

5. IQ AND HEREDITY: HISTORICAL AND CRITICAL REMARKS

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I want to talk about two separate matters. First, I shall talk about the history of intelligence testing in this country; and second, about some of the data that are used to support the argument that there is a highly heritable component to IQ test scores. From these I plan to draw two separate conclusions. The first ought not to surprise anybody. It is that in North America, at least, the intelligence test has been used more or less consciously as an instrument of oppression against the underprivileged, against the poor, against racial minorities, against the foreign born. The second conclusion many people may find more surprising, but I assert it just as confidently: if you look with a really critical eye at the evidence you will find nothing which would lead a reasonably prudent person to reject the hypothesis that the ratio of heritability of intelligence is zero. And I mean precisely that, nothing less and nothing more. Let me speak to each of these in turn.

First, the history of intelligence testing in this country, most of you know that the first usable intelligence test was devised by Alfred Binet in Paris in 1905. It is important to understand that what Binet was attempting to accomplish was absolutely first rate. He is not to be held responsible, in my view, for any of the things which happened since. Binet founded the test as a diagnostic instrument or be used to locate children whose intelligence was not developing properly. When such children were located, therapeutic intervention was called for to help their intelligence to develop. After he presented the test, Binet prescribed a course in "mental orthopedics" for children with low IQ test scores. The point of testing the child was to find if something was wrong and if it was to help the child. Binet spoke of "training of intelligence" and protested against the "brutal pessimism" of those who regarded the test as measuring some fixed unchangeable quantity.

That was Binet's point of view. I wish the same could be said about the American translators and importers of his test but unfortunately it can not. In 1904 work on the inheritance of intelligence was already going on in the United States. The first study of twins was published in 1904 by Edward L. Thorndike, Professor of Educational Psychology at Columbia. He administered various arithmetic and other tests to a set of one hundred twins in New York City and found they resembled one another in their performance. He explained the resemblance in the following language:

The facts are easily and simply and completely explained by one simple hypothesis: namely, that the nature of the germ cells—the conditions of conception—cause whatever similarities and differences exist in the original natures of men, that these conditions influence body and mind equally, and that in life the differences in modification of body and mind produced by such differences as obtain between the environments of present day New York public school children are slight (Thorndike 1904).

Having reached that conclusion, Thorndike went on to point out: "Similarly, the fact that Mr. Rockefeller has amassed one of the great fortunes of the age is undoubtedly due almost exclusively to his original capacity and not to circumstances. If it be true for example that the negro is by nature unintellectual and joyous, this does not imply that he may not be made more intelligent by wiser training or misanthropic and ugly tempered by the treatment he now receives. It does mean that we should be stupid to expect the same results from him that we should from an especially intellectual race and that he will stand with equanimity a degree of disdain which a Celt would requite with dynamite and arson." This is of course before the inner cities had been burned.

The original translators and importers of Binet's test were mainly three people: Lewis Terman at Stanford, Robert Yerkes at Harvard, and Henry Goddard in Vineland, New Jersey. They shared a basic set of political and social beliefs then widely current in the eugenics movement in the United States. I think I can make my point most clear if I read from some of their writings.

Lewis Terman, who published the Stanford-Binet translation of the test in 1916, after describing the poor performance of a couple of Portuguese and Indian children, wrote: "Their dullness seems to be racial, or at least inherent in the family stocks from which they come. The fact that one meets this type with such extraordinary frequency among Indians, Mexicans, and negroes suggests quite forcibly that the whole question of racial differences in mental traits will have to be taken up anew ... there will be discovered enormously significant racial differences .. which cannot be wiped out by any scheme of mental culture.

* "Children of this group should be segregated in special classes ... They cannot master abstractions, but they can often be made efficient workers ... There is no possibility at present of convincing society that they should not be allowed to reproduce ... they constitute a grave problem because of their unusually prolific breeding" (Terman 1916).

That is the father of the American mental testing movement Lewis Terman, of the Stanford-Binet test. Professor Terman, however, should not be thought of as a racist. His stern eugenical judgment fell even-handedly on poor people of all colors. Writing in 1917 under the heading "The Menace of Feeble-Mindedness," he declared, "...only recently have we begun to recognize how serious a menace it is to the social, economic, and moral welfare of the state...it is responsible...for the majority of cases of chronic and semi-chronic pauperism...organized charities...often contribute to the survival of individuals who would otherwise not be able to live and reproduce...If we must prevent, as far as possible the propagation of mental degenerates...the increasing spawn of degeneracy" (Terman 1917).

I think you can see what Binet had in mind when he talked about brutal pessimism. And you can see as well that Professor Shockley's voluntary sterilization plan has historical roots in the American mental testing movement.

