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Reconfiguring Admissions to Serve the Mission of Selective Public Higher Education

By Mindy L. Kornhaber

I. Introduction

On what bases should students be admitted to highly selective public colleges and universities? In Texas under *Hopwood*, and in California under Proposition 209, the answer is: "by the numbers." With lawsuits pending in Michigan and a state initiative underway in Washington, the same response may soon be heard more frequently. Given the uneven circumstances from which students' grades and class rank arise, the most potent numbers in admissions are often those from high-stakes standardized, norm-referenced tests (HSSNRTs), such as the SAT, ACT, and LSAT. Proponents of this approach argue that consideration of candidates' race or ethnicity violate laws against discrimination on the basis of race. They also assert that when HSSNRT scores are emphasized, merit is placed at the center of admissions decisions (See e.g., Thernstrom & Thernstrom, 1997; D'Souza, 1991). This score-ranked conception of merit is readily conveyed and grasped: the higher the score, the more an applicant deserves to be admitted. Nevertheless this conception is erroneously narrow: HSSNRT scores reveal little about who will succeed in higher education; they say far less about who will succeed thereafter. Thus, this score-ranked conception does not clearly support selective higher education's mission to achieve excellence in instruction, research, and service. Furthermore, when put into practice, this score-ranked conception yields devastating social consequences.

This paper first spells out several of these consequences. It then considers whether HSSNRTs are technically adequate to justify such consequences. Next, it offers a principled resolution to the debate between advocates of score-ranked admissions and proponents of diversity. This resolution is grounded less in the ideologies of individual merit and affirmative action than in the history and mission of American public higher education. Finally, it concludes by laying out various possible approaches to admission for policymakers and the wider public to consider. Each of these possibilities is considered in light of the mission of public higher education as well as its social consequences.

II. Consequences of Increased Emphasis on Testing in Admissions

Central to the debates that gave rise to *Hopwood* and Proposition 209 is the question of whether admission to a selective public institution should in any way be influenced by a candidate's racial or ethnic affiliation (*Hopwood v. Texas*, 1994, 1995; see Brest & Oshige, 1995; Tierney, 1997). Proponents of admission by the numbers argue that individuals should be admitted, whatever their race, ethnicity, gender or socioeconomic status, as long as they have 'made the grade.' Yet, it is evident that individual applicants

are not the ones to gain or lose under these policies (Brest & Oshige, 1995; Bowen & Bok, 1998). As highlighted below, an increased reliance on test scores also has consequences for particular groups, for selective public colleges and universities, and for the wider society:

Decreased admission for already underserved groups

The clearest and most immediate consequence of the increased emphasis on HSSNRTs is a sharp drop in the acceptance rates of African American and Hispanic students at selective institutions. Following Proposition 209, the number of African American students accepted to Boalt Hall, Berkeley's law school, plummeted from 75 to 14. All 14 then opted for other institutions, leaving just one African American student who had deferred enrolling the previous year (Chronicle of Higher Education, 1997; Kane, 1998a). The percentage of entering African American freshmen fell from 7.2 percent in 1997 to 3.3 percent in 1998 (Berkeley Office of Student Research, 1997a, 1998). This situation is mirrored in Texas. Following *Hopwood*, African Americans admitted into the University of Texas at Austin's Law School fell from 5.9 percent in 1996 to 1.1 percent in 1997. Admission of Mexican American dropped from 6.3 percent to 3.3 percent (Chapa & Lazaro, 1998). Of some 500 students who actually entered UT Austin's Law School in the fall of 1997, there were just four African Americans and 26 Mexican Americans (Traub, 1998). In essence, these 'new' policies have restored patterns of segregation last seen prior to the passage of the Civil Rights Act of 1964 (see Karabel, 1998).

A demographic collision

The precipitous drop in Black and Hispanic students in these selective institutions collides with the increasing proportion of these minorities in the surrounding society. Between the mid-1990s and 2010, the proportion of Black and Hispanic residents in Texas will increase

from 39 to 43.5 percent¹ (Texas Population Projections Programs, n.d.). In California, the proportion will rise from 35 percent to 43 percent, with the gain attributable to the growth of Hispanic population (Malson, 1998).

Given this growth, the new admissions policies will exclude an enormous portion of the population from selective public colleges and universities. At the same time, these institutions will concentrate their resources on society's decreasing proportion of white students and on certain segments of the Asian population. As discussed below, such enrollment patterns could well generate a backlash against selective public higher education.

Reducing public support for selective public institutions

Because tuition, endowment income, and grants are not sufficient to finance public higher education, state taxpayers subsidize these institutions. The subsidy occurs, even though many of the enrolled students are affluent. This is especially true among whites and Asians. For instance, in 1997, nearly 42 percent of white freshman at Berkeley had

parental incomes over \$100,000 a year, as did 27 percent of Asians. In contrast, 14 percent of African Americans and 10 percent of Chicanos had family incomes at that level (Berkeley Office of Student Research, 1997b).

Given the demographic trends described above, if the new admissions policies persist, the subsidy of an increasingly affluent student body will be borne by taxpayers who themselves have not benefitted from selective higher education and who are unlikely to see the benefit for their own children. Will taxpayers and their elected representatives continue to support selective higher education for cohorts of unrepresentative and affluent students? There is serious doubt, at least in Texas, according to Russell Weintraub, a University of Texas law professor: "If the majority of people in this state are going to be Mexican-American and African American, and they are going to assume many of the leadership roles in the state, then it's going to be big trouble if the law school doesn't admit many minority students -- it's going to be a bomb ready to explode" (In Traub, 1998, p. 20).

Some backlash is already evident. The Texas legislature, led by a black state assemblyman named Ron Wilson, has sought to have public universities apply the ten percent rule to all students, including athletes.² This policy would demolish quality football teams and do away with millions of dollars in football-generated university revenue. Wilson has also considered efforts to transfer money away from selective state universities and to historically black colleges (Traub, 1998).

Thus, HSSNRT-driven admissions not only segregate campuses and exclude increasing proportions of the surrounding society. By alienating African American and Hispanic citizens, they threaten the financial resources that selective institutions need to sustain their work.

A cognitive collision

Any assessment system, from teacher made tests to those created by ETS, have systemic effects on teaching and learning (Frederickson & Collins, 1989): Teachers teach to the test. Students study to it (i.e., 'Will this be on the test?'). Tests therefore influence the development of cognitive skills.

