

Observations on Professor Sander's Analysis of the UCLA Holistic Admissions System

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Introductory Considerations

I have been tasked with reviewing Professor Richard Sander's empirical analysis of the role that race, especially the race of African-American, plays in admissions to UCLA's College of Letters and Science. Before turning to the details of Professor Sander's analysis of the race neutrality of the College's holistic admissions system, there are several more general points to be made:

- (1) Nothing about Professor Sander's analysis and report implicitly suggests, nor does Professor Sander claim, that African American (or other) students admitted to UCLA under its holistic admissions system are less than highly capable or that they are unlikely to be able to meet the demands of a rigorous UCLA undergraduate education. His claim is simply that African-American applicants as a group enjoy an admissions advantage when they apply to UCLA in contravention of the nondiscrimination requirements of California Proposition 209. This claim too is limited. It is not a claim that UCLA's African-American admittees are as individuals necessarily weaker than many individual white, Asian, Hispanic or other admittees even with respect to the purely academic credentials of grades and test scores. Indeed, the contrary is likely to be true: most African American admittees will have stronger academic credentials than at least some of the admitted white, Asian, Hispanic and other applicants with whom they were competing when they applied to the college.
- (2) Apart from Professor Sander's presentation of data pertaining to the situation before UCLA moved to holistic admissions, it is difficult to see how Professor Sander's analysis can add to the careful, sophisticated analysis of Professor Robert Mare.¹ If I understand correctly, Professor Mare had access to more detailed and better data than Professor Sander,² and he provides a more adequate model of the UCLA undergraduate admissions process. For these reasons, where the two analyses differ Professor Mare's provides the better guidance. In this connection it should be noted that on page 5 of his report Professor Sander misunderstands Professor Mare's report when he writes that the Mare report "found that a very substantial portion of African-American admissions during the holistic years it studied (2007

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¹ Professor Sander includes data from the 2009 admissions year in his analyses while Professor Mare only analyzed data for 2007 and 2008, but since Professor Sander, apparently as a condition of data access, does not break out his results by admissions year, we can learn nothing related to year or to stability across years from his work.

² I gather from what Professor Sander writes about acquiring his data that because of privacy concerns the data provided him was muddled in certain ways (e.g. yearly data were clustered) and that he did not have access to the same quality or amount of individual applicant data that UCLA was able provide Professor Mare. Privacy law would treat the two differently because Professor Mare was employed by UCLA to do an analysis for internal purposes while Professor Sander, although employed by UCLA, appears to have been treated as an external researcher when he requested confidential student data.

and 2008) could not be explained in non-racial terms.” Professor Mare can speak for himself better than I can, but what he found was that his model predicted fewer African-American admissions than actually occurred. He did not find that there were no non-racial reasons that could explain this discrepancy, nor did he find that race-sensitive admissions decisions explained the discrepancy. Moreover, nothing about Professor Mare’s results suggested that anyone intended to discriminate on the basis of race, and some of his findings are consistent with the opposite conclusion.³

- (3) Professor Sander’s results and the results of similar research showing apparent favoritism for African-Americans may be distorted by the characteristics of the applicant population. Comparing the data in Professor Sander’s Tables 4 (White and Asian Sander-constructed admissions index scores) with the data in his Table 6 (African American admissions index scores) we see substantial differences in score distributions.⁴ For example, about 52% of UCLA’s African American applicants in the three post-heuristic years Sander studied had academic credential scores in Sander’s bottom two deciles and only 4.4% had scores in his top two deciles. For whites and Asians, taken together,⁵ the percentages are about 12% and 25% respectively. Any racially neutral system that admits on variables that are statistically independent of index scores and does not include index scores will reproduce these differences, and if the variables are not just independent of index scores but are also more commonly found among African American applicants (e.g. overcoming hardship) they will exacerbate them. For example, assume UCLA selected its students randomly from all its applicants. On average 32.2% of its African American admittees would have index scores below 690 on the scale Sander constructed but only 4.4% of its white and Asian admittees would have scores this low. Or suppose UCLA decided to admit at random but only from among those whose index credentials placed them in the top 30% of its applicant population. In this case about 47% of the African Americans admitted to UCLA would have Sander-constructed index scores between 878 and 902 and about 19% would have scores above 934. Among whites and Asians the percentages would be about 32% between 878 and 902 and about 37% above 934. In analyses controlling for index scores, whether one looks at the complete range or the high tier only analyses it would appear that African Americans were substantially favored in the admissions process, and it might be suggested that racial discrimination was the only plausible explanation. But since in these toy examples we know exactly how students were accepted; namely by chance, we know that attention to race could have played no part.

³ See the discussion on pages 8 and 9 below.

⁴ Hispanic applicants would look somewhat like whites and Asians when compared to African Americans and somewhat like African-Americans when compared to whites and Asians. In the interest of brevity and keeping things simple, I shall often ignore the situation of Hispanics in this assessment.