The squandering of charitable moneys on the degenerate and undeserving poor had similarly caught the attention of Henry Goddard who in 1919 was invited to Princeton to deliver the Vanuxem lectures. The new science of "mental levels," he pointed out to his audience, had shown that you can measure the fixed mental levels not only of children but also of adults, that those levels had been fixed by heredity and could not be changed, and that important social consequences were to be drawn from this scientific demonstration. He pointed out that there were in his audience people who were embarrassed by the fact that they were wearing \$12.00 shoes, while the shoes of a common laborer cost only \$3.00. "But," he said, "the fact is, that workmen may have a ten year intelligence (that is, a mental age of 10) while you have a twenty. To demand for him such a home as you enjoy is as absurd as it would be to insist that every laborer should receive a graduate fellowship. How can there be such a thing as social equality with this wide range of mental capacity?..."

"...The man of intelligence has spent his money wisely, has saved until he has enough to provide for his needs in case of sickness, while the man of low intelligence, no matter how much money he would have earned, would have spent much of it foolishly...during the past year, the coal miners in certain parts of the country have earned more money than the operators and yet today when the mines shut down for a time, those people are the first to suffer. They did not save anything, although their whole life has taught them that mining is an irregular thing and that...they should save..." (Goddard 1920)

Remember that people like Arthur Jensen say that irresponsible left wing ideologues have dragged political and economic consideration into the sober scientific study of a scientific issue!

To be diagnosed as "feeble-minded" in those days was no light matter because fine discrimination were not being drawn between the criminal,

the poor, the insane, the dull and so on. In fact the public institutions to provide for such "degenerates" were in those days administered by a single functionary who's title quaintly enough was the "Commissioner of Charities and Corrections". Bothered by the eugenicists, many states during this period passed compulsory sterilization laws. The first such law passed in Indiana in 1907 and its preamble specified two points which were then incorporated in the laws of all other states. First, the law said as a legal fact that certain forms of degeneracy were transmitted through the genes. This was established not medically, not scientifically, but legally. Secondly, if you were afflicted with such a disorder, and being supported by a private family, well and good, but if you were in a taxpayer-supported institution, you were to be sterilized. "Heredity plays a most important part in the transmission of crime, idiocy, and imbecility." and then went on to prescribe compulsory sterilization for criminals, idiots, and imbeciles. To that list of genetically determined traits, the New Jersey legislature, ever in the forefront even in those days, added in 1911 "feeble-mindedness, epilepsy," and ominously "other defect." Iowa in 1913 spelled out some of the defects by providing for compulsory castration, not just sterilization, for, among others, "...lunatics, drunkards, drug fiends...moral and sexual perverts, and diseased and degenerate persons." All of whom had been made that way by the inferior genes that they had inherited from their parents.

It is obvious that the genetic interpretation of social class differences in intelligence test scores could serve to rationalize an existing social order. But the fact is that the compulsory sterilization laws were not generally enforced. However, they were enforced in California, in Delaware, and in Virginia with some frequency. Those who were sterilized were invariably poor and in those days not necessarily black. But the compulsory sterilization laws passed in a patriotic flurry of American enthusiasm, and for the most part remained dead letters on the books.

However the same thing cannot be said for what I would regard as the second major accomplishment of the American mental testing movement, that is its role in the passage in 1924 of an overtly racist immigration law. This is without question the most disgraceful episode in the history of American social science. Until recently it is a story that was not known to many people.

Before 1875, there was no federal immigration law whatsoever in the United States. There were a number of gentlemen's agreements and various administrative arrangements which kept out the peoples of Asia and Africa. But European immigration was unlimited. Then in 1912 the United States Public Health Service invited Henry Goddard to apply the new mental tests to arriving European immigrants. Most immigrants from Europe at that time passed through a receiving station in New York Harbor, namely Ellis Island.

Based upon his examination of what he called a representative "mass" of average immigrants, Henry Goddard was able to report that 83% of Jews, 80% of Hungarians, 79% of Italians, and 87% of Russians were "feeble-minded" (Goddard 1913). They had been shown to be so on the basis of the marvelous new mental tests translated and imported from Binet.

The significance of these findings was not lost on the membership of the Eugenics Research Association, which in those days was quite a powerful organization. The biologist Harry Laughlin, its secretary, was also the editor of its journal, Eugenical News. In 1917 he wrote under the heading "The New Immigration Law": "When the knowledge of the existence of this science, (that is mental testing) becomes generally known in Congress, that body will then be expected to apply the direct and logical test..." (Laughlin 1917).

Prior to 1890 most immigration to this country from Europe came from the British Isles, from Scandinavia, from northern and western Europe. Rising in a flood tide after 1890, great numbers of new and exotic ethnic groups, Poles, Russians, Jews, Italians, Hungarians, Greeks, started arriving. This upset descendants of previous immigrants. There was great concern about whether the quality of immigration was being kept up, or whether in fact the country might be inundated by an unassimilable mass of lower class Europeans. That is the background against which you have to understand Laughlin's statement. What he proposed was mental tests which can measure innate ability — fixed mental levels — could be used to pick out those immigrants who should be allowed to enter the country and to kick out those who should not.