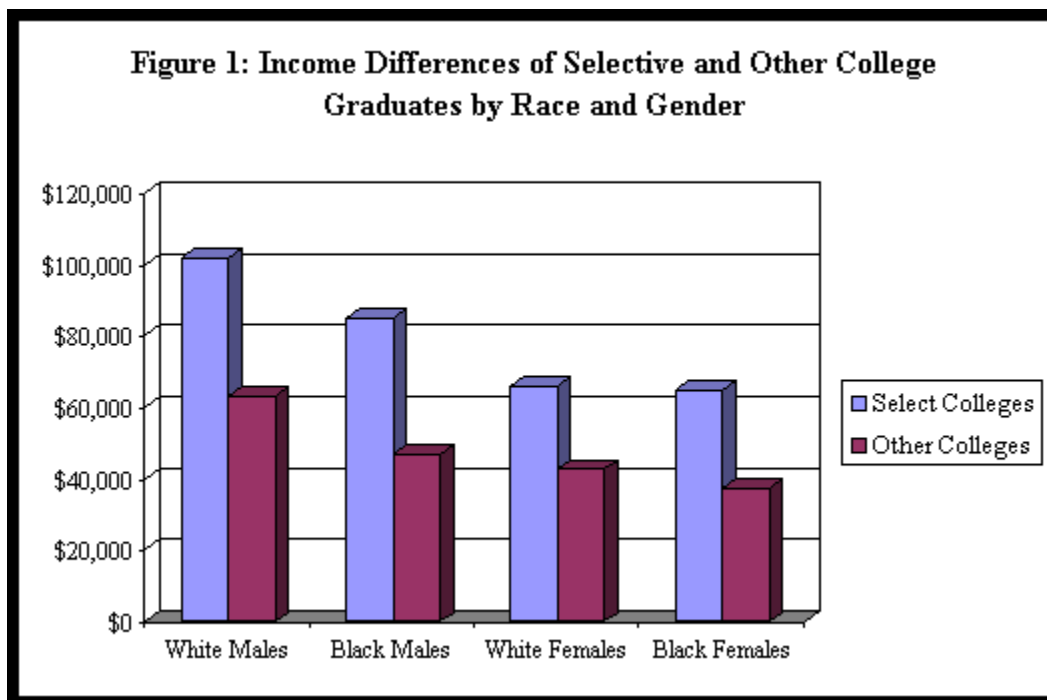
Unfortunately, because HSSNRTs are largely devoid of the kinds of problem solving skills now demanded by the wider society, they undermine the development of these skills. For example, unlike HSSNRTs, real world problems do not yield one right answer. Instead, many answers are possible and their feasibility must be considered in light of an often-shifting array of constraints. For another example, HSSNRTs must be completed by test takers working in splendid isolation. In contrast, most real-world problems require people to identify and orchestrate a range of resources, including other people, computers, and books (See Gardner, 1991; Reich, 1991; Resnick, 1987; Zuboff, 1988, 1995). Given these qualities, real world problems, unlike HSSNRT questions, typically call for more than a minute or two of concentration.

These differences place *all* students on a cognitive collision course. In our HSSNRT-driven system, students are being trained for fast, reactive, and resource-barren problem solving; yet, complex social and technological problems -- as well as decent jobs -- require much the opposite (see Reich, 1991; Senge, 1990; Zuboff, 1988, 1995). Furthermore, selective public colleges are under greater pressure to admit and educate students with the sorts of thinking skills HSSNRTs foster. These institutions are therefore likely failing to educate many who have the capacities the wider society increasingly depends upon, but which the tests don't detect.

Increasing economic divisions along race and class lines

Advocates of race-neutral and score-ranked admissions policies cite concerns for the principles of merit and justice. Yet, among most advocates, some degree of economic self interest would also be reasonable.³

Not only are children of the affluent more likely to be admitted to selective institutions, their graduation is richly rewarded. For example, 19 years after their admission, white male graduates of selective institutions earn 62 percent more than their counterparts from other institutions (\$102,000 v. \$63,000). White women graduates of selective institutions earn 55 percent more than white women graduates of other institutions (\$66,000 v. \$42,600). The difference for black male graduates is 82 percent (\$85,000 v. \$46,800). The difference for black women is 73 percent (\$64,700 v. \$37,500) (Bowen & Bok, 1998).



Based on Bowen & Bok, 1998, p. 124.

These figures highlight how much rides on admission to selective higher education for majority as well as minority applicants. They also help to reveal that the black middle class will be particularly affected by score-ranked approaches to admission. Despite growth in the black middle class spurred by affirmative action, black Americans are still less than half as likely as whites to earn \$50,000 a year or more (Bowen & Bok, 1998). Under admission by the numbers, far fewer African Americans will have access to selective public institutions, where they can gain the education needed to reach middle-class and higher income levels.

It is crucial to recognize that the division of incomes will not stop along racial lines. Admission by score ranking may fortify class divisions among whites. The reason for this is that test scores correlate not only with race, but with income (Crouse & Trusheim, 1988; Haney, 1993; Kane, 1998; Sturm & Guinier, 1996). Therefore, it is not surprising that 42 percent of Berkeley's white entering students are affluent: Scores are influenced by educational experiences that affluence allows, including better schools and test preparation courses. Given this, if score-ranked admissions dominate selective public institutions, working class and poor whites will not be afforded greater access. Instead, access will likely improve for more affluent whites and Asians.

Thus, score-ranked admissions policies provide affluent students with greater access to the kind of education that our mind-powered economy most values, while making it increasingly difficult for those at the base the social ladder to grab onto higher rungs. This includes the bulk of poor people, who are predominantly white, as well as African American and Hispanic students. All told, to the extent that the new score-driven admissions policies continue unchecked, selective public higher education will cease to serve as an engine of social mobility. It will foment, rather than ameliorate, already troubling concentrations of wealth and influence.

III. Is the Technology of Testing Adequate to Justify Such Consequences?

Given the need to choose among applicants for selective public higher education, some plausible arguments might be made for score ranked admissions practices. To be sustainable, these arguments would have to demonstrate that the benefits of this approach outweighed the consequences outlined just above.

Developers of HSSNRTs such as ETS and ACT, commonly claim that their products offer four benefits. They assert that their tests are valid predictors of academic achievement; that they are efficient; that they are objective, and that they enable comparisons of applicants especially in a highly decentralized educational system (Carnevale, Fry, Haghigat, & Kimmel, 1997; Willingham, Lewis, Morgan & Ramist, 1990). However, each of these claims is narrow and the reasoning supporting them is flawed. The claimed benefits of testing do not clearly justify these costs.

Validity

The sentiment embraced in *Hopwood* and similar cases is that test scores are valid indicators merit. Thus, the higher the score, the more a candidate deserves to attend a

selective institution. However, this is not the claim of those who design and market admissions tests. Rather, ETS, ACT, and other test developers' strongest claim is that test scores are valid predictors of first-year grades in a given academic program. (See Carnevale, et al, 1997; Willingham, Lewis, Morgan, & Ramist, 1990.) The first question to ask is: Why do test makers peg the predictive validity of their instruments to first year grades, rather than to graduation rates, later occupational success, or other, more clearly important educational outcomes? One reason, according to a vice-president at ACT, is that first year grades help to predict dropout rates and thus also to predict a college's tuition revenue stream (Saterfiel, personal communication, October 26, 1998; See Carnevale, Fry, et al, 1997). Were public colleges and universities formed for the purpose of ensuring their revenue, this would be a very important piece of information. Because they were formed for other purposes (see Part IV below), it is not justifiable to link merit with predictions about tuition payments.

A second prominent reason that the test makers peg predictive validity to first-year grades is that this is the strongest association that can be made. It is, nevertheless, quite a limited claim. Tests predict only a modest proportion of the variance in students' first year grades.

Put another way, imagine all the circumstances that help to predict why students' first year grades vary (e.g., high school preparation, study habits, test scores, quality of college instruction, peer interactions, motivation, finances, health, time management skills). For first-year college students, it happens that about 17.5 percent of grade variation is explained by their SAT score (Willingham, et al. 1990). Among law students, 17 percent of the variation in the first year grades is explained by the LSAT (Wightman, 1997). Across graduate programs, 9-10 percent of the variation in first year grades is explained by the GRE (Sternberg & Williams, 1997). In essence, then, each of these tests leave unexplained over 80 percent of what it is they're best at predicting: first year grades.

