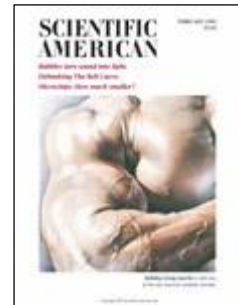


The Bell Curve: Intelligence and Class Structure in American Life
By Richard J. Herrnstein and Charles Murray. Free Press, 1994
Leon Kamin, *Scientific American*, vol. 272, n°2, February 1995

This book, with 400,000 copies in print just two months after its publication, has created an enormous stir. The authors unabashedly assert that scientific evidence demonstrates the existence of genetically based differences in intelligence among social classes and races. They maintain further that data from some 1,000 publications in the social and biological sciences show that attributes such as employment, income, welfare dependency, divorce and quality of parental behavior are determined by an individual's intelligence. These claims--an other eruption of the crude biological determinism that permeates the history of IQ testing--lead Herrnstein and Murray to a number of social policy recommendations. The policies would not be necessary, or humane, even if the cited evidence were valid. But the caliber of the data in "The Bell Curve" is, at many critical points, pathetic. Further, the authors repeatedly fail to distinguish between correlation and causation and thus draw many inappropriate conclusions.



AFRICAN SCHOOLCHILDREN live and learn under very different circumstances than do children in the West. But the claims made by the authors of The Bell Curve assume that a single test can measure "intelligence" in all cultures.

I will deal first with an especially troubling example of the quality of the data on which Herrnstein and Murray rely. They ask, "How do African-Americans compare with blacks in Africa on cognitive tests?" They reason that low African-American IQ scores might be the result either of a history of slavery and discrimination or of genetic factors. Herrnstein and Murray evidently assume that blacks reared in colonial Africa have not been subjected to

discrimination. In their view, if low IQ scores of African-Americans are a product of discrimination, rather than genes, black Africans should have higher IQs than African-Americans.

To answer the question they have posed, Herrnstein and Murray call on the authority of Richard Lynn of the University of Ulster in Ireland, described as "a leading scholar of racial and ethnic differences," from whose advice they have "benefited especially." They state that Lynn, who in 1991 reviewed 11 African IQ studies, "estimated the median black African IQ to be 75...about 10 points lower than the current figure for American blacks."

Herrnstein and Murray conclude that the "special circumstances" of African-Americans cannot explain their low average IQ relative to whites. That leaves genetics free to explain the black-white difference. But why do black Americans have higher scores than black Africans? Herrnstein and Murray, citing "Owen 1992," write that "the IQ of 'coloured' students in South Africa--of mixed racial background--has been found to be similar to that of American blacks." The implication is clear: the admixture of Caucasian and African genes, both in South Africa and in the U.S., boosts "coloured" IQ 10 points above that of native Africans. But the claims made regarding African and coloured IQs cannot withstand critical scrutiny.

Lynn's 1991 paper describes a 1989 publication by Ken Owen as "the best single study of the Negroid intelligence." The study compared white, Indian and black pupils on the Junior Aptitude Tests; no coloured pupils were included. The mean "Negroid" IQ in that study, according to Lynn, was 69. But Owen did not in fact assign IQs to any of the groups he tested; he merely reported test-score differences between groups, expressed in terms of standard deviation units. The IQ figure was concocted by Lynn out of those data. There is, as Owen made clear, no reason to suppose that low scores of blacks had much to do with genetics: "the knowledge of English of the majority of black testees was so poor that certain [of the] tests...proved to be virtually unusable." Further, the tests assumed that Zulu pupils were familiar with electrical appliances, microscopes and "Western type of ladies' accessories."

In 1992 Owen reported on a sample of coloured students that had been added to the groups he had tested earlier. The footnote in "The Bell Curve" seems to credit this report as proving that South African coloured students have an IQ "similar to that of American blacks," that is, about 85 (the actual reference does not appear in the book's bibliography). That statement does not correctly characterize Owen's work. The test used by Owen in 1992 was the "nonverbal" Raven's Progressive Matrices, which is thought to be less culturally biased than other IQ tests. He was able to compare the performance of coloured students with that of the whites, blacks and Indians in his 1989 study because the earlier set of pupils had taken the Progressive Matrices in addition to the Junior Aptitude Tests. The black pupils, recall, had poor knowledge of English, but Owen felt that the instructions for the Matrices "are so easy that they can be explained with gestures." Owen's 1992 paper again does not assign IQs to the pupils. Rather he gives the mean number of correct responses on the Progressive Matrices (out of a possible 60) for each group: 45 for whites, 42 for Indians, 37 for coloureds and 28 for blacks. The test's developer, John Raven, repeatedly insisted that results on the Progressive Matrices tests cannot be converted into IQs. Matrices scores, unlike IQs, are not symmetrical around their mean (no "bell curve" here). There is thus no meaningful way to convert an average of raw Matrices scores into an IQ, and no comparison with American black IQs is possible.