⁵ Professor Sander combines whites and Asians into a single group, so when I refer to “whites and Asians” I am referring to this undifferentiated group and not to the characteristics of whites and Asians separately considered. I expect Professor Sander combined whites and Asians because Asians tend on average to be more similar to whites in their test scores and high school grades than either group is on average to Hispanics or African-Americans. Nevertheless, distortions may be caused by the decision to lump whites and Asians together. This possibility is suggested by Professor Mare’s analysis which indicates that the experience of whites and Asians under the holistic system seems to have differed substantially in ways that can distort comparisons between whites and Asians on the one hand and African-Americans and Hispanics on the other. See note 11 below and the discussion in the text at page 8.

Academic credentials do of course play a role in admissions decisions; indeed they are the single most important consideration. But the above point applies, even if admissions are not randomly made. Consider Table One:

Table One
Hypothetical Percentage Distribution of UCLA Post-Heuristic Admittees by
Ethnicity and Sander Index Scores

Sander Index Score For All Applicants	African Americans	Whites and Asians
120-768 (bottom 30%)	23.2%	2.5%
770-876 (middle 40%)	29.7%	16.1%
878-982 (top 30%)	47.1%	81.4%

It might appear from this Table that in the post-heuristic years UCLA discriminated hugely in favor of its African-American applicants, for admitted African-Americans are more than nine times as likely as whites to be in the bottom third of all applicants based on index credentials and far less likely to be in the top third of all applicants. However, this table was constructed by assuming that within each decile African-American applicants gained admission *at exactly the same rate* as white applicants with similar credentials. These starkly different distributions are entirely a function of differences in the applicant pool. *Race played no role* in the hypothetical decisions that generated these differences. Hence this table should caution us against intuitively assuming that statistical distributions that appear consistent with discrimination in fact reflect racial preferences in admissions.

Moreover, to the extent that factors other than academic credentials play a role in admissions and to the extent that these factors are not orthogonal to core academic credentials but like low income more commonly characterize African-Americans, one can expect that in a race blind admissions system the academic credentials of admitted African-Americans relative to those of admitted whites and Asians will be even lower than Table One suggests. Statistical models of an admissions process have the potential to be less misleading than simple tables, for they can take account of population base rates and the distribution of characteristics other than academic credentials that might affect admissions decisions. Hence, the distortions caused by underlying population characteristics would disappear if one could perfectly model UCLA's admissions selection process or if all relevant non-academic variables apart from race were captured in the holistic scores. However, neither of these condition holds.⁶

In reviewing the substance of Professor Sander's paper I have no knowledge that will allow me to dispute or confirm his history of affirmative action admissions and enrollments at UCLA or in the UC system. But I know

⁶ The conditions come closest to pertaining in Professor Mare's model of UCLA's regular review process for students with holistic scores of 2.75 or better. Professor Mare reports in his Table 11 that applying his model to Fall 2008 admissions, the adjusted disparity between the number of African-American students admitted and those that would be expected to be admitted totals 7 students or about one half of one percent of those in fact admitted. It is at the next two stages, Final Review and Supplementary Review, where significant disparities between the model's expectations and those admitted arise. But these are the stages where non-racial factors other than academic credentials are expected to play a greater role in decision making.

that some of his empirical results and conclusions he has drawn from them, especially in relation to his work on mismatch, have been convincingly disputed,⁷ and I understand that some of his California specific statistics have been disputed as well.⁸ Beyond this I shall not address the first 4 pages of Professor Sander's report.

Insufficient Disclosure

Focusing on the empirical data and analyses that constitute the remainder of Professor Sander's report, there are a number of aspects I find problematic. These begin with the very structure of the report. Social science reports of empirical analyses typically begin with a detailed discussion of the data used, adjustments to or transformations of the data, the choices that go into model construction and the reasons behind decisions and assumptions. Professor Mare's report is a model in these respects. One sees nothing remotely comparable in Professor Sander's report. This may limit my ability to evaluate some of what is reported and may result in misunderstandings. To give an idea, Professor Sander constructs for purpose of some analyses an academic index score, but since he does not say how it was constructed, it is impossible to say how it accords with the measures of academic strength that UCLA uses. Moreover, in his regression analysis Professor Sander uses SAT scores as important independent variables. According to Professor Mare's report some proportion of the UCLA applicant pool present ACT scores rather than SAT scores when they apply for admission. UCLA adjusts these different scores so they fit a common scale. Professor Sander nowhere says whether he received ACT scores as well as SAT scores, and if he did whether and how they were converted to a common scale. Thus I am unsure whether the SAT subscale scores in his regression analyses include adjusted ACT scores for applicants who only presented the latter. If not the omission of such applicants is a possible source of bias. Further uncertainty surrounds the import of the SAT variables because the logistic regressions coefficients on 8 of the 9 SAT score variables round off to 1.00.⁹ As Professor Sander recognizes, this reflects the small increments by which SAT scores increase, but rounding prevents the reader from judging how stable the influence of SAT scores is across model specifications or whether performance on one aspect of the SAT appears to affect admissions decisions differently than performance on other aspects.