The SAT, LSAT, and GRE and similar tests are weaker yet at predicting overall success in a college program (Bowen & Bok, 1998; Carnevale, et al, 1997; Crouse & Trusheim, 1988). They are quite poor at predicting how people will perform in their careers (Sternberg, 1988). They do not predict who will go on to make contributions to civic life after graduation (Bowen & Bok, 1998). Clearly, then, the tests do not measure many individual capacities that contribute to success in college and beyond. Among the individual capacities not measured by HSSNRTs are motivation (Csikszentmihalyi, 1988; Sternberg, 1988); a willingness to seek help (National Commission, 1990) and other interpersonal skills (Goleman, 1995); a disposition to reflect upon, and revise, one's work (Chi, Glaser, & Farr, 1988; Ericsson & Smith, 1991; Perkins, 1995); the ability to prioritize tasks; and "practical intelligence"-- an ability to act on an understanding of what is valued within one's environment (Sternberg, 1988; Sternberg & Wagner, 1993; Sternberg & Williams, 1997). Furthermore, a few hours of testing cannot reveal whether an individual is likely to dedicate the 10 years that are needed to develop expertise in almost any field (Ericsson & Smith, 1991; Hayes, 1985; Simon, 1979).⁴

The institutional contributions of colleges and universities to individuals' success are also unmeasured by HSSNRTs. Such contributions are often completely ignored in the

debates about admission policies. (See Wilson, 1998.) Yet, they markedly influence students' achievement. For example, if the outcome under consideration is not first-year averages, but instead persistence into sophomore year, then SAT and other preadmission measures are relatively poor predictors. An ETS researcher concluded from his study of 4800 entering freshman at nine colleges that, "the best way to predict the likelihood of dropping out was to know where the student enrolled" (Willingham, 1985, p. 6). The institution, rather than the student's SAT score, is also a better predictor of graduation and of graduates' entry into advanced degree programs. The more selective an institution is, in terms of the institutions' average SAT scores, the more likely a student is to reach these milestones (Bowen & Bok, 1998).

To understand this, consider the features of institutions marked by higher SAT scores. These institutions are more likely to provide better financial aid, more intellectual challenges, higher expectations, more mentoring, and more promise of reward for graduation (Bowen & Bok, 1998). These characteristics are vital to surmounting many of the hurdles that students confront.⁵

If predictive validity is important to the admissions processes, then it makes more sense to predict those students who will graduate, and not merely those who will attain adequate first year averages and provide tuition revenue. Given this, it makes little sense to admit students in a hierarchy largely determined by their test scores. It makes far more reasonable to admit students to schools where they will be offered academic challenges and the resources required to confront these successfully.

Efficiency

Test developers assert that their tests are beneficial because they are efficient: Though they leave unexplained more than 80 percent of the variance in first year grades, the tests explain more variation than any other single measure.

However, the efficiency of anything is partly a function of its cost. The cost for the limited amount of information that tests provide is quite high. Part of this cost arises from the fact that, for undergraduate schools, HSSNRTs add very little additional information beyond that which is already provided by high school grades (Crouse & Trusheim, 1988). Another cost comes from the fact that while practically all college applicants take such tests, only 20 percent of colleges -- those that are selective enough to reject a substantial number of applicants -- look closely at this information. Sixty percent of colleges make virtually no use of HSSNRTs. These institutions must admit nearly all applicants to remain financially afloat (Kane, 1998b). Clearly, the testing system that is now in place for all applicants to all colleges is needlessly sprawling: Many thousands of applicants are required to waste time and money to provide test scores that simply go unused.

Among the 20 percent of colleges that can afford to look closely at scores (i.e., those with revenue from endowment or other sources that make them less dependent on tuition), it may appear that tests are efficient. This is especially so because the applicants, rather than the colleges, foot the testing bill. Yet, this appearance belies reality. Any efficiency

gained in the admissions process of these colleges is undermined by costs incurred elsewhere.

Because the tests are highly imperfect predictors, score-ranked admissions yield a fair number of individuals who will do poorly in the first year while rejecting many more who could have succeeded (Haney, 1993; National Commission, 1990). The cost to such rejected individuals is very high in terms of income and other life outcomes (Bowen & Bok, 1998). The undereducation of such individuals is also a loss for the wider society, which cannot draw on the fully maximized potential of able individuals. A more insidious cost comes from a HSSNRT-dominated system's capacity to reinforce existing stereotypes about the intellectual inferiority of African Americans (C. Steele, 1997) and the (f)utility of providing them with a high quality education.

Given these costs, and the kinds of consequences noted above in Part II, it appears that HSSNRTs are efficient only to the harried staffers of selective institutions' admissions offices. Because of inefficiencies arising elsewhere in the educational and social system, it makes little sense to consider the tests as efficient overall.⁶

Comparability

Test developers and advocates assert that HSSNRTs allow for comparisons among candidates from widely disparate high schools. Their argument runs like this: Since so many applicants have A averages, it is hard to gauge differences in their potential. And it is especially hard to determine the potential of an A student from a poor urban or rural area, since their high schools are rarely rigorous. Strong test scores allow students who come from such circumstances to have opportunities that they might otherwise be denied. (See Ziomeck & Svec, 1995.)

But how likely is this to occur? Given the differences in score distributions, the chances are small for poor and minority students. This is especially true for African Americans. "If very high scores are needed to excel in a field, or if gatekeepers believe that this is so, the fact that whites are ten to twenty times more likely to have high scores makes it almost impossible for blacks to be well represented...." (Hedges & Nowell, 1998, p. 167). It is worth asking whether the search for African Americans who perform exceptionally well in the limited ways that HSSNRTs demand justifies the exclusion of nearly all other African Americans as well as the other costs described above. (See Section II.)

It is also worth asking what sorts of comparisons these tests permit. As detailed earlier, the tests are only valid for comparing predictions about students' first year averages. Because they do not assess many individual or institutional qualities that contribute to overall academic outcomes, they are weak at enabling comparisons of students' potential for success in college or graduate school. They do not allow comparisons of students' potential for success in a career (Sternberg, 1988; Sternberg & Williams, 1997). They do not allow comparisons of students' potential to contribute to civic life (Bowen & Bok, 1988). In essence, the tests allow for costly comparisons of numbers that are minimally tethered to individual, academic, or social reality (Kornhaber, forthcoming).

Objectivity

Another benefit claimed by test makers and advocates is that HSSNRT scores yield information that is free from the subjective views of recommendation writers, interviewers, guidance counselors, and parents. This objectivity restrains the influence of the old-boy network as well as negative prejudices.

Yet, objective scores do not transform themselves into placement decisions. Rather, admissions committees must make judgments about how to consider such scores. Their subjective judgments are manifested in weighing the relative worth of scores, grade point averages, and anything else that counts as merit. These judgments, in turn, influence whose talent is maximized and the extent to which talent is equitably developed.⁷

Because human decisionmaking is central to all admissions processes -- even to those that rely heavily on quantitative data -- selection is not fundamentally an objective matter. It is, instead, a moral and ethical one (See National Commission, 1990). Who is to be given an opportunity? Whose talents will have the best chance of developing fully? Who will reap the economic rewards that elite institutions enable? Numbers cannot decide such questions. A failure by policymakers and educators to engage these questions does not amount to objectivity-by-default. In light of the consequences of score-ranked admissions to poor students, to many minority students, and to the wider society, a failure to engage these questions instead amounts to a collapse of ethical responsibility.

IV. Considering Admissions in the Context of Mission

How is it possible to resolve the conflicting demands for admission practices that yield diversity and for admission practices driven by test scores? We argue that a resolution cannot come from back and forth debates about the merits of affirmative action versus test-ranked merit. Instead, it is necessary to review the mission of selective public higher education and, from this, to construct admissions practices that align with the aims of these institutions.

The mission of public higher education

What is clear from a review of many of their mission statements is that selective public institutions have multifaceted objectives. For example, the mission of the University of California is "to serve society as a center of higher learning, providing long-term societal benefits through transmitting advanced knowledge, discovering new knowledge, and functioning as an active working repository of organized knowledge." At the University of Texas, the mission "is to achieve excellence in the interrelated areas of undergraduate education, graduate education, research, and public service." The University of Michigan's mission is "Pre-eminence in creating, communicating, preserving and applying knowledge, art, and academic values and in developing leaders and citizens who will challenge the present and enrich the future."