The remaining studies cited by Lynn, and accepted as valid by Herrnstein and Murray, tell us little about African intelligence but do tell us something about Lynn's scholarship. One of the 11 entries in Lynn's table of the intelligence of "pure Negroids" indicates that 1,011 Zambians who were given the Progressive Matrices had a lamentably low average IQ of 75. The source for this quantitative claim is given as "Pons 1974; Crawford-Nutt 1976." A. L. Pons did test 1,011 Zambian copper miners, whose average number of correct responses was 34. Pons reported on this work orally; his data were summarized in tabular form in a paper by D. H. Crawford-Nutt. Lynn took the Pons data from Crawford-Nutt's paper and converted the number of correct responses into a bogus average "IQ" of 75. Lynn chose to ignore the substance of Crawford-Nutt's paper, which reported that 228 black high school students in Soweto scored an average of 45 correct responses on the Matrices--HIGHER than the mean of 44 achieved by the same-age white sample on whom the test's norms had been established and well above the mean of Owen's coloured pupils. Seven of the 11 studies selected by Lynn for inclusion in his "Negroid" table reported only average Matrices scores, not IQs; the other studies used tests clearly dependent on cultural content. Lynn had earlier, in a 1978 paper, summarized six studies of African pupils, most using the Matrices. The arbitrary IQs concocted by Lynn for those studies ranged between 75 and 88, with a median of 84. Five of those six studies were omitted from Lynn's 1991 summary, by which time African IQ had, in his judgment, plummeted to 69. Lynn's distortions and misrepresentations of the data constitute a truly venomous racism, combined with scandalous disregard for scientific objectivity. Lynn is widely known among academics to be an associate editor of the racist journal "Mankind Quarterly" and a major recipient of financial support from the nativist, eugenically oriented Pioneer Fund. It is a matter of shame and disgrace that two eminent social scientists, fully aware of the sensitivity of the issues they address, take Lynn as their scientific tutor and uncritically accept his surveys of research.

I turn now to a revealing example of Herrnstein and Murray's tendency to ignore the difference between mere statistical associations (correlations) and cause-and-effect relationships. The authors lament that "private complaints about the incompetent affirmative-action hiree are much more common than scholarly examination of the issue." They then proceed to a scholarly and public discussion of "teacher competency examinations." They report that such exams have had "generally beneficial effects," presumably by weeding out incompetent affirmative-action hirees. That view of tests for teachers is not shared by those who argue that because blacks tend to get lower scores, the tests are a way of eliminating competent black teachers. But Herrnstein and Murray assure us that "teachers who score higher on the tests have greater success with their students." To support that statement, they cite a single study by two economists who analyzed data from a large number of North Carolina school districts. The researchers obtained average teacher test scores (a measure of "teacher quality") and pupil failure rates for each district. They reported that a "1% increase in teacher quality...is accompanied by a 5% decline in the...rate of failure of students"--that is, there were fewer student failures in districts where teachers had higher test scores. It does not follow from such a correlation, however, that hiring teachers with higher test scores will reduce the rate of student failure. The same researchers found, to their surprise, that "larger class size tends to lead to improved average [pupil] performance." Does it follow that increasing the pupil-to-teacher ratio would further improve student performance? That policy might please many taxpayers, just as firing teachers with lower test scores would please some. But neither policy derives logically from the observed correlations.

To understand why, consider the following. The average proportion of black students across the North Carolina school districts was 31 percent. Suppose--it does not stretch credulity--that black teachers (who have lower test scores) tend to work in districts with large proportions of black pupils (who have higher failure rates). Such nonrandom assignment of teachers would produce a correlation between teacher test scores and pupil failure rates, but one cannot then conclude that the teachers' test scores have any causal relation to student failure. To argue that, one would have to show that for a group of black teachers and for a separate group of white teachers, teachers' test scores predicted the failure rates of their students. No such information was available to the original researchers or to Herrnstein and Murray.