Tables 4-6

Difficulties with this report extend, however beyond problems with what the reader is not told. They also include problems with how Professor Sander's data are presented and interpreted. For example, consider the acceptance and yield rates broken down by applicant ethnicity and time period that are reported in Tables 4 through 6. Professor Sander tells us that although African-American application rates and yield rates grew substantially in the holistic evaluation period and although more African-American applicants presented stronger credentials, he estimates that these factors increased the number of African-Americans entering UCLA as freshman by only 15%. This is because, according to Professor Sander, Hispanic, white and Asian applicants were

⁷ For an overview of the issues and citations to the literature disputing Professor Sander's conclusions, see the Amicus Brief filed by eleven social scientists in *Fisher v. Texas* in response to an Amicus Brief filed by Professor Sander and Stuart Taylor in support of their mismatch hypothesis. This group of scientists led by four of the country's leading social science methodologists, including two elected members of the National Academy of Science, finds that Professor Sander's mismatch studies can offer no reliable guidance on the issue. The brief is available at: <http://www.utexas.edu/vp/irla/Documents/ACR%20Empirical%20Scholars.pdf>

⁸ See, William Kidder, "Misshaping the River: Proposition 209 and Lessons for the Fisher Case," forthcoming in 39 *Journal of College and University Law*: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2123653.

⁹ The coefficients on the SAT variables are all statistically significant, apparently beyond .001, but the significance level conveys no necessary message about a variable's impact or relative importance.

also finding UCLA more attractive in the post-holistic period, meaning that changes in the African-American applicant population were in large measure offset by greater competition for positions. Professor Sander does not, however, tell us how he came up with his estimated increase of 15%, and upon close inspection of the data his estimate seems low, perhaps decidedly so. We can see why when we contrast the pre- and post-holistic period experiences of African-Americans on the one hand with whites and Asians on the other. According to Professor Sander African-American applications increased by 31% between the two periods while white and Asian applications increased by 16%. But the disparity is even greater when one looks at the increases in applicants with admissions credentials in the top part of the distribution. If we look at just those who were in the top 3 deciles of Professor Sander's academic index, we see that the number of African-American applicants with scores in this range increased by 45.2%. If we look at the top four deciles, the increase is 41.5%. For whites and Asians the comparable increases are 23.5% and 20%. Depending on which set of these highly qualified applicants we examine, the percentage difference in the increase in application numbers is not 15% in favor of African Americans but about 21%.¹⁰ If we look not at percentages but at numbers, we find that in the pre-holistic period 47 African American freshmen with academic credentials in the top 4 deciles matriculated at UCLA. In the post-holistic period 115 African-American students with credentials in this range enrolled as freshmen. So compared to the pre-holistic baseline this group of matriculants alone would have raised by about 23% the number of African-American freshmen at UCLA during the three year post-holistic period.

We can estimate the overall effects of increased applications and better yield rates on African-American enrollment in the post-holistic period by assuming that within deciles African-Americans in the pre-holistic period were accepted at the same rate as they were in the post-holistic period but that their proclivity to matriculate was unchanged. When we do this we find that the estimated number of matriculants for the pre period rises from an actual 301 students to an estimated 408 students, an increase of about 36%. But the actual increase across the two periods was from 301 to 579 new freshmen, or an increase of about 92%. The larger part of this increase appears due to the increased number of African-American applications and the higher yield rate among those accepted and not from higher acceptance rates due to holistic evaluation. The holistic evaluation system does, however, appear to have contributed to a portion of the increase because acceptance rates for African-Americans tended to be higher, controlling for index decile, than they were under the prior system. It is in addition possible that African-American high school seniors, knowing UCLA would evaluate them holistically, were more willing to apply to UCLA than they were under the prior system and that the new procedures made UCLA seem like a friendlier campus. If so the adoption of holistic review would have helped increase African-American applications and yield. This possibility is, however, entirely speculative. It seems more likely that UCLA's more intensive outreach efforts during the holistic period were the principal driving forces behind the increase in application rates and yields. Regardless of the forces behind UCLA's increased attractiveness to African-American students, Professor Sander's judgment that UCLA's more intensive recruiting efforts only increased African-American enrollments by about 15% during the holistic period appears far too low, and his attribution of most of the gain to changes in admissions rates seems off as well.

¹⁰ Since Hispanics showed the largest applicant increase (36%), I calculated their percentage increases in the top 3 and top 4 deciles; the increase is similar across years, between 32 and 33 percent. I did not calculate or otherwise estimate ethnic-specific rates for any other deciles, and chose the cut offs I did because a sufficient proportion of whites and Asians were admitted with scores in this range (34% and above at the 3rd decile cut off and 19% and above at the 4th decile) that it seemed fair to consider those who scored in this range regardless of ethnic group as well qualified by race-blind standards.