Early in 1917 the United States entered the first world war. As it happened, the chairman of the Department of Psychology at Harvard at that time was Robert Yerkes. One of the original translators and importers of Binet's tests, Yerkes was also the president of the American Psychological Association and chairman of the Committee on the Inheritance of Mental Traits of the Eugenics Research Association. Yerkes suggested that the contribution psychologists could make to the war effort would be the mass mental testing of all draftees. He said, mental test scores could be used to decide who goes into the infantry, who goes into officers school, and so on. This was to be a big practical accomplishment of psychology. The military accepted the proposal and a group of psychologists and biologists were commissioned in the Sanitary Corp of the United States Army to administer mental tests to all draftees.

Testing was not in fact used to place men during the first world war. But for the first time in history literally a couple of million people took IQ tests. An enormous amount of data became available. And after the war, they were published under the sponsorship of the National Academy of Sciences in a volume edited by Yerkes. It is well known that World War I tests were the first large scale demonstration that, in the United States,

the average scores of black people were lower than those of white people. That came as no great surprise at the time. The findings that caused excitement had to do with the test scores of the foreign born.

Large numbers of people who had recently immigrated from Europe were drafted like everybody else. Psychologists had devised a marvelous scientific instrument called the Beta intelligence test, a performance test with square holes and round pegs and similar things that supposedly did not depend on language or culture and which therefore made it possible to measure the fixed mental levels of everybody including immigrants and illiterates. The test performance of immigrant draftees was analyzed by country of origin and ranked as follows:

England
Holland
Denmark
Scotland
Germany
Sweden
Canada
Belgium
White Draft
Norway
Austria
Ireland
Turkey
Greece
All Foreign Countries
Russia
Italy
Poland

At the top with the highest average IQ, is England, then Holland, Denmark, Scotland, and so on, and at the bottom Turkey, Greece, Russia, Italy, and at the very bottom, Poland. The point was explicitly made in the report that the average IQ of Poles did not differ significantly from the average IQ of American blacks.

— These data become generally known in Congress with the assistance of the membership of the Eugenics Research Association. If some among you who entertain a conspiracy theory of history, nothing I am about to tell you will cause you to change your mind. A lot of funny things happened in rapid succession. Yerkes, by now Colonel Yakes, took a job in Washington as head of the National Research Council Division of Anthropology and Psychology. At the same time, was a massive influx of the testing psychologists and testing biologists of World War I into the Eugenics

Research Association as members that he led. The secretary of the Association, Harry Laughlin, was appointed "Expert Eugenics Affairs Agent" of the House Committee on Immigration and Naturalization of the United States Congress. In 1923 the biological and psychological scientists of the Eugenics Research Association elected as their chairman not a scientist but a layman, the Honorable Albert Johnson, who coincidentally was the Congressman who chaired the same House Committee on Immigration and Naturalization. Meanwhile, under Yerkes' leadership, the National Research Council set up what it called a Committee on Scientific Problems of Human Migration. Suddenly there was an upsurge of scientific concern with the question of human migration.

The function of the National Research Council committee was to support scientific research on problems of human migration. The first research supported was that of a certain Carl Brigham, then Professor of Psychology at Princeton University. In 1923, Brigham published a book which is not cited very often now, but I think that in terms of its impact on the society in which we live it may have been the most important single piece of work ever produced by an American psychologist. The book, called A Study of American Intelligence, was published by Princeton University Press with a foreword by Yerkes stating that it was extremely relevant to the critical national question of immigration.

The unique contribution of Brigham's book was a re-analysis of the World War I test data on immigrants. Basically what he did was to carve the immigrant scores up in a new way. He divided the immigrants into five groups: those immigrants who had lived in the country twenty years or more by the time they were tested, those who had lived here fifteen to twenty years, ten to fifteen, five to ten, and zero to five. When he looked at the average IQs in this way he saw an astonishing thing. Those immigrants who had been in the country twenty years or more had average IQs every bit as high as those of native Americans. On the other hand those who had been here five years or less tended with alarming frequency to be "feeble-minded". To some people that might have suggested that the test scores had something to do with familiarity with this country or this language, or this culture, but not to Professor Brigham. He wrote, and I quote, "We must assume that we are measuring native born intelligence." We must assume so because the psychologists who translated (not invented) this test, assured us that it was designed to measure fixed, innate intelligence. If it measures fixed innate intelligence how can we explain Brigham's findings? Ah! said Professor Brigham, consider the race hypothesis. Let us assign to every European country the appropriate proportion of "Nordic" "Alpine" and "Mediterranean" "blood" — the three so called races of Europe. Then let us ask: twenty-five years ago from which countries of Europe were what proportion of the immigrants coming? And five years ago from which countries in Europe were what proportion of the

immigrants coming? Then let us multiply one proportion by the other, e.g. the proportion of "Alpine" blood in Poland times the proportion of Poles immigrating, and so on, to get a sequential picture over time of the composition of the immigrant blood-stream.

