0.34	0.99	0.45	1.17	549
	Eligibility	0.21	0.27		0.31		0.34		0.38		898
Asian	**Actual**		0.27	1.10	0.50	1.56	0.37	1.23	0.61	1.70	262
	Eligibility	0.23	0.25		0.32		0.30		0.36		308
Amount Yearly Aid in $											
White	**Actual**		$1,550	0.88	$2,891	1.48	$3,843	1.77	$7,106	3.07	747
	Eligibility	$1,468	$1,756		$1,957		$2,165		$2,313		2,172
Black	**Actual**		$1,676	0.96	$3,645	1.82	$4,207	2.21	$4,444	1.97	321
	Eligibility	$1,457	$1,739		$2,004		$1,902		$2,252		763
Hispanic	**Actual**		$1,106	0.67	$2,149	1.29	$3,937	2.06	$6,188	2.97	337
	Eligibility	$1,384	$1,656		$1,672		$1,907		$2,084		898
Asian	**Actual**		$1,428	0.89	$4,103	2.36	$6,589	3.83	$8,134	3.81	172
	Eligibility	$1,362	$1,609		$1,735		$1,723		$2,132		308

Panel B — High Income

		Not Enrolled	Open Door	Actual/Elig. ratio	Non-competitive	Actual/Elig. ratio	Competitive	Actual/Elig. ratio	Very Competitive	ratio	N
Grants Reciept											
White	**Actual**		0.17	0.75	0.37	1.10	0.36	1.14	0.38	1.05	2,726
	Eligibility	0.19	0.23		0.33		0.32		0.36		3,118
Black	**Actual**		0.20	0.74	0.46	1.52	0.62	1.81	0.42	1.16	169
	Eligibility	0.25	0.27		0.31		0.34		0.36		202
Hispanic	**Actual**		0.26	0.94	0.12	0.50	0.32	1.09	0.51	1.36	206
	Eligibility	0.19	0.28		0.24		0.30		0.37		243
Asian	**Actual**		0.12	0.58	0.20	0.71	0.34	1.07	0.43	1.16	340
	Eligibility	0.26	0.21		0.28		0.32		0.38		369
Loans Reciept											
White	**Actual**		0.09	0.65	0.21	0.99	0.22	1.04	0.28	1.24	2,726
	Eligibility	0.13	0.14		0.21		0.21		0.22		3,118
Black	**Actual**		0.17	0.96	0.22	1.04	0.29	1.06	0.25	0.96	169
	Eligibility	0.17	0.18		0.21		0.27		0.26		202
Hispanic	**Actual**		0.05	0.35	0.16	0.98	0.28	1.48	0.40	1.85	206
	Eligibility	0.10	0.16		0.17		0.19		0.22		243
Asian	**Actual**		0.16	1.26	0.11	0.57	0.20	1.24	0.25	1.25	340
	Eligibility	0.15	0.13		0.19		0.16		0.20		369
Amount Yearly Aid in $k											
White	**Actual**		$518	0.50	$1,541	1.09	$1,667	1.22	$2,772	1.71	2,726
	Eligibility	$869	$1,038		$1,418		$1,369		$1,622		3,118
Black	**Actual**		$2,257	1.72	$2,450	1.80	$3,073	2.05	$4,016	2.43	169
	Eligibility	$1,129	$1,312		$1,358		$1,498		$1,649		202
Hispanic	**Actual**		$307	0.24	$617	0.68	$1,652	1.29	$3,103	1.89	206
	Eligibility	$853	$1,260		$912		$1,285		$1,643		243
Asian	**Actual**		$560	0.59	$1,025	0.83	$2,463	1.91	$2,595	1.57	340
	Eligibility	$1,050	$946		$1,231		$1,288		$1,651		369