Professor Sander also writes that holistic admissions led to a decrease in the proportion of the most academically successful applicants admitted during the holistic period, and he tells us that for all groups admissions rates declined “sharply.” This conclusion deserves to be unpacked. First, it assumes that the index scores that Professor Sander constructed capture academic success. Not only are these scores not the scores that UCLA used, but the holistic admissions process considered other measures of academic success like scores in AP courses and whether one was in the top 4% of his graduating class. For these reasons one must be cautious in accepting Professor Sander’s characterization of academic success. Second, although the decline in admissions rates is substantial for the whites and Asians group (from 91% accepted to 80% accepted in the top decile and from 67% accepted to 54% accepted in the next decile) it is far less so for African-Americans (from 85% to 81% and 70% to 67% for the top two deciles) and Hispanics (from 86% to 82% and from 71% to 64% respectively).¹¹ Third, it should be recognized that some declines in the proportion of accepted students who excel by one narrow measure is an almost inevitable result of the movement to holistic admissions since holistic admissions broadens the view of what makes for a desirable applicant.¹² Finally, and most importantly, it is important not to confuse the change in the rates at which students are admitted from the various deciles with a change in the quality of the students admitted. Thus, if we look only at the whites and Asians category we see that 1904 more students with index scores in the top decile were admitted in the holistic period than in the pre-holistic period, and there were 613 more students with top decile scores who decided to enroll during the holistic period. Looking at all ethnic groups we see that there were 2108 more students with top decile index scores admitted during the holistic period and 642 more students in this group opted to attend UCLA. So whatever the percentage changes by groups, if we are interested in how UCLA fared in admitting and enrolling those students who by Professor Sander’s measure were the top academic performers, we see that compared to the prior three years the holistic

¹¹ There is problem here and elsewhere with Professor Sander’s decision to combine Asians with whites. As mentioned in note 6 above, Professor Mare’s analysis reveals that for reasons he cannot identify Asians seemed to fare especially poorly in the post holistic period relative to what his model would lead one to expect. By combining whites and Asians in one group the contrast between the success of this group’s members in achieving admission with the success of African-Americans is enhanced over what would appear to be the case if the data on African-Americans was compared with the data only for whites. In addition, disadvantages associated with being Asians, which are likely to have had little if anything to do with the application success of African-Americans, are hidden by the creation of the combined group.

¹² One might think of a GPA and test score index as one (imperfect) measure of the desirability of enrolling a particular student. Other factors that enter into the holistic admissions score may, taken together, be thought of as a second (imperfect) measure of the desirability of admitting a student. If we select people who are top performers by one measure and remeasure them, we can expect they will not do quite as well as a group even if our second measure is the same as the first (e.g., if we have those scoring at the top of the SAT scale retake the test and if there are no practice effects, a person’s retest score has a better chance of being lower rather than higher than it was the first time around.) This reflects a statistical artifact called regression to the mean. It exists because random factors, like lucky guessing, are likely to have contributed to the extremely high scores that the members of a group selected because of these scores received. Since on retesting good luck in guessing may turn to bad, the average retest score across a group selected because of its original high performance can be expected to drop. An analogous and most likely larger effect, although not largely attributable to randomness, can be expected when top scorers on one measure of desirability, like academic index scores, are scored on other measures of desirability, like leadership, essay quality, hardships overcome and other factors that influence holistic judgments. Those students who score highest on the combined measure (holistic score) will inevitably perform worse on the one measure (academic index score) than a similarly sized group composed of individuals clustered together because of their high scores s on the one (academic index score) measure. So long as the second measure reflects factors that make an applicant desirable and so long as the weight given the various measures makes sense, the quality of a school’s admittees will increase even if as a group their core academic credentials are not quite as impressive.

period is characterized by substantial improvements in both the admissions and enrollment of top academic performers, whatever the cause.¹³

Professor Sander's Tables 4 and 6 do contain data consistent with his hypothesis that race plays a role in UCLA's admissions decisions, for in all but the top decile the proportion of African-Americans admitted exceeds the proportion of whites and Asians admitted, often substantially. But although these differences are consistent with the discrimination hypothesis, they by no means prove it, and because the number of admitted African-Americans is small in all deciles, there is a good possibility that Professor Sander's percentage data mislead. The reason is that a relatively small number of "excess"¹⁴ African-American admissions can noticeably raise a given decile's African-American admission percentage. Hence within credential deciles if African-Americans benefit from particular race neutral considerations, a relatively small number of beneficiaries may substantially increase the percentage of African-Americans admitted. For example, consider the 101 fourth decile African-Americans admitted in the post-holistic period. If on average 20 African-American applicants a year had been moved from rejection to admission status because of serious adversities they had overcome, their parents' low income or similar factors this would have increased the proportion of accepted African-Americans with fourth decile credentials by 11% or from 7%, which is only a few percentage points more than the acceptance rate for similarly credentialed white and Asians, to 18%, which is 13 percentage points higher.¹⁵ Similarly, in the lowest Sander index decile the chance that an African-American student will be admitted is about twice as great as it is for whites and Asians, a seemingly large difference. However, consider the implications of the UCLA admissions protocol which calls for considering Advanced Placement courses and scores on AP tests in regular admissions, but in Final Review and Supplementary Admissions ignoring this variable so as not to disadvantage students who attended high schools where there was little if any opportunity to take AP courses. If African-American applicants were considerably more likely than white and Asian applicants to have attended such schools, this "lack of opportunity" correction would over three years only have to advantage 59 African-American applicants who were otherwise on the admissions margin to account for most of the apparently large admissions advantage that lowest tier African-American students enjoy over their white and Asian counterparts.