Professor Brigham discovered a truly remarkable "fact". The proportion of "Nordic" blood in the immigrants arriving in this country had been dropping steadily for twenty-five years. Since immigrants who had been here for only the past five years were "stupid" and those who had been here twenty-years were "smart", therefore, Brigham demonstrated, the "Nordics" are genetically superior to the peoples of southeastern Europe, the "Alpines" and the "Mediterraneans".

This is a nice example of the power of correlational analysis applied to intelligence test data. And it has contemporary relevance which you may be able to see. Professor Brigham was concerned, as all psychometricians at that time were and many still are, by the inevitable decline in average national intelligence. The problem as they saw it was this: intelligence is genetic; the lower classes breed like rabbits; Harvard and Radcliffe graduates don't even reproduce themselves. The consequence is that the average genetically determined IQ must slowly be dropping over time and we are heading towards a disaster. Professor Brigham concluded his study by saying, "The steps that should be taken...must of course be dictated by science and not by political expediency...And the revision of the immigration and naturalization laws will only afford a slight relief... The really important steps are those looking toward the prevention of the continued propagation of defective strains in the present population." What he is saying in his genteel language is that we better do something about the excessive reproduction of the people at the bottom of the chart.

You might think that this book was greeted with roars of protest from the academic world. It was not. It was glowingly reviewed in the Journal of Education Psychology and other places as the kind of serious contribution that an alert, responsible, concerned social scientist could contribute to the welfare of American society.

You might want to know what happened to Professor Brigham. With this contribution behind him he moved on, to the secretaryship of the College Entrance Examination Board where he devoted the rest of his life to the perfection of a test with which I think some of you are familiar. It was called the Scholastic Aptitude Test. And indeed, the library of the Educational Testing Service is the Carl Brigham Memorial Library.

The political usage of Brigham's book and of these data was immediate and intense. Let me give you the flavor of the kind of thing that was being said and done. Dr. Arthur Sweeney, testifying to the House in January 1923: "The fact that the immigrants are illiterate or unable to understand the English language is not an obstacle... 'Beta'...(that's the round hole square peg test) is entirely objective... We... strenuously object to

immigration from Italy...Russia...Poland...Greece...Turkey...The Slavic and Latin countries show a marked contrast in intelligence with the Western and northern European group...we shall degenerate to the level of the Slav and Latin races..."

Dr. Francis Kinnicut, testifying to the Senate in 1923: "The immigration from (Poland and Russia) consists largely of the Hebrew elements...some of their labor unions are among the most radical in the whole country...The recent Army tests show...these classes rank far below the average intelligence...See "A Study of American Intelligence" by Carl C. Brigham...Col. Robert M. Yerkes...vouches for this book, and he speaks in the highest terms of Prof. Carl C. Brigham...Col. Robert M. Yerkes.. vouches for this book, and he speaks in the highest terms of Prof. Carl C. Brigham, now assistant professor of psychology in Princeton University." And so one and so forth.

In 1924 Congress passed a new immigration law. For the first time it set a numerical limit on the number of immigrants permitted each year from Europe. But it did something more than that. It also established for a very long period as a part of American immigration policy the principle of "national origin quotas". Every European country was assigned an annual permissible quota of immigrants to be determined by the existing ethnic composition of the United States. The law was passed in 1924, but Congress demanded that the quotas be determined, not by the census of 1890. The purpose of the law, as its exponents freely admitted, was to use the 1890 census to debar, in so far as possible, the immigration of the genetic stock of southern and eastern Europe which had been demonstrated to be "defective" with the enthusiastic cooperation of the leadership of the American mental testing movement of the time.

That did change American society very substantially. But even the biological partitioning of the European land mass did not satisfy some of the more ardent intelligence testers. A gentleman named Nathaniel Hirsch, who had a National Research Council fellowship under McDougall at Harvard, wanted to tie down the genetic interpretation of test data by demonstrating that the native born children of the immigrants born in this country, exposed to American language and culture since birth, were as stupid as their parents. Hirsch asked for a grant to conduct a large scale school study in Massachusetts and other places, focusing on the first generation offspring of immigrants from Europe — children who had been born here. With one or two trivial exceptions he was able to "demonstrate" that children of immigrants were just as dumb as their parents. He then wrote in his report in Genetic Psychology Monographs, a learned journal, "That part of the law which has to do with the non-quota immigrants (i.e., from Canada and Latin America) should be modified...All mental testing upon children of Spanish-Mexican descent has shown that the average intelligence of this group is even lower than the average intelligence of the

Portuguese and Negro children...in this study. Yet Mexicans are flowing into the country....

"From Canada...we are getting...the less intelligent of working-class people...the increase in the number of French Canadians is alarming. Whole New England villages and towns are filled with them. The average intelligence of the French Canadian group in our data approaches the level of the average negro intelligence.

"I have seen gatherings of the foreign-born in which narrow and sloping foreheads were the rule...In every face there was something wrong - lips thick, mouth coarse...chin poorly formed...sugar-loaf heads...goose-bill noses... a set of skew-molds discarded by the Creator...Immigration officials...report vast troubles in extracting the truth from certain brunette nationalities" (Hirsch 1926). That was the voice of Genetic Psychology Monographs in 1926.