The mission of these selective public universities share three entwined elements that are common to nearly all other institutions of higher education (see e.g., Bok, 1982, Boyer &

Hechinger, 1981; Shils, 1997): These institutions are to provide instruction to build students' knowledge in various disciplines. They are also formed to conduct research to advance the boundaries of existing knowledge. The third component, service, originated with American public higher education (Shils, 1997) and may be its key contribution to all universities public and private, here and abroad (Bok, 1982). In contrast to the aloof medieval institutions of Europe and the colonies, which trained future clerics and oligarchs (Shils, 1997), American public colleges and universities were specifically constituted to serve the nation's democracy and its economy. They have been established to provide the society with knowledge and technical expertise. Equally as important, they are intended to develop leaders and to hone the critical perspectives needed by citizens in a participatory democracy.

These purposes originate with the nation's founding fathers. Benjamin Franklin argued that the college curriculum ought to prepare citizens for practical affairs (Brubacher & Rudy, 1976). Thomas Jefferson asserted that public education, including higher education, was needed to develop both leaders and the citizens capable of monitoring them:

...experience has shown, that even under the best forms [of government], those entrusted with power have, in time, and by slow operations, perverted it into tyranny; and it is believed that the most effectual means of preventing this would be to illuminate, as far as practicable, the minds of the people at large... (1779, Preamble to "A bill for the more General Diffusion of Knowledge" in Arrowood, 1930, pp. 80-81).

The first public university, the University of Virginia, was founded by Jefferson in 1819. Instruction, research, and service, including the formation of citizens and officials, are evident among Jefferson's stated aims. The new university was to shape able public leaders; expound an understanding of government; support agriculture, industry, and commerce; disseminate and advance knowledge; and develop in youth "reasoning faculties," "virtue," and "habits of reflection and correct action" (Jefferson, 1818, in Cremin, 1980, p. 111).

Jefferson's desire to foster an enlightened citizenry was clearly hobbled by the exclusion from the university of women and African Americans. However, guided by federal policies, public higher education has gradually become available to ever broader segments of the population. In the 1860s, land grant colleges opened up higher education to the sons and daughters of farmers and working class people. Just over a century ago, federal legislation helped to create public colleges for African Americans in historically segregated areas (Christy & Williamson, 1992). Following World War II, the GI bill enabled millions of veterans, most of whom were older and not economically privileged, to receive a college education. Soon thereafter, the Supreme Court made it illegal to exclude African Americans from state colleges and universities (*Sweatt v. Painter*) or to segregate them once admitted (*McLaurin v. Oklahoma State Regents*).

This brief look into the mission and history of public higher education draws attention to several points: First, selective public colleges and universities make clear that they seek to achieve excellence in teaching, research, service, as well as among their graduates. Yet, however one defines excellence, it makes little sense to equate it with HSSNRT scores. These scores are not useful predictors of excellence within any field of endeavor (see e.g., Sternberg, 1988).

Second, there is no mention in these mission statements that the institutions are meant to benefit either particular individuals (e.g., those with high test scores) -- or particular groups (e.g., poor and minority students). Instead, public colleges and universities clearly are intended to benefit the wider society. To achieve this, they seek in part to produce students capable of participating in, and serving, the society. However, it is not apparent that score-ranked admissions produce this outcome. For example, among students at selective institutions, SAT scores do not correlate with later participation in civic activities.⁸

Third, federal legislation and Supreme Court decisions for much of the last century and a half reveal a trajectory toward making public higher education available to ever broader segments of the population. Yet, recent enrollment patterns in California and Texas highlight that score-driven admissions practices exclude large portions of the Black and Hispanic population from selective institutions (Bowen & Bok, 1998; Chapa & Lazaro, 1998; Kane, 1998; Karabel, 1998). Because scores are positively correlated with family income, score-driven admissions also constrict opportunities for poorer whites to attend selective colleges and universities (Crouse & Trusheim, 1988; Sturm & Guinier).

All told, HSSNRT-driven admission practices subvert, rather than further, these institutions' mission. As indicated in Part III, they counter constructive teaching and learning. They do not predict or advance excellence in given domains of knowledge. Finally, they do not support the mission of service. They undermine the capacity of selective public higher education to "illuminate, as far as practicable, the minds of the people at large."

V. Possibilities for Aligning Mission with Admissions

Contemporary admissions procedures and the wider culture make it seem as if high-stakes tests are mandated. Yet, there is nothing in the mission statements of public institutions that dictates their primacy or even their use. Because neither excellence in any endeavor nor service to the wider society is well served by HSSNRT-driven admissions, it is necessary to explore other possibilities:

Possibility #1. Foster improvements in public elementary and secondary education, while leaving intact the score-driven admission systems generated under Hopwood and Proposition 209. This is the tack that California is inclined to take. The benefits of this approach are that it continues to be efficient for admissions officers to administer, the system is clear, and it is readily conveyed to the wider public. An assumed benefit is that if resources are put into the public schools and if students know what the standards are, score differences across racial and ethnic groups will abate (Jencks & Phillips, 1998).

Yet, problems with this possibility abound. First, as detailed in Part III, HSSNRTs are very imprecise and incomplete measures. Therefore, even if score-ranked admissions were draped atop a wholly equitable elementary and secondary system, many able individuals would still go unidentified. This would run counter to public higher education's mission of developing talent and knowledge for the wider society. Second, because test scores are poor at predicting who will go on to do excellent work in a given field, they undermine the mission of advancing knowledge. Third, an increased emphasis on HSSNRTs would not necessarily improve scores. As noted above, such tests steer teaching and learning in some very unproductive directions, and there is evidence that this may be especially true in the case of poor and minority students (see Kornhaber, 1998; Madaus & Clarke, forthcoming).

Finally, this possibility halts the historic movement of selective public institutions toward greater access by various sectors of the society. School improvements, though they are extremely important and should be continued, are unlikely to quickly close the gap in scores across ethnic groups. This is because the factors influencing scores extend well beyond the school house. Given this, chances are small that students now entering improved kindergartens will ultimately benefit by more equal access to selective public colleges. It is even unclear whether their grandchildren will: One estimate of the length of time needed to close the score gap between African Americans and whites, given improved schooling and other interventions, is 75 years (Jencks & Phillips, 1998). Such a distant and uncertain solution will violate public higher education's mission for the better part of the 21st century. By largely excluding poor whites, African Americans, and Hispanics, this approach contributes to already problematic social divisions. By shunting aside these large portions of the population, this possibility contradicts the obligation of public higher education to serve the citizens of a democracy. In turn, it seeds a deeply pragmatic problem for selective public higher education: the alienation of taxpayer support.

Possibility #2. Let admissions officers continue to weigh and sort individual candidates using test scores, grades, course taking, recommendations, high school quality, race, ethnicity, and other typical criteria. There are many dissatisfactions with this approach (e.g., too much attention to scores; too much attention to race; too much attention to legacies). Yet, it supports the mission of selective public institutions better than admissions dominated by the numbers.

Several costs are assumed to accompany this approach. Among these are that African Americans and other minority students do not work as hard, because they believe they will gain admission with lower scores (see Bowen & Bok, 1998). Another assumed cost is that those admitted to selective institutions with lower scores remain doubtful about their own abilities (S. Steele, 1994). A third is that the real capacities of African Americans and Hispanics can no longer be signalled by their credentials, and, therefore, affirmative action's beneficiaries are often presumed to be less qualified and thus may be stigmatized (Herrnstein & Murray, 1994). A fourth is that many able white and Asian students are denied deserved admission to selective public institutions (Kane 1998a, 1998b).

Some of these assumed costs are not borne out by recent analyses. For example, Bowen and Bok (1998, p. 261) note that "if black students admitted to the most academically demanding schools suffered as a result, they certainly don't seem to know it." Further, the cost to Asian and white students is minimal. Without affirmative action, the acceptance rates for Asian and white students would increase by only one or two percentage points (Kane, 1998a, 1998b). Despite popular beliefs, the vast majority of Asian and white students who did not gain entry to the most selective colleges would still be rejected if affirmative action were eliminated (Kane, 1998a, 1998b).