Another race neutral dimension which does not seem to be part of the formal UCLA admissions protocol, although it is touted at some other schools, may have similar effects. Admissions officers may consciously as a matter of policy or unconsciously as a matter of personal preference seek to balance a class on a number of dimensions. Even if race is not one of them, a desire for balance may disproportionately advantage applicants of a particular race. If the number of admitted students from a favored group is small, as it is with African-Americans, even a numerically small number of benefited applicants may yield percentage differences that suggest that members of particular group have a substantial advantage in the admissions process. For example,

¹³ Had we looked at the top two deciles as Professor Sander did, the increases in numbers would be slightly less dramatic. There were an additional 1800 admits with index scores in Professor Sander's top two deciles in the post heuristic period and an increase of 519 in those enrolled with index scores in the top two deciles. These are still noteworthy increases that are even more noteworthy because they result from increases in the top rather than the next to top decile.

¹⁴ As compared to the number of African-Americans who would have been admitted at the white and Asian admission percentages.

¹⁵ These numbers exaggerate the difference somewhat because if the overcoming hardship factor were applied in a race neutral fashion as it ought to be, the white and Asian acceptance rate would also have been smaller had the experience of overcoming adversity not been considered. But the drop would be far less, and the percentage point difference between African-American and white and Asian admission rates within the group of fourth decile applicants would still shrink substantially. Moreover, if a history of overcoming hardship were substantially more prevalent within the group of African-American applicants than within the group of white and Asian applicants, disparities would be further diminished.

consider an admissions officer whose model of the ideal class includes a number of students with substantial musical training. Thus a student evaluated by this officer will do better if he or she plays the piano, violin or saxophone. But if we examined this admissions officer's decisions we might find that saxophonists were far more likely to benefit from his belief that musicians added valuable diversity than were pianists or violinists. This might be because this officer saw and admitted so many students who played the violin or piano that except for a few virtuosos, he stopped seeing experience with these instruments as an admissions advantage. Saxophonists, however, being rare, might almost always have drawn the officer's attention and benefitted from their musical backgrounds even at lesser skill levels. If African-Americans were relatively more likely than whites and Asians to play the saxophone and relatively less likely to play piano or violin, the number of admitted African-Americans would be inflated relative to the numbers of whites and Asians. Moreover, because of the relatively small number of African-American applicants adding a few admittees for this reason coupled with a few admittees added for each of several other non-racial but race-correlated reasons might noticeably increase the rate at which African-Americans were admitted to UCLA relative to whites and Asians. I am not saying that something like this has happened. I do not know. But the possibility is another reason why even the most different race-linked admissions probabilities in Professor Sander's tables 4 through 6 do not necessarily reflect discrimination.

Finally in looking at Professor Sander's data one should recognize the bias that Professor Sander's decision to combine the admissions data of whites and Asians might create. Professor Mare's analysis indicates that during the years he studied UCLA's Asian applicants fared worse in comparison to whites than would be expected based on the variables in his model. Thus the admissions advantages that African-Americans have over whites and Asians in Professor Sander's comparisons are likely to reflect in part the disadvantage Asians have vis-à-vis whites rather than an advantage that African-Americans enjoy over whites, although the latter is the appropriate test of favoritism toward African-Americans in admissions. I expect the effect of lumping Asian applicants with whites is not great, but it still means that differences that Professor Sander would attribute to discrimination are likely to be exaggerated.

An "Overwhelming Clue"

Professor Sander concludes his discussion of Tables 4-6 by arguing that the fact that Hispanic admissions rates declined in the holistic period while African-American admissions rates rose is an "overwhelming clue" that it was not the change to holistic admissions but discrimination in favor of African-Americans that drove the rising African-American admission rates. The argument is that since Hispanics in California are as disadvantaged as African-Americans their benefits from holistic admissions should be about the same and that there can only be one cause for any observed differences – racial preferences for African-American students that Hispanics did not share. The conclusion does not, however, follow because it assumes that indicators of disadvantage are the sole factor that differentiate pre-holistic admissions decisions from those made in the post-holistic period and that other relevant indicators in the two populations changed in parallel even though applications from Hispanics¹⁶ rose by about 37% between the two periods and African-American applications increased by only 31%. Data Professor Mare presents in his Tables 2 and 3, reporting on Fall 2008 applicants, highlight some of the complexities that caution against accepting Professor Sander's conclusion. First, it appears from Table 3 that the 2008 Hispanic applicants came from more disadvantaged backgrounds than UCLA's African-American applicants because the educational attainment of parents of Hispanic applicants and their parents' income was on average

¹⁶ Native American applicants are included with Hispanic applicants in Professor Sander's data. I assume they are a negligible proportion and following Professor Sander I refer to this group as Hispanics.