Today we can see how insane this was, how hideously ethnocentric, racist, and scientifically absurd. It is possible to believe that those kinds of ethnocentrism and racism have disappeared from American society, and that what now motivates our obsessive hunt for the meaning of IQ and its genetic basis has nothing to do with unconscious racism. It is equally possible to believe that they may not have disappeared from our society, and that there are certain historical connections between the antecedents of a field of study, and what is being done with it today.

So much for the background, now I would like to speak briefly about one of the most common forms of contemporary evidence for the heritability of intelligence — the studies of separated identical twins. Professor Taylor has also discussed the logic of the study of separated identical twins. Here are pairs of genetically identical individuals who, you are told, have been separated at birth and reared in different environments. If you give them IQ tests when they are of school age, and you compute the degree of resemblance in their IQ test scores, the correlation can vary between zero and one. If two twins have identical IQs, the correlation would be one. If there was no relation between one twin's IQ and the other, the correlation would be zero.

IQ CORRELATIONS FOR SEPARATED IDENTICAL (MZ) TWINS

<u>Study</u>	<u>Test</u>	<u>Correlation</u>
Burt	"Individual Test"	.86 (N=53)
Shields	Dominoes + (2 x Mill Hill)	.77 (N=37)
N, F, and H	Stanford Binet	.67 (N=19)
Juel-Nielsen	Wechsler	.62 (N=12)

Consider the four published studies of identical twins reared apart. In all of them there is a substantial correlation between twins. Taken at face value this would tell you that in at least the white population there does seem to be some substantial genetic basis to IQ test scores. Because, the argument runs, what do these twins have in common? Since they have been reared in widely separated environments, the only things they have in common are their genes and their IQs. Therefore, it must follow that their genes determine their IQs. Perfectly reasonably logical.

However, notice that the largest and most important of the studies was conducted in England by Sir Cyril Burt. It is important for several reasons. It happens to be based on the largest number of twins, 53 pairs. It also happens to report the largest correlation. But what makes it more important is the fact that Burt's is the only one of the four studies that purports to give data on an absolutely critical question. Was there correlation in the environments in which the separated twins were reared? Burt and Burt alone gave data on this. He said that he was able to measure the socioeconomic status of each of the 106 households involved. When he correlated the socioeconomic status of the house in which twins A were reared with that in which their twins B were reared, what do you think Burt found? It's quite literally unbelievable. He found there was no correlation whatsoever between the socioeconomic statuses of the households in which separated twins had been reared. Once you start to read Professor Burt, however, it becomes within five minutes clear that the man was liar and a fraud. Let me show you why it quickly became clear.

SIBLINGS REARED APART CORRELATIONS FROM BURT

	<u>1955 (N=131)</u>	<u>1966 (N=151)</u>
<u>Intelligence</u>		
Group Test	.441	.412
Individual Test	.463	.423
Final Assessment	.517	.438
<u>School Attainment</u>		
Reading, Spelling	.490	.490
Arithmetic	.563	.563
General	.526	.526
<u>Physical</u>		
Height	.536	.536
Weight	.427	.427

Sir Cyril Burt lived a long life. He was way into his 80s when he died. He kept on increasing his sample size as he got older, and every once in a while, when the spirit moved him he would burst into print with a new updated paper (Burt 1943, 1955, 1958, 1966; Burt and Howard 1956, 1957). For example, without ever telling which was the group test or which the individual intelligence test of intelligence used, he reported in 1955 that he had been able to study 131 pairs of siblings, that is ordinary brothers and or sisters, raised apart, he reported the results to the third decimal place. Most people do not bother with that kind of precision, but he was a meticulous man. He reported to the third decimal place the correlations in intelligence of those 131 pairs, as well as their correlations on tests of reading, spelling, arithmetic and so on. -By 1966 he was lucky enough to find 20 more pairs of siblings living apart, so he could report on 151. Notice that the correlations for intelligence have changed a little bit: but, a very funny thing, the reading and spelling correlations stay exactly the same to the third decimal place! The same is true for arithmetic, for general school attainment, for height, and for weight. Could that conceivably happen? It is more likely that the sun will not rise tomorrow.

You might think Burt was not particularly interested in school attainment or height and weight so that he just did not bother to recalculate those correlations. That cannot be, however, because look at his data for fraternal twins reared together reported in the same article.

FRATERNAL (DZ) TWINS REARED TOGETHER CORRELATIONS FROM BURT

	<u>1955 (N=172)</u>	<u>1966 (N=127)</u>
<u>Intelligence</u>		
Group Test	.542	.552
Individual Test	.526	.527
Final Assessment	.551	.453
<u>School Attainment</u>		
Reading, Spelling	.915	.919
Arithmetic	.748	.748
General	.831	.831
<u>Physical</u>		
Height	.472	.472
Weight	.586	.586

Between 1955 and 1966, 45 pairs in this series disappeared, and, as you see, there are some changes in the intelligence column, and in reading and spelling. But, incredibly, for arithmetic, general school attainment, height, and weight, the correlations remain exactly the same to the third

decimal! With these unnamed tests, given to unspecified samples at unspecified times, it makes no difference if you increase or decrease your sample size; you always get the same result to the third decimal.