On the other hand, there are genuine costs to this possibility. It still tends to favor upper income whites, some Asians, and the affluent of all races over working class African Americans, Hispanics, and the poor. Therefore, it also tends to credentialize people according to the existing social hierarchy of income and race. In addition, in a political climate favoring tests and race-neutral approaches, another real cost of this system is the time and energy continually required to maintain it.

Despite its presumed and real costs, this possibility offers some very real benefits. In line with the instructional mission of selective public institutions, this approach generates classes that are diverse enough for stereotypes to be confronted. Opportunities to do this are vital to advancing learning (Gardner, 1991). In addition, this approach enables selective institutions to serve the wider society better than admission by the numbers. For example, an investigation of admissions decisions of 163 ABA-approved law schools revealed that of 1683 black students who would have been rejected using only LSAT and undergraduate grades, 78 percent went on to graduate law school. Almost 73 percent of the students who would have been rejected went on to pass the bar (Wightman, 1997). Thus, by extending decisions beyond the numbers, colleges and universities can fulfill their mission to educate a broad range of citizens and to prepare them to be thoughtful citizens and leaders in a democracy.

Possibility #3. Assign to existing HSSNRTs a weight in selection commensurate with the information the tests provide. That is, if tests explain 20 percent of the variation in first year grades, give the tests 20 percent of the weight in admissions decisions. The criteria for the remaining 80 percent should align with the mission of public higher education.

The costs of this approach are that more time and money will need to be funneled into admissions processes. Applicants can no longer be screened out solely on the basis of test scores, since these would not account for more than a fifth of the admissions decision. Under this possibility, admissions offices do not function primarily as sorting centers, but are instead research centers that assemble a much more complete picture of each applicant. These pictures are then viewed through the lens of institutional mission.

One benefit of this approach is that it allows a single measure of all applicants to be maintained -- a characteristic that admissions officers, among others, appreciate. More importantly, it allows selective public institutions to choose candidates using criteria that support their mission. For example, admissions committees can look for evidence that candidates are likely to achieve excellence in a given field. The best evidence of future success in any area is not test scores, but rather previous successes (Klitgaard, 1985).

This evidence can be gleaned in part from students' grades (which reflect several years' effort), their course taking patterns, and actual examples of their work. It can also be supported by evidence of perseverance in the face of obstacles, since mastery of any worthwhile endeavor demands sustained effort in the face of ongoing challenges.

Because selective public institutions aim for excellence in teaching and learning, they need to consider the candidate's background -- e.g., race, ethnicity, geographical origins, language, or personal history -- since a range of perspectives enhances the learning environment. As several prominent leaders of higher education have noted, a diverse student body helps to challenge stereotypes and thereby build new understandings (e.g., Bowen & Bok, 1998; Chronicle of Higher Education, 1997; Rudenstine, 1996). (See also, Gardner, 1991.)

It is also legitimate to consider a candidate's background when an institution's mission is to serve the society, and not merely a narrow band within it. In line with an institutional mission of producing graduates who will serve the society, it is important for admissions committees to consider whether candidates will go on to do this. (This is especially true when public resources are being used to subsidize students' education.) Since test scores do not predict this, evidence needs to be gleaned from the applicants' extracurricular activities, employment, recommendations, and other indicators.

Relative to sorting students by the numbers, Possibility #3 generates a more costly admissions process for the university. Yet, this approach is better at fulfilling the mission of selective public higher education. It yields cohorts that are able, capable of promoting learning among their classmates, motivated to excel, diverse, and dedicated to serving the wider society. In the long-term, this approach is far less costly overall than admission by the numbers.

Possibility #4. Eliminate standardized testing from the admissions process and focus on other commonly used criteria. Under this possibility, admissions criteria center on students' grades, their course taking, the quality of their high schools, class rank, extracurricular activities, and teacher recommendations. This approach to admissions is used in part by a number of selective private colleges, such as Bowdoin, Middlebury, and Bates. These colleges have made SATs optional. When test scores are not submitted, admissions committees base their decisions on the remaining information.

The reported benefits of Possibility #4 include attracting applicants who might otherwise consider these selective schools off-limits, and yielding classes that are both diverse and able. These benefits align with selective public institutions' mission of service to the wider society. They also align with the mission of excellence in instruction, since diverse students bring an enhanced range of experiences and perspectives to the classroom and the campus.

The benefits of both this approach and Possibility #3 could extend down into precollegiate education. If HSSNRTs were de-emphasized or eliminated, high school students would no longer spend time cramming for admissions tests. Instead, they would devote more attention to their high school coursework, work toward higher grades, and

seek out higher level courses. To do this precollegiate students would need to sustain effort over time. It is this kind of effort (rather than HSSNRT-style problem solving) that actually increases skill, knowledge, and competence in endeavors valued by the surrounding society (Chi, Glaser & Farr, 1988; Ericsson & Smith, 1991; Hayes, 1985; Simon, 1979).

The reported cost of this approach, among those who already use it, is the loss of a quick way to sort applicants and a ready means of comparing applicants from high schools of different quality (L. Powers, personal communication). As with Possibility #3, this one likely increases the time and money needed by admissions offices. However, if the admissions process is to serve rather than subvert the mission of public higher education, and if it is to promote sound approaches to learning at the precollegiate level, such an expense may be necessary.

Possibility #5. Eliminate SATs and other traditional admissions tests, and substitute AP exams or other tests that are tied to the curriculum. It is well worth noting that such exams are far more predictive of students' college grades than the tests we now use (Jencks, 1998). In addition, this approach has a solid track record: Almost all other countries use content-based, curriculum-linked exams for admission into college.⁹

Some of the benefits of this approach mirror those of Possibility #1. The admissions process is efficient, standards are clear, and these can be readily conveyed to the public. A ready means of comparison across diverse high schools is also left intact. However, in this case, the comparisons center on students' grasp of curricular content rather than on numbers that bear little meaningful relationship to academic performance or future success. Other benefits are similar to those of Possibility #4: With admissions dependent on curriculum-linked tests, high school students would likely work harder to grasp disciplinary content. To do this, they could not simply practice test-taking tricks, as the highly coachable HSSNRTs now encourage. Instead, they would have to engage academic content over an extended period of time. As a result, they are actually more likely to master this content. All this is in line with higher education's mission of fostering excellence in teaching and learning and serving the society.

Some costs for this approach may be incurred by students who do not test particularly well. This cost is likely to be disproportionately borne by minority students and, in some curricular areas, women (see, C. Steele, 1997). Depending upon how much such tests were weighted, Possibility #5 could therefore undermine selective public institutions' mission of serving broad segments of the society. This aspect of the mission would also be undermined under Possibility #5 by the fact that school districts serving a high proportion of poor and minority students have difficulty attracting high-calibre AP teachers. In addition, given a higher proportion of needier students in these districts, administrators may allocate resources to other sorts of instruction and services rather than to advanced curriculum (see Jencks & Phillips, 1998).

As with Possibility #1, remedying these difficulties requires a long-term investment in improving poor and minority students' schools as well as their social circumstances. Though the tests at the heart of this approach are far more likely to foster genuine

learning, for some time to come their use in admissions will likely disproportionately exclude poor and minority students.

Possibility #6. Admit students on the basis of a lottery from a pool of eligible candidates. In this approach, a sizable pool of students who are qualified for studies at a selective public colleges and universities can be assembled from a range of criteria (see Guinier, 1997). These criteria could include class rank, high school grades, particular kinds of course taking, scores on various kinds of tests, and evidence that students are likely to contribute to the wider society. A lottery can be used to select out of this large pool of eligible candidates, the number that can be accommodated. This lottery can be drawn in ways to ensure the wider population has access. For example, a certain number of places can be assigned to each zipcode. The idea of selecting eligible candidates who reflect the wider population is already accepted for the National Merit Scholarships. These scholarships are awarded not strictly to those with the highest numerical rank, but to top scorers from within each of the states.