lower than it was for African-American applicants.¹⁷ Moreover, Table 2 indicates that Hispanic applicants presented somewhat better grades before adjustment than African-American applicants. These facts would seem to bolster Professor Sander's claim. However, the data also show that 32% of Hispanic applicants came from schools in the bottom 20% of high school academic performance and only 8% had attended high schools in the top 10%. Among African-American applicants the comparable figures are 23% from high schools whose performance is in the bottom 20% and 14% from the top 10% of performing high schools. African-Americans were also more likely than Hispanics to have attended private rather than public high schools. So how does one balance, as one assumes a holistic admissions system does, the somewhat higher grades of Hispanic as compared to African-American students with the lower quality of the schools in which many of these grades were achieved. How too does one factor in the possibility that teachers at private schools are more adept at counseling students on which courses to take than teachers at public schools, even when students are of similar ability? Consider, in addition, the extreme difference in parental education referenced in footnote 17. One would expect this to have a direct effect favoring Hispanic applicants. But it also suggests that a high proportion of Hispanic applicants grew up in Spanish speaking households and communities. This could affect the relative quality of the essays prepared by Hispanic and African-American students as well as other aspects of their admission's files, and these indirect effects might swamp the direct effects of this indicator of disadvantage. The point is not that the conclusion that Professor Sander draws from changes in the Hispanic and African-American admissions rates across the two time periods is wrong. Rather it is that no conclusion about whether African-Americans were advantaged because of their race can be drawn from this information, and it is a mistake to see an "overwhelming clue" in these data.

The Logistic Regression

Turning to the logistic regressions that Professor Sander presents in his Table 7, even on its own terms I am at somewhat of a loss regarding exactly what to make of it. Standard logistic regression packages produce a number of diagnostics to aid one in judging the adequacy of a model, but Professor Sander presents none of them. We also do not know the numbers that underlie Professor Sander's statistics, how missing data were dealt with or how the model was developed. One would want to know, for example, how Professor Sander chose which variables, including interaction terms, to incorporate in his models and whether he examined other models in addition to those he presents here. If the models he presents are not the only models he explored,¹⁸ the statistical implications of his findings may not be as they seem. In addition, his treatment of ethnicity is unconventional. Usual practice would be to treat this as a categorical variable and to examine the effect of ethnicity in relation to an excluded category. When the issue is one of discrimination, whites are ordinarily the appropriate excluded category. We also cannot tell from the rounded coefficients presented whether the effects of the different SAT components were similar between periods and, in the holistic period, when holistic scores are and are not included in the model.

Because of Professor Mare's careful work one does not, however, have to assess Professor Sander's analysis in a vacuum. It is obvious that Professor Sander has not accurately modeled UCLA'S admissions process in the post-holistic period. First, we know from Professor Mare's detailed explanation of how the process works

¹⁷ Twenty-one percent of the parents of Hispanics had not attended high school and another 12% had not completed high school. The comparable figures for the parents of African-American applicants are 1% and 3% respectively. In addition 61% of the Hispanic applicants had incomes below \$60,000 compared to 48% of African-American applicants.

¹⁸ We know Professor Sander examined at least one other model because he references a result from this model in his report. See the discussion *infra* at note 24.

that it is a process that proceeds through stages. Professor Sander's model fails to capture this essential element. Second, we know that the effects of variables like GPA and SAT scores are not uniform throughout their entire range. Professor Sander's models do not account for this. Finally, we know that Professor Sander's models do not include numbers of apparently consequential variables (e.g. gender, ELC status, AP scores). This is yet another reason to conclude that his models are seriously misspecified. In short, this portion of Professor Sander's analysis cannot reliably support any conclusions about how UCLA's holistic admissions system has worked with respect to the consideration of race or ethnicity.

Table 8

Professor Sander's last Table shows that for applicants with holistic scores of 2.75, 3 and 3.5 admissions rates are noticeably higher for African-Americans than they are for those of other backgrounds.¹⁹ Of all the data that Professor Sander presents, these data strike me as the most consistent with his hypothesis that UCLA's African-American applicants enjoy an admissions advantage because of their race.²⁰ However, a serious difficulty stands in the way of this conclusion. The data in this table do not distinguish between admission rates at different stages in the admissions process. For example, Professor Mare reports that in 2008 UCLA's College of Letters and Science admitted 207 athletes. Extrapolating to the three year period Professor Sander is considering and one has a total of about 621 athletic admissions. I would presume that African-Americans are disproportionately represented among those admitted because of their athletic prowess. If the number of admitted African-American athletes is numerically large this could substantially distort the figures Professor Sander presents because across the three post-heuristic years in Professor Sander's sample there are only 536 African-American admittees with heuristic scores of 2.75 and above.²¹

Even more telling is the inconsistency between the results Professor Sander reports and results Professor Mare found but did not include in his draft report.²² If there is any stage of the admissions process where one would expect attention to race to play a role, it is during supplementary review. Review at this stage is conducted by admissions officers, and more information, presumably including information that might reveal an applicant's race, is available at this stage than at any of the earlier stages of UCLA's admissions process. Yet Professor Mare found that in both 2007 and 2008 only 5 African American students with heuristic scores of 2.75 and above were admitted to the College of Letters and Science following supplementary review.²³ In terms of proportions

¹⁹ Professor Sander chooses to highlight those holistic scores where African-American admissions rates are at least 10% higher than those of any other ethnic group. A heuristic score of 4 is only other score for which where African-American admissions rates are higher than the admission rates for all other groups. According to Professor Sander's table, 6% of all African-American with heuristic scores of 4 were admitted to UCLA which is higher than the rates for other ethnic categories by at least 2%.