The following figures are from Burt's great study of separated identical (MZ) twins. Burt first talked about separated twins in a 1943 paper in the British Journal of Educational Psychology. He reported that he had studied 15 pairs and that the correlation on an unnamed group test of intelligence was .77. He was modest and did not report the third decimal. By 1955 he added 6 more pairs and the correlation was .771. By early 1958 he had over 30 pairs and the correlation was .771. By early 1958 he had over 30 pairs and the correlation was .771. By early 1958 he had over 30 pairs and the correlation remained .771. Alas, by late 1958, when the sample ballooned to 42, there was a perceptible difference, .778; but do not fear, by the time Professor Burt got up to 53 pairs in 1966, it was back to .771. As you see,

"GROUP TEST" OF INTELLIGENCE CORRELATIONS FROM BURT

	<u>Identical (MZ) Twins</u> <u>Reared Apart</u>	<u>MZ Twins</u> <u>Reared Together</u>
1955	.771 (N=21)	.944 (N=83)
1958a	.771 (N="over 30")	.944 (N=?)
1958b	.778 (N=42)	.936 (N=?)
1966	.771 (N=53)	.944 (N=95)

This astonishing stability characterized not only Burt's work on identical twins reared apart, but also his work on identical twins reared together. You do not have to be a statistician to know that something is wrong.

Professor Jensen, a leading contemporary prophet of the position that blacks are generically inferior to whites, wrote that the most satisfactory attempt "to estimate the heritability of IQ was that of Sir Cyril Burt," (Jensen 1969) a born nobleman, "whose larger, more representative samples than any other investigator had ever assembled" would "secure Burt's place in the history of science" (Jensen 1972). Well Professor Burt does have a place in history of science but it is not the place that Professor Jensen had reserved for him. You did not need any access to Burt's papers or secret hidden writings or biography, you did not need to know whether his research assistant were real or not. All you had to do was read his papers with an open mind and the fraudulence of his data was all there laid out for you.

When I pointed out some of these things (Kamin 1974) it upset a number of people, not the least of whom was Professor Jensen. He wrote: "Professor Leon Kamin, who apparently spearheaded the attack, has been trying for several years now, in him many speeches and a book...to wholly discredit the large body of research on the genetics of human mental abilities. The desperate scorched-earth style of criticism against genetics that we have come to know on this debate has finally gone the limit, with charges of 'fraud' and 'fakery' now that Burt is no longer here to...take warranted legal action against such unfounded defamation." That is Arthur Jensen writing to the London Times in 1976.

Professor Eysenck in England defended Burt as "Britain's outstanding psychologist for many years, who had been knighted for his services to education, and who had achieved world fame for his contributions..." The allegations against Burt contain "a whiff of McCarthyism, of notorious smear campaigns, and of what used to be known as character assassination." (Eysenck 1977).

Leslie Hearnshaw, the British historian of psychology and an admirer of Burt, had delivered the eulogy at Burt's memorial service. Burt's sister commissioned Hearnshaw to write a biography of Burt and gave him access to Burt's private papers, diaries and so on. As Professor Hearnshaw carried out his work, word began to filter into the psychological community that unfortunately Professor Hearnshaw had come across a nasty mess and people began to change their tune. Professor Eysenck for example wrote: "On at least one occasion he invented, for the purpose of quoting it in one of his articles, a thesis by one of his students never in fact written; at the time I interpreted this as a sign of forgetfulness." That forgetfulness had been forgotten by Professor Eysenck when he attacked Burt's critics as McCarthyite character assassins. Eysenck continued, "whether we are dealing with carelessness or with wholesale faking cannot at the moment be established with certainty. That Burt behaved in a dishonest manner seems certain, the exact degree and kind of dishonesty is still doubtful" (Eysenck 1978).

Well it is no longer doubtful. It was not retail fakery it was wholesale fakery and there was no question about it. Professor Hearnshaw (1979), to his great pain, in a delicate and really rather moving biographical study was forced to come to a terribly painful conclusion, that the eminent Sir Cyril Burt was indeed a fraud and a liar. Yet earlier Professor Eysenck had written, "I think the whole affair is just a determined effort on the part of some very left wing environmentalists determined to play a political game with scientific data. I am sure the future will uphold the honor and integrity of Sir Cyril Burt without any question."