The cost of this system will be in devising a formula for determining eligibility and getting public support for it. It is reasonable to suspect that such a formula will become an ongoing source of public debate and could be subject to political manipulation.

One benefit of this approach is that the criteria for assembling the pool can align with the mission of public higher education. For example, given that these institutions want to attract motivated learners, the criteria can lean heavily on course taking patterns, grades, class rank, and possibly AP exams. Given that these institutions are to contribute graduates who serve the wider society, the criteria should also include evidence that a candidate has served others in the community and is likely to continuing doing so. In addition, a lottery drawn by local geographic area can yield a diverse and able group of students capable of challenging each other's assumptions and stereotypes. It thus serves the instructional mission of selective institutions. Admitting a diverse cohort also aligns with these institutions' mission to serve the wider society and with their history of expanding access.

Alongside fostering various aspects of the mission, once this system is in place, it will be relatively inexpensive to run. Some time, but probably no more than is now consumed, will be used to review applications for evidence of a student's service orientation. But once eligibility criteria for GPA, class rank, scores, and course requirements are put in place, there will be little need to sort and weigh these, since final selection will be by lottery. As with Possibilities #3-5, this one also has the potential to motivate high school students. It sends students -- especially those from traditionally underserved populations - - two important messages: academic performance matters for entry into the pool, and high stakes tests aren't being used in ways that almost inevitably exclude them. Finally, a lottery may reduce the tendency of HSSRNT-focused admissions to reinforce negative racial and ethnic stereotypes that do not serve the wider society: under Possibility #6, those who are eligible but not admitted are more likely to be deemed unlucky rather than inadequate. This view, in turn, could mobilize public support for higher education: Instead of leaving capable, but unlucky, applicants out in the cold, taxpayers might lobby to make selective public education a much less scarce resource.

Possibility #7. Admit students who graduate at the top of their high school class without consideration of their admission test scores. This possibility was adopted in Texas shortly after the Hopwood decision. Under Texas' Ten Percent Plan, applicants who graduate in the top ten percent of a Texas high school are admitted to the University of Texas, regardless of test score. Momentum is now gathering in California for a similar plan. Under it, students who graduate in the top 4 percent of their high school class would be admitted to the University of California (Healy, 1999; Schrag, 1998).

Possibility #7 attempts to work constructively with the fact that many high schools across the nation are segregated by race and ethnicity. (See, e.g., Orfield & Eaton, 1996.) By admitting the top applicants from each high school in the state, selective higher institutions will ensure that minority and poor students have access.

Yet, this approach cannot wholly mask segregation's effects. Highly segregated schools are commonly marked by poorer curriculum, less well-trained teachers, and inadequate science laboratories, computer technology, and other educational resources. Therefore, the top performing students from disparate high schools can be quite disparately prepared for college. Unless selective colleges modify instruction and mentoring, one cost of this approach is that students from poorer and segregated schools may face serious academic struggles. Such experiences could increase drop out rates among African American, Hispanic and poor students. The desire to avoid such experiences could deter applications from such students.

Another cost of this approach is that African American and Hispanic students who attend schools with more racially diverse and affluent populations may be denied admission, although they are likely to be better prepared than those coming from highly segregated settings. Thus, though Possibility #7 enables the university to better serve the wider community, it may fail to develop excellence among Black and Hispanic youngsters from more middle class and integrated settings. (Obviously, under the HSSNRT-driven approach, both middle-class and poor African Americans and Hispanics are very largely excluded.)

Like Possibilities #4 and #5, one key benefit of this approach is that it rewards effort. Those who have done well in high school will not be turned away because of their HSSNRT score. Therefore, students are likelier to devote more energy to studying and mastering content. Such effort will increase students' knowledge and skills. This is in line with selective higher education's mission of enhancing learning. Another powerful benefit of Possibility #7 is that it aligns with the institutions' mission of serving the wider society. All segments of the state have access; none is excluded.

Possibility #8. Fill classes incrementally. In the incremental approach, selection would be based on a range of criteria that aligned with the institutional mission as in Possibilities #3-6. However, a sizable proportion of the freshman college class would remain unfilled to allow students who do well in less selective institutions to transfer in as sophomores and juniors.

Assuming the graduating class size remained the same, one cost of this approach for the selective institution is lost tuition revenue from smaller classes during the freshman and sophomore years. There would likely also be less concrete costs for the time and energy needed to convince the public that places should be held for hardworking and successful students from other institutions rather than filled with eager and able 18 year olds.

In line with the mission of serving the wider society, one benefit of this approach is that it provides opportunities for those from poorer high schools to prepare for demanding coursework. It also provides the receiving college with solid evidence -- from past performance in a college setting -- that these students can do excellent work. This would be especially beneficial to students whose high schools offered few, if any, AP courses.

This approach to admissions meshes with the instructional mission of public higher education institutions. If four year institutions were dependent in part on transfers from community colleges, they might be motivated to work with these institutions to identify and develop an able cohort. Thus, instead of an artery that hemorrhaged minority, poor, and nontraditional students, community colleges could be a genuine pipeline to advanced education for often underserved students.

Possibility #9. Alter the teaching and learning environment of selective public institutions to minimize achievement differences across racial and ethnic groups and then ignore average score differences across groups of applicants. Programs that successfully support high achievement across racial and ethnic groups already exist in selective higher education. These programs emphasize academic challenge, maintain high expectations, foster social and academic support of peers, and provide extensive engagement in academic content (see Bowen & Bok, 1998; Brennan, 1998; Fullilove & Treisman, 1990; C. Steele, 1997). As long as students enter programs that employ these kinds of strategies, selective public colleges and universities can admit students who show promise, based on course taking patterns, grades, evidence of motivation, service, and other indicators that align with the institutional mission. The typical differences in average HSSNRT scores across racial groups become largely irrelevant.

If such programs were widely adopted, there would likely be some initial costs to public colleges and universities associated with redesigning curriculum and instruction to incorporate these strategies. Yet, these costs are clearly justified: They allow the institutions to meet their mission of excellence in teaching. They prepare students to take on demanding work in research and the professions (see Brennan, 1998). They enable the institutions to fulfill their mission of serving society by fostering the talents of students both to a high level and on an equitable basis.

The possibilities outlined above help to illustrate how admissions processes can support or undermine the mission of selective public higher education. None of these possibilities is without costs. Yet, the costs have to be considered against the mission of these institutions. When the mission of selective public higher education is placed front and center, alongside an understanding of the limitations and consequences of currently used

HSSNRTs, the current push toward admission by the numbers becomes impossible to justify. The policies set forth under *Hopwood* and Proposition 209 limit the formation of rich learning environments. They thereby hinder the instructional mission and constrain the development of new knowledge. These policies erode the capacity of these institutions to serve society. They make public selective higher education largely inaccessible to African Americans and reduces their accessibility to Hispanics and to poor students of all backgrounds. In sum, such policies impede the development of citizens and leaders who both represent, and can function within, the multicultural democracy which this nation must become.

VI. Conclusion

Selective public colleges and universities have multifaceted roles within our society. They are asked to educate for content knowledge and democratic citizenship, to create new knowledge through research, and, in a host of ways, to serve the wider society which is ever more diverse and knowledge-driven. Given all this, it is ironic that they are under increasing pressure to rely on indicators that say little about how an applicant will fare as a student, researcher, citizen, worker, or leader.