²⁰ I presume there is a reason for the discrepancy between the number of African-Americans who are identified as admitted in this Table (1216) and the number reported as admitted in Professor Sander's Table 6 (1157) and so do not draw any implications from the difference, although I would have appreciated some clarification.

²¹ My hunch is that athletic admissions represent a high proportion of UCLA's 74 African American admittees with heuristic scores above 4.0, but I have no good intuition regarding the number of athletes that may be found among the group with heuristic scores in the 2.75 - 4.0 range.

²² These tables and Professor Mare's interpretation of what they are in the Appendix to this report.

²³ These numbers are consistent with the speculation that athletic admissions distort the picture that Professor Sander presents in his Table 8. Students with higher heuristic scores are unlikely to be admitted in regular or final review. If there are nonetheless reasons why they should be considered, one would expect them to be referred to supplementary review. But this is not the expectation for athletes who are admitted outside of the ordinary review process.

admitted, controlling for heuristic scores one cannot distinguish between African Americans and members of other ethnic groups.

Consistency with the Mare Report

Professor Sander attempts to strengthen his argument by claiming that his results are bolstered by the findings of Professor Mare's more adequate study, a study whose many virtues Professor Sander recognizes. Professor Sander is correct when he asserts that Professor Mare's finding that his model cannot explain the admissions success of about a third of UCLA's African-American admittees is consistent with the possibility that in contravention of California's Proposition 209 race played a role in UCLA admission decisions. But as Professor Mare takes pains to point out, this finding by no means proves this. It is equally consistent with the possibility that the differences are explained by variables not included in his model or by other plausible but in fact mistaken model assumptions. Moreover even if, contrary to fact, the conclusion that race affected admissions decisions was the only plausible possibility, this would not mean that an *intent* to benefit African-Americans was ever a part of an admissions calculus.

Furthermore in assessing the plausibility of an hypothesis like the one Professor Sander has advanced, it is important to consider evidence against that hypothesis. Professor Mare's data on admissions rates in supplemental review broken down by ethnicity and discussed above are relevant here. Also relevant is Professor Sander's Table 6 which indicates that 19% of post-heuristic African-American applicants with index scores in the top decile and 33% of applicants with index scores in the second to top decile were not admitted. If there were an intent to favor African-Americans in the admissions process because of their race, applicants in these groups should be specially favored, not only because of their apparent academic ability but also because it would be especially difficult to show they had been favored because of their race, given the admission of many whites, Asians and others with apparently inferior academic credentials.²⁴

²⁴ Professor Sander would attribute the failure to prefer best-credentialed African-Americans to lack of information about their race. Nothing except the assumption that UCLA's admissions officers do discriminate justifies the assumption that when UCLA fails to admit an African American student with very strong academic credentials it is because the school was unaware of the student's race but when they do admit an African American student with weaker credentials it is because they were aware of and were attending to the student's race. In fact, a failure to admit the best academically credentialed students is consistent with an admissions system that seeks to look at variables in addition to test scores and GPAs in deciding whom to admit and assesses these other characteristics on a color blind basis. Moreover, in no ethnic group do index credentials in the top 10% guarantee admissions. Indeed, the post-holistic admissions probabilities for students with top 10% Sander index scores falls in the narrow range of 80-82% for the three ethnic groups that Professor Sander's Tables 4-6 separately treat. The spread in the pre-holistic period was somewhat broader (85-91%) and the probability of admission in each group was greater. The drop in admissions probability within this decile is what one would expect if the holistic system was working as intended.

Professor Sander tries to further bolster this theory by referencing a regression model not otherwise presented. He tells us that in this model, after controlling for the interaction of holistic scores and African-American the interaction between involvement in a UCLA outreach program and African-American is no longer significant. This, according to Professor Sander, "suggests that the attendance of African-American students at outreach sessions did not itself produce admissions." The model yielding these results, no doubt, has all the deficiencies of the logistic regression model Professor Sander does present. So, it is perhaps beating a dead horse to add that the interpretation Professor Sander places on his result suggests a fundamental misunderstanding of what lack of statistical significance means. All one can properly conclude when a relationship is insignificant is that the data do not allow us to reject the null hypothesis, which in this case is "being an African-American and attending an outreach session does not increase one's chances of being admitted to UCLA." Being an African-American and attending an outreach sessions may, despite what Professor Sander concludes, in fact increase an

Professor Mare's findings from his "Reread Study" are similarly inconsistent with the discrimination hypothesis. Professor Mare had UCLA admissions reviewers review and rate thousands of already decided applications. Among other questions he asked his readers was whether they could identify the ethnicity of those whose applications they read, a fact known to him along with the ethnicity of the reader. Not only did he find no evidence that a reader's ability to identify an applicant's ethnicity from the application affected the rating given, but he also found no reason to believe that a reader's ethnicity interacted with an applicant's ethnicity to affect the reader's holistic ratings. Thus even at a subconscious level it did not appear that African-American readers were more likely to rate African-Americans highly, Hispanic readers to rate Hispanic applicants higher, etc. One might expect to see some such effects if race was entering into admissions decisions.