The other three studies of separated twins are honest. They were done by genuine scientists who are (from my point of view) idiotic enough to do this kind of research. They are honest but not very sensible. The

second largest study was done by Shields. It is long and complicated, but let me discuss one small aspect of it. Shields reports on 40 pairs of so called separated twins. He is so conscientious and scrupulous an examiner, that on those rare occasions when he was not able to administer the IQ tests himself to both members of the twin pair, he makes a note of that fact in the appendix. So the 40 pairs can be divided up into two sets: 35 pairs tested by Shields and five other pairs tested by two different psychologists. When Shields tested both twins of a pair, the IQ correlation was .83. But when two different psychologists tested the two twins, the correlation was .11. Despite the small size of that second sample those two correlations are significantly different. I think they show unconscious bias on the part of Shields.

It is well known in experimental psychology that experiments influence the behavior of rats in a maze. If you are watching a rat and you have a theory in mind and a stop watch in hand, you can click the watch at certain times, or you can whisper, "turn, turn, turn," which may affect what the rat does. Here you have a geneticist who deeply believes in the genetic determination of IQ, and he knows what twin A's IQ is, so when twin B is being tested, it is as if the tester is whispering, "Come on twin B, I've got my money on you." The most elementary methodological precaution of having the twins tested blindly by two separate examiners has not been undertaken in any of the reported studies of separated twins.

Furthermore, a close look at the twins reveals that most of them have not been meaningfully separated after all. How does it happen that identical twins get separated? It usually happens that identical twins get separated? It usually happens when they are born into very poor families, with lots of other kids. Two kids at one time are just too much for the mother, so she may keep one of them, and give the other to her mother or her sister to be reared, sometimes next door. These are called separated twins although they are reared in related branches of the same family, and are in contact with one another a great deal of the time.

In the Shields study, there were 27 pairs reared in related branches of the same family, and 13 pairs reared in unrelated families. The correlation in test scores is significantly higher for the twins reared in branches of the same family, .83 by comparison with .51 for those reared in unrelated families. Since the twins are genetic duplicates, differences between them cannot be genetic but must be environmental. What Shields' study shows is that genetically identical individuals do indeed tend to resemble one another a lot — if they are reared in related branches of the same family.

Do not, however, make the mistake of thinking that the lower correlation of .51 is an estimate of what you would get in a science fiction experiment if you took a bunch of twins at birth and sprinkled them at random over all the environments that exist in our society. Even in the 13 pairs reared in unrelated families, what usually happened was that the

mother kept one and gave the other to close family friends. In England just as it would be in New York City, that meant they were all reared in closely related environments. So you can see why I do not think the studies of so-called separated twins are very convincing.

Then there are adoption studies. Until fairly recently they used to report the correlation of IQ between a parent and a child within biological families and the correlation between adopted parent and adopted child in IQ within adoptive families. It was reported, perfectly correctly, that indeed, in the biological families, there was a closer resemblance in IQ between parent and child than in the adoptive families. It was argued that in the biological families the parents give the child both their environment and their genes, while in the adoptive families the parents give the child only their environment. Therefore, the genes seemed to influence the IQ resemblance between parents and child. A long technical problem with these studies boils down to the question of how well matched the two groups of families were. However, there are lots of families in this world where within the same family, there are both a biological and an adopted child. There are some parents who have children of their own but also adopt.

MOTHER-CHILD IQ CORRELATIONS IN ADOPTIVE FAMILIES CONTAINING BIOLOGICAL CHILDREN

	<u>Texas</u>	<u>Minnesota Transracial</u>
Mother x Biological Child	.20 (N=162)	.34 (N=100)
Mother x Adopted Child	.22 (N=151)	.29 (N=66)

Now one can use the same set of families. Every one is an adoptive family and all have been selected by adoption agencies as highly stable, emotionally secure, non-alcoholic, and so on. In families where there is at least one adopted child, and also at least one biological child, you can meaningfully compare the resemblance between parents and adopted children with that between parents and biological children. In 1974 I suggested this research design as better than that using different sets of families, and since then two such studies have been made. Moreover, they were not carried out by "left-wing environmentalists," but by prominent behavior geneticists: Horn, Loehlin and Willerman (1979) in Texas, and Scarr and Weinberg (1977) in Minnesota.

In the Texas study, the correlation between mother and biological child in IQ is .20. Between the same mother and the adopted child in the same set of families, the correlation .22. It is impossible to fit that result to a notion of high heritability of IQ, simply impossible. The correlations are low because of the restriction in the range of the families but there is

no way that you can square this with the assertion that IQ is .80 heritable in the white population.

In the Minnesota transracial study by Scarr and Weinberg the correlation is .34 between mother and biological child and .29 between mother and adopted child. Again, no significant difference. In that study, done in Minnesota in the late 60s, the mother was always white, the biological child always white, and the adopted child always black. So it not only means the genes within the white population do not make any difference, it is also clear that the genes across the two races do not make any difference.