Yet, this irony is understandable. In situations of great complexity, human beings typically seek to simplify -- they 'make do' by constructing answers using extremely limited amounts of information (Simon, 1979). Admission by the numbers fits this very human approach to problem solving: It is readily grasped and carried out. Unfortunately, this oversimplified approach generates consequences that are unacceptable on any campus, but especially on those that have been publicly formed and supported. This approach reduces access for poor whites and Hispanics. It almost completely excludes African Americans, the majority of whom, if admitted, would be likely to succeed and contribute to the wider society (Bowen & Bok, 1998; Wightman, 1997). This approach also has damaging consequences for the wider society. It supports existing divisions by race and class. It fosters forms of teaching and learning which are incompatible with society's need for people who can orchestrate an array of resources, work well with others, and generate new, rather than existing, answers.

When compared to score-driven approaches, admissions systems that allow both able and diverse students to be selected are not simple. They make more use of various criteria, they are less linear, and they often entail greater exercise of human judgment. These characteristics make them relatively more difficult to explain and to maintain under fire -- unless the mission of selective public higher education is kept in the foreground. But given this mission, such systems are not only justifiable, but necessary. It is these systems that enable the minds of the people at large to be illuminated as broadly and as deeply as our demography, economy, and democracy demand.

Notes

¹ This figure assumes modest growth.

² In response to Hopwood, the Texas legislature adopted the "Ten Percent Plan," under which all high school students who graduated within the top 10 percent of their classes must be admitted to the University of Texas.

³ Kane (1998b, p. 431) notes the relationship between financial gains stemming from a college education and calls to eliminate consideration of race in admissions: "As the labor market payoff to a college education has risen and competition for admission to elite universities has become more keen, racial preference in college admissions has become increasingly controversial, particularly at public institutions."

⁴ One might analogize the many aspects that go into making a strong student to the many strengths of the selective institutions they seek to attend. The stature of selective institutions arises from such things as the quality of their faculty members, their endowments, their library holdings, their special institutes, their record in placing graduates, their physical facilities, and the quality of their students. Because it is not a single strength that makes these institutions desirable, their leaders decry the fact that U.S. News & World Reports weights test scores heavily in their annual rankings (Sanoff, 1998; Shelton, 1998). It is ironic then, that such institutions are increasingly dependent on such limited measures, which they reject as a way to sort and rank themselves.

⁵ This holds true from elementary school through doctoral work: When students are challenged, high expectations are held for them, and there is a supportive social network, they are likely to achieve more (Edmonds, 1981; Fullilove & Treisman, 1990; Levin, 1988, 1991; Singham, 1998; see also Brennan, 1998).

⁶ Not only do test-ranked admissions contribute to inefficiencies in the development of human talent needed by the larger society, they are likely also inefficient from a business perspective. Tests makers are like utility companies of old. Because there is little competition among them and almost all applicants are dependent upon them, the costs are likely far higher than they need to be. Yet, unlike utility companies, or providers of other vital services, such as health care or transportation, there is almost no independent oversight or public licensing of test services (National Commission, 1990). Given the increasing importance of college degrees to the economic health and well-being of individuals and the wider society, such tests and their use should be subject to increasing public scrutiny.

⁷ Decisions about how to weigh test scores helped to fuel the Hopwood case. As a high school student, Cheryl Hopwood was accepted to Princeton (Burka, 1996). For financial reasons, she instead attended a community college and then graduated from a state college. Hopwood went on to attain a solid LSAT score of 39 (83rd percentile) (*Hopwood v. Texas*). However, not only were Hopwood's score and GPA considered, but so were the unremarkable quality of her undergraduate college and the fact that she did not submit letters of recommendation or write a compelling essay. As a result, not only

were some 60 minority students with lower scores admitted; so were some 130 white students who ranked lower on a combined measure of LSATs and grades.

⁸ Bowen & Bok (1998) found that, all other things being equal (e.g., SAT, SES, and high school rank), African Americans who had attended these institutions "were much more likely than their white classmates to have taken on leadership positions in virtually every type of civic endeavor" (p. 168).

⁹ Most other countries also have a far more centralized curriculum. Thus, students are tested on curriculum they have been taught. Given the highly-decentralized nature of education in the U.S., this meshing of curriculum and examinations would be far harder to achieve.

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References

- Berkeley Office of Student Research. (1997a). Table 3: New undergraduates by class level by ethnicity, fall, 1997.
<http://osr4.berkeley.edu/PUBLIC/STUDENT.DATA/PUBLICATIONS/UG/ugf97.html#table8>.
- Berkeley Office of Student Research (1997b). Parental income for new freshman registrants by ethnicity, Fall 1997. Berkeley: University of California, Berkeley.
- Berkeley Office of Student Research. (1998). Table 3: New undergraduates by class level by ethnicity, fall, 1998.
<http://osr4.berkeley.edu/PUBLIC/STUDENT.DATA/PUBLICATIONS/UG/ugf98.html#table8>.
- Bok, D. (1982). *Beyond the ivory tower: Social responsibilities of the modern university*. Cambridge, MA: Harvard University Press.
- Bowen, W.G. and Bok, D. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*. Princeton: Princeton University Press.
- Boyer, E. L. and Hechinger, F.M. (1981). *Higher learning in the nation's service*. Washington, DC: The Carnegie Foundation for the Advancement of Teaching.
- Brennan, M.B. (1998, July 20). Reshaping affirmative action. *Chemical & Engineering News*. <http://pubs.acs.org:80/hotartcl/cenear/980720/res.html>.
- Brest, P. & Oshige, M. (1995). Affirmative action for whom? *Stanford Law Review*, 47, 855-900.
- Brubacher, J.S. & Rudy, W. (1976). *Higher education in transition: A history of American colleges and universities, 1636-1976*.
- Burka, P. (1996). The Texas 20. *Texas Monthly*. www.texasmonthly.com/mag/1996/sep/tex20/index.html.
- Carnevale, A. P., Fry, R.A., Haghghat, E., and Kimmel, E.W. (1997). Test scores as predictors of academic and career performance. Princeton, NJ: Educational Testing Service.
- Chapa, J. and Lazaro, V. (1998). Hopwood in Texas: The untimely end of affirmative action. In G. Orfield and E. Miller (Eds.), *Chilling admissions: The affirmative action crisis and the search for alternatives*. Cambridge, MA: The Civil Rights Project, Harvard Education Publishing Group.

- Chi, M.T.H., Glaser, R., & Farr, M.J. (1988). *The nature of expertise*. Hillsdale, NJ: Erlbaum.
- Christy, R.D., and Williamson, L. (1992). *A century of service: Land-grant colleges and universities, 1890-1990*. New Brunswick, NJ: Transaction Publishers.
- Chronicle of Higher Education (1997). 62 college presidents run ad backing use of race in admissions. *Chronicle of Higher Education*, A32, May 2, 1997.
- Crouse, J. & Trusheim, D. (1988). *The case against the SAT*. Chicago: University of Chicago Press.
- Csikszentmihalyi, M. (1988). Motivation and creativity: Towards a synthesis of structural and energistic approaches. *New ideas in psychology*, 6(2), 159-176.
- D'Souza, D. (1991). *Illiberal education: The politics of race and sex on campus*. New York: Free Press.
- Edmonds, R. (1981). Making public schools effective. *Social Policy*, 12(2), 56-60.
- Ericsson, K.A. & Smith, J. (1991). *Toward a general theory of expertise: Prospects and limits*. Cambridge: Cambridge University Press.
- Fullilove, R.E. & Treisman, P.U. (1990). Mathematics achievement among African American undergraduates at the University of California, Berkeley: An evaluation of the Mathematics Workshop Program. *Journal of Negro Education*, 59(3), 463-478.
- Gardner, H. (1991). Assessment in context. In B.R. Gifford & M.C. OConnor (Eds.), *Changing assessments: Alternative views of aptitude, achievement, and instruction*. Boston: Kluwer.
- Glazer, N. (1998, April). In defense of preference. *The New Republic*. 218(14), 18-25.
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.
- Guinier, L. (1997). The real bias in higher education. *The New York Times*. June 24, 1997, Section A, p. 19.
- Haney, W. (1993). Testing and minorities. In L. Weis & M. Fine (Eds.), *Beyond silence: Class race, and gender in United States schools*. Albany, NY: State University of New York Press.
- Hayes, J.R. (1985). Three problems in teaching general skills. In S.F. Chipman, J.W. Segal, & R. Glaser (Eds.), *Thinking and learning skills: Vol. 2: Research and open questions*. Hillsdale, NJ: Erlbaum.