What about the finding that high pupil-to-teacher ratios are associated with good pupil performance? There is no way to be certain, but suppose deprived black children tended to be in small, de facto segregated rural schools, whereas more privileged whites were in larger classrooms. Would cramming more pupils into the rural schools promote academic excellence? There is an important and general lesson buried in this example: the arithmetical complexity of the multitude of correlations and logistic regressions stuffed into "The Bell Curve" does not elevate their status from mere associations to causes and effects.

The confusion between correlation and causation permeates the book's largest section, which consists of an interminable series of analyses of data taken from the National Longitudinal Survey of Labor Market Experience of Youth (NLSY). Those data, not surprisingly, indicate that there is an association within each race between IQ and socioeconomic status. Herrnstein and Murray labor mightily to show that low IQ is the cause of low socioeconomic status, and not vice versa. The argument is decked out in all the trappings of science--a veritable barrage of charts, graphs, tables, appendices and appeals to statistical techniques that are unknown to many readers. But on close examination, this scientific emperor is wearing no clothes.

The NLSY survey included more than 12,000 youngsters, who were aged 14 to 22 when the continuing study began in 1979. At that time the respondents or their parents gave information about their educations, occupations and incomes and answered questions about themselves. Those reports are the basis for classifying the childhood socioeconomic status of the respondents. The teenagers also took the Armed Forces Qualification Test, regarded by psychometricians as essentially an IQ test. As they have grown older, the respondents have provided more information about their own schooling, unemployment, poverty, marital status, childbearing, welfare dependency, criminality, parenting behavior and so on. Herrnstein and Murray pick over these data, trying to show that it is overwhelmingly IQ--not childhood or adult socioeconomic status--that determines worldly success and the moral praiseworthiness of one's social behaviors. But their dismissal of socioeconomic status rests ultimately on the self-reports of youngsters, which do not form an entirely firm basis.

I do not suggest that such self-reports are entirely unrelated to reality. We know from many sources that children from differing social class backgrounds do indeed differ in measured IQ. And in the NLSY study, after all, the respondents' self-reports are correlated with the objective facts of their IQ scores. But comparing the predictive value of those self-reports with that of test scores is playing with loaded dice. Further, the fact that self-reports are correlated with IQ scores is, like all correlations, ambiguous. For Herrnstein and Murray, the relation of their index of parental socioeconomic status to the child's IQ means that parents

of high status--the "cream floating on the surface of American society"--have transmitted high-quality genes to their offspring. But other interpretations are possible. Perhaps the kinds of people who get high test scores are precisely those who are vain enough to claim exaggerated social status for themselves. That tendency could artificially inflate correlations of IQ both with parental socioeconomic status and with self-reports of success, distorting all tests of the relative predictive power of socio-economic status and IQ. Such an explanation may seem far-fetched to some readers, but it is clearly a logical possibility. The choice between such alternative interpretations of statistical associations cannot be based on logic alone.

There is plenty of elbow room for ideological bias in social science. The core of the Herrnstein-Murray message is phrased with a beguiling simplicity: "Putting it all together, success and failure in the American economy, and all that goes with it, are increasingly a matter of the genes that people inherit." Income is a "family trait" because IQ, "a major predictor of income, passes on sufficiently from one generation to the next to constrain economic mobility." Those at the bottom of the economic heap were unlucky when the genes were passed out, and they will remain there. The correlations with which Herrnstein and Murray are obsessed are of course real: the children of day laborers are less likely than the children of stockbrokers to acquire fortunes or to go to college. They are more likely to be delinquent, to receive welfare, to have children outside of marriage, to be unemployed and to have low-birth-weight babies. The children of laborers have lower average IQs than do the children of brokers, and so IQ is also related to all these phenomena. Herrnstein and Murray's intent is to convince us that low IQ causes poverty and its attendant evils--not, as others hold, vice versa.

For eight dense chapters, the authors of "The Bell Curve" wrestle with data from the NLSY survey, attempting to disentangle the roles of IQ and of socioeconomic status. They employ a number of quantitative tools, most prominently logistic regression, a technique that purports to specify what would happen if one variable were "held constant" while another variable were left free to vary. When socioeconomic status is statistically held constant by Herrnstein and Murray, IQ remains related to all the phenomena described. When IQ is held constant, the effect of socioeconomic status is invariably reduced, usually substantially, and sometimes eliminated. There are a number of criticisms to be made regarding the ways in which Herrnstein and Murray analyze these data. But for argument's sake, let us suppose that their analyses are appropriate and accurate. We can also grant that, rightly or wrongly, disproportionate salaries and wealth accrue to those with high IQ scores.