Professor Sander's Conclusion and Mine

Professor Sander in his conclusion characterizes the results of his analyses thusly: "So far as discrimination can ever be shown through statistical analysis, it is shown here." By my reading and for the reasons given above, I see Professor Sander's assessment of his own work as far off the mark. I do not believe that he presents any data or arguments that either alone or together compel the conclusion that UCLA's holistic system discriminates based on applicant race. Indeed, I find little in this paper that stands up to close scrutiny.

Caveat: Professor Sander and I have a history together. I have been a responder to and critic of other work he has done, and on several occasions, including in testimony before the United States Civil Rights Commission, we have debated issues related to the empirical evidence on the effects of affirmative action and the weight to be given Professor Sander's contributions. I believe that I have reviewed Professor Sander's work in a professional fashion and that my judgments of what Professor Sander has and has not shown are not biased by my support for affirmative action. Still I would encourage those interested in the issues discussed to secure additional readings of Professor Sanders work and/or to secure a judgment about the accuracy and fairness of my comments from methodologically sophisticated social scientists who, unlike me, are not identified as supporters of affirmative action and who, like me, have no stake in how the situation at UCLA is judged.

applicant's chances of admission, but by social science convention one cannot with the requisite degree of confidence make this claim.

Appendix

Unpublished Mare Tables

Admission Rates by Supplemental Review Score and Ethnic Identity, UCLA College of Letters and Sciences, 2007 and 2008

The following two tables show the admission rates in Supplemental Review by race/ethnicity for 2007 and 2008. These tables are not in the report but I think they show that blacks do not have higher admission rates than other race/ethnic groups within categories of the Supplemental Review score. I think the relevant point here is that once applicants get assigned an SR score, the admissions decision for those with scores lower than 2.25 is completely deterministic. There are some applicants with scores above 2.25 who do get admitted through some tie-break procedure but the number of those people is small. (Robert Mare, November 7, 2012)

Table 13a. Percent Admitted by Supplementary Review Score, Ethnic Identity, College of Letters and Sciences, 2007 (N=2,723), number of students admitted in parentheses

SR Score	Ethnic Identity						Total
	Black	Latino	N Asian	S Asian	White	Other	
1	100 (8)	100 (17)	83 (5)	100 (3)	100 (6)	100 (1)	98%
1.5	100 (14)	100 (16)	100 (7)	100 (3)	100 (11)	100 (3)	100
2	100 (29)	100 (75)	100 (23)	100 (17)	100 (31)	100 (54)	100
2.25	100 (44)	100 (99)	100 (29)	100 (22)	100 (39)	100 (10)	100
2.5	17 (5)	36 (37)	30 (11)	35 (8)	18 (6)	24 (5)	29
2.75	0 (0)	0 (0)	15 (2)	4 (1)	0 (0)	0 (0)	2
3	5 (4)	0.3 (1)	1 (2)	5 (5)	1 (1)	0 (0)	2
3.5	3 (1)	1 (1)	0 (0)	0 (0)	0 (0)	9 (1)	1
4	0 (0)	0.3 (1)	1 (1)	0 (0)	2 (1)	0 (0)	0.5
4.5	0 (0)	0 (0)	0 (0)	0 (0)	--	0 (0)	
5	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	--	

Table 13b. Percent Admitted by Supplementary Review Score, Ethnic Identity, College of Letters and Sciences, 2008 (N=3,016), number of students admitted in parentheses

SR Score	Ethnic Identity						Total
	Black	Latino	N Asian	S Asian	White	Other	
1	100 (6)	100 (22)	100 (7)	100 (5)	100 (8)	100 (4)	100%
1.5	100 (33)	100 (86)	100 (16)	100 (19)	100 (24)	100 (6)	100
2	100 (36)	100 (106)	100 (22)	100 (21)	100 (40)	100 (16)	100
2.25	100 (49)	100 (113)	100 (28)	100 (27)	100 (28)	100 (9)	100
2.5	8 (3)	17 (12)	11 (5)	13 (4)	14 (5)	18 (2)	12
2.75	4 (1)	2 (3)	4 (2)	0 (0)	0 (0)	0 (0)	2
3	3 (2)	1 (3)	4 (4)	1 (1)	4 (4)	3 (1)	3
3.5	0 (0)	0 (0)	2 (1)	3 (1)	4 (2)	0 (0)	1
4	1 (1)	0 (0)	1 (1)	1 (1)	1 (1)	3 (1)	1
4.5	10 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2
5	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0