Healy, P. (1999, January 15). New governor wants U. of Cal to admit top 4% of students from each high school. *Chronicle of Higher Education*, 45(19), A38.

Hedges, L.V. & Nowell, A. (1998). Black-white test score convergence since 1965. In C. Jencks and M. Phillips (Eds.). *The black-white test score gap*. Washington, DC: The Brookings Institution.

Hopwood v. Texas (August 19, 1994). United States District Court. No. A 92 CA 563 SS.

Hopwood v. Texas (March 18, 1996). United States Court of Appeals for the Fifth Circuit. No. 94-50569. 78 F. 3d 932.

Jefferson, T. (1818). Report to the Commissioners for the University of Virginia. In L. Cremin (1980), *American Education: The national experience, 1783-1876*.

Jefferson, T. (1779). A Bill for the More General Diffusion of Knowledge. In C.F. Arrowood (1930). *Thomas Jefferson and education in a republic*. New York: McGraw-Hill

Jencks, C. (1998). Racial bias in testing. In C. Jencks and M. Phillips (Eds.), *The black-white test score gap*. Washington, DC: The Brookings Institution.

Jencks, C. & Phillips, M. (1998, Sept.-Oct.). America's next achievement test: Closing the black-white test score gap. *The American Prospect*, 40, 44-53.

Kane, T.J. (1998a). Misconceptions in the debate over affirmative action in college admissions. In G. Orfield and E. Miller, *Chilling admissions: The affirmative action crisis and the search for alternatives*. Cambridge, MA: The Civil Rights Project, Harvard Education Publishing Group.

Kane, T.J. (1998b). Racial and ethnic preferences in college admissions. In C. Jencks and M. Phillips (Eds.), *The black-white test score gap*. Washington, DC: The Brookings Institution.

Karabel, J. (1998). No alternative: The effects of color-blind admissions in California. In G. Orfield and E. Miller, *Chilling admissions: The affirmative action crisis and the search for alternatives*. Cambridge, MA: The Civil Rights Project, Harvard Education Publishing Group.

Kornhaber, M. (in press). Some means of spurring the equitable identification of students for selective higher education.

Kornhaber, M. (1998, Nov.-Dec.). Comment on Jencks' and Phillips', *The black-white test score gap*. *The American Prospect*, 41, 64, 66.

Levin, H. (1988). Accelerating the progress of *all* students. Rockefeller Institute Special Report Number 31. Albany: The State University of New York

Levin, H. (1991). Accelerated schools for at-risk students. CPRE Research Report Series RR-010. New Brunswick, NJ: Center for Policy Research in Education.

Madaus, G. & Clarke, M. (in press), The adverse impact of high stakes testing on minority students: Evidence from 100 years of test data.

Malson, J. (1998). Race/ethnic population estimates report. *California Demographics, Winter, 1998*. Sacramento: California Department of Finance.

McLaurin v. Oklahoma State Regents (June 5, 1950). Supreme Court of the United States, 339 U.S. 637.

National Commission on Testing and Public Policy (1990). *From gatekeeper to gateway: Transforming testing in America*. Chestnut Hill, MA: National Commission on Testing and Public Policy, Boston College.

Orfield, G. & Eaton, S. (1996). *Dismantling desegregation: The quiet reversal of Brown v. Board of Education*. New York: New Press.

Perkins, D. (1995). *Outsmarting IQ: The emerging science of learnable intelligence*. New York: The Free Press.

Reich, R. (1991). *The work of nations: Preparing ourselves for 21st century capitalism*. New York: Knopf.

Resnick, L. (1987a). Learning in school and out. *Educational Researcher*, 16(9), 13-20.

Rosen, J. (1998, February-March). Damage control. *The New Yorker*, 74(2), 58, 60, 62-68.

Rudensine, N. (1996). *The president's report on diversity and learning*. Cambridge, MA: Harvard University Press.

Sanoff, A. P. (1998, Sept. 4). Rankings are here to stay; Colleges can improve them. *Chronicle of Higher Education*, 45(2), A96.

Schrag, P. (1998, Dec. 23). Coming soon – UC's 4-percent admissions solution. *Sacramento Bee*, 284, B7.

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.

Shelton, P. (1998, Jan-Feb). An assault on rankings. *Law Services Report*, 98(1), 2-3.

Shils, E. (1997). *The calling of education: The academic ethic and other essays on higher education*. Chicago: University of Chicago Press.

- Simon, H. (1979). *Models of thought*. New Haven, CT: Yale University Press.
- Singham, M. (1998, Sept.). The canary in the mine: The achievement gap between black and white students. *Phi Delta Kappan*, 80(1), 9-15.
- Steele, C. (1997). A threat in the air: How stereotypes shape the intellectual identities and performance of women and African Americans. *American Psychologist*, 52(6), 613-629.
- Steele, S. (1994). A negative vote on affirmative action. In N. Mills (Ed.), *Debating affirmative action: Race, gender, ethnicity, and the politics of inclusion*. New York: Delta.
- Sternberg, R.J. (1988). *The triarchic mind: A new theory of human intelligence*. New York: Viking.
- Sternberg, R.J. & Wagner, R.K. (1993) The g-ocentric view of intelligence and job performance is wrong. *Current directions in psychological science*, 2(1),1-5.
- Sternberg, R.J. & Williams, W. (1997). Does the graduate record examination predict meaningful success in the graduate training of psychologists? *American Psychologist*, 52(6), 630-641.
- Sturm, S. and Guinier, L. (1996). The future of affirmative action: Reclaiming the innovative ideal. *California Law Review*, 84, 953-1035.
- Sweatt v. Painter. (June 5, 1950). Supreme Court of the United States, 339 U.S. 629.
- Texas Population Projections Program (n.d.). *Population 1990 and projected population 1995-2030 by race/ethnicity and migration scenario for state of Texas*. College Station, Texas: Texas A&M University.
- Thernstrom, S. & Thernstrom, A. (1997). *America in black and white: One nation indivisible*. New York: Simon & Schuster.
- Tierney, W.G. (1997). The parameters of affirmative action: Equity and excellence in the academy. *Review of Educational Research*, 67(2), 165-196.
- Traub, J. (1998, April) Testing Texas. *The New Republic*, 218(14), 20-21.
- Wightman, L F. (1997). The threat to diversity in legal education: An empirical analysis of the consequences of abandoning race as a factor in law school admission decisions. *New York University Law Review*, 72(1), 1-53.
- Willingham, W. (1985). *Success in college: The role of personal qualities and academic ability*. New York: College Entrance Examination Board.

Willingham, W., Lewis, C., Morgan, R., & Ramist, L. (1990). Predicting college grades: An analysis of institutional trends over two decades. Princeton, NJ: Educational Testing Service.

Wilson, W.J. (1998). The role of the environment in the black-white test score gap. In C. Jencks and M. Phillips (Eds.). *The black-white test score gap*. Washington, DC: The Brookings Institution.

Ziomec, R. and Svec, J. (1995). High school grades and achievement: Evidence of grade inflation. Act Research Report Series, 95-3. Iowa City, IA: ACT.

Zuboff, S. (1988). *The age of the smart machine: The future of work and power*. New York: BasicBooks.

Zuboff, S. (1995). The emperor's new workplace. *Scientific American*, 297(3), 202-204.

Personal Communications

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