What then do the Herrnstein-Murray analyses tell us? The socioeconomic status of one's parents cannot in any immediate sense "cause" one's IQ to be high or low. Family income obviously cannot directly determine a child's performance on an IQ test. But income and the other components of an index of socioeconomic status can serve as rough indicators of the rearing environment to which a child has been exposed. With exceptions, a child of a well-to-do broker is more likely to be exposed to book learning earlier and more intensively than is a child of a laborer. And extensive practice at reading and calculating does affect, very directly, one's IQ score. That is one plausible way of interpreting the statistical link between parental socioeconomic status and a child's IQ.

The significant question is not whether socioeconomic status, as defined by Herrnstein and Murray, is more or less statistically associated with success than is their measure of IQ. Different measures of socioeconomic status, or different IQ tests, might substantially affect

the results they obtained; other scholars, using other indices and tests, have in fact achieved quite different results. The significant question is, why don't the children of laborers acquire the skills that are tapped by IQ tests? Herrnstein and Murray answer that the children of the poor, like their laborer parents before them, have been born with poor genes. Armed with that conviction, the authors hail as "a great American success story" that after "controlling for IQ," ethnic and racial discrepancies in education, wages and so forth are "strikingly diminished." They reach this happy conclusion on the questionable basis of their regression analyses. But the data, even if true, allow another reading. We can view it as a tragic failure of American society that so few black and low-socioeconomic status children are lucky enough to be reared in environments that nurture the skills needed to obtain high IQ scores. For Herrnstein and Murray, it is only fair that the race should go to the swift, who are blessed with good genes and high IQs. The conception that our society hobbles most of the contestants at the starting line does not occur to them.

In the world of "The Bell Curve," the explanatory power of IQ is ubiquitous. The authors note that among blue-collar workers who tell researchers that they have dropped out of the labor force because of physical disability or injury, low IQ is common. Why? "An answer leaps to mind: The smarter you are, the less likely that you will have accidents." That answer leapt to mind before the thought that low-IQ workers, in minimum wage jobs, have little incentive to remain in the labor force. Dull young women lack the "foresight and intelligence" to understand that the welfare system offers them a bad deal. Welfare might be a bad deal for Herrnstein and Murray, but I am not so sure that single mothers on welfare have not figured out THEIR odds pretty accurately. People who have low IQs, according to "The Bell Curve," commit crimes because they lack foresight, and so the threat of prison does not deter them. Further, they cannot "understand why robbing someone is wrong." Then what is to be made of the fact that although "very dull" young males are stopped by the police, booked for an offense and convicted less often than "normal" males, they are nevertheless jailed more than twice as often? "It may be...that they are less competent in getting favorable treatment from the criminal justice system. The data give us no way to tell." Perhaps not, but some hints are available. There is no doubt that O. J. Simpson is "competent," but his ability to hire high-priced lawyers is not irrelevant to the treatment he will receive from the criminal justice system.

"The Bell Curve," near its closing tail, contains two chapters concerned with affirmative action, both in higher education and in the workplace. To read those chapters is to hear the second shoe drop. The rest of the book, I believe, was written merely as a prelude to its assault on affirmative action. The vigor of the attack is astonishing. Affirmative action "cannot survive public scrutiny." It is based on "the explicit assumption that ethnic groups do not differ in...abilities." Hiring and promotion procedures "that are truly fair...will produce...racial disparities," and "employers are using dual standards for black and white job applicants because someone or something...is making them do so." That behavior has resulted in the "degradation of intellectual requirements" in recruiting police, which has affected "police performance on the street." We learn that a veteran of the Washington, D.C., police force has heard "about people in the academy who could not read or write." And a former instructor saw "people diagnosed as borderline retarded graduate from the police academy." These anecdotes take their place among the politically potent folktales about welfare queens driving Cadillacs. At long last, Herrnstein and Murray let it all hang out: "Affirmative action, in education and the workplace alike, is leaking a poison into the

American soul." Having examined the American condition at the close of the 20th century, these two philosopher-kings conclude, "It is time for America once again to try living with inequality, as life is lived...." This kind of sentiment, I imagine, is what led "New York Times" columnist Bob Herbert to the conclusion that "The Bell Curve" "is just a genteel way of calling somebody a nigger." Herbert is right. The book has nothing to do with science.

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