SIBLING IQ CORRELATIONS IN ADOPTIVE FAMILIES CONTAINING BIOLOGICAL CHILDREN

	<u>Texas</u>	<u>Minnesota</u> <u>Transracial</u>
Biological-Biological Pairs	.35 (N=46)	.37 (N=75)
Adopted-Adopted Pairs	—	.49 (N=21)
Biological-Adopted Pairs	.29 (N=197)	.30 (N=134)

In the same set of studies, there are different kinds of sibling pairs. Sometimes there were two kids who were genetically related to each other; sometimes there were two adopted kids who were not genetically related to each other and there was always another type of non-genetically related pair, a biological kid and an adopted kid. Again in each of these studies, none of the correlations is significantly different from any of the others. It does not make any difference in this study whether you are biologically related to your sibling or you have both been reared in the same household. That is consistent with the mother-child data, and entirely inconsistent with the notion that IQ is inherited. So modern adoption studies are upsetting that consensus which Professor Jensen assures us has demonstrated for all time the heritability of IQ as .80.

You have all detected in my remarks a lack of sympathy with the approach of biometrical genetic analysis of IQ test scores is not to deny the relevance of biology to the social science of psychology, or the relevance of genes to behavior and cognition. That confusion has, I think, been deliberately encouraged. Criticism of the abuses of behavioral geneticists have been answered with claims that the critics — unlike the behavior geneticists themselves — are politically motivated and wish to deny any biological basis for human behavior. That debate is an old one in psychology and in society, and IQ is only one example. I could have talked about sociobiology, minimal brain dysfunction, schizophrenia, dyslexia, or psycho-surgery, and the terms of the debate, like the quality of the data, would not have been much different.

It is true, there are some of us, and I am one, who choose to emphasize our social nature. There are others who choose to emphasize our biological nature. But that division of emphasis in the long run is all to the good. What is intolerable is the false assertion that the hereditarians and the biologizers are more scientific and objective, and innocent of political motivation. Too often the appeal of psychologists to biological science has been nothing more than a symbolic clinging to the skirts of a make-believe biology. And far too often that make-believe biology has served to mask straight racism.

I conclude with a couple of examples. Together with his other duties as a school psychologist, Sir Cyril Burt supervised the eye examinations given to London school children. He noted that cases of hypermetropia, far-sightedness, were very rare among Jewish children. Most of the children instead were myopic. So Burt wrote as recently as 1961, "It is tempting to speculate whether the rarity of hypermetropia is itself the effect of a kind of natural selection. Before the invention of spectacles, the Jew whose living depended upon his ability to keep accounts and read them, would have been incapacitated by the age of fifty had he possessed the usual tendency to hypermetropia." Burt's astonishing ignorance, not only of European history but also of natural selection, betrayed by this kind of idiocy staggers the imagination.

Consider the sublime objectivity of biometrical genetics. It has never been phrased more movingly than by the great Karl Pearson. In 1925 Pearson founded a journal first called Annals of Human Genetics. In a foreward to the first issue of his journal, Pearson and Elderton (1925) "We have no axes to grind...We firmly believe we have no political, no religious, and no social prejudices...We rejoice in numbers and figures for their own sake and, subject to human fallibility, we collect our data — as all scientists must do — to find out the truth that is in them." One could weep. It is touching, it is beautiful. This is what science is all about. This is what my teacher told me in the first grade, and it sends shivers up and down my spine. But the impact of this beautiful credo is diminished when you flip the page and discover that the first article in this new journal, written by Pearson and Moul (1925) was entitled, "The Problem of Alien Immigration into Great Britain Illustrated by an Examination of Russian and Polish Jewish Children".

The examination was thorough. With 144 tables and 46 figures, in 127 pages, immigrant Jewish children were shown to be inferior to the native English in teeth, TB, tonsils, adenoids, heart disease, ear disease, eye disease, visual acuity, cleanliness of hair, cleanliness of body, cleanliness of underwear (Professor Pearson in a technique which is still in use today, engaged three Jewish ladies to rate the underwear so that charges of bias could not be hurled against him), conscientiousness, intelligence, and a tendency to breathe through their mouths. For such specimens, Pearson

wrote, "there should be no place...they will develop into a parasitic race...We know and admit that some of the children of these alien Jews from the academic standpoint have done brilliantly, whether they have the staying powers of the native race is another question. No breeder of cattle, however, would purchase an entire herd because he anticipated finding one or two fine specimens included in it." Pearson, recall, was a truly eminent scientist. He was important and productive and, doubtless in good conscience, declared himself to be an unprejudiced collector of numbers, a rejoicer in figures for their own sake, a seeker after truth. His type has not, I am afraid, disappeared from contemporary biological interpretation of the facts which may sound familiar.

"In the case of the Russian and Polish Jews there has been more or less continuous oppression. Nay a veritable selection...Such a treatment does not necessarily leave the best elements of a race surviving. It is likely indeed to weed out the mentally and physically fitter individuals, who alone may have had the courage to resist their oppressors." The natural selection idiocy again. Once there were good Jews, brave Jews, Jews with sparkling underwear. They rose up to oppose the Czar and were exterminated. Thus the genes for goodness, bravery and clean underwear have disappeared from the Jewish people and only those filthy dregs, clamoring to get into England are with us. This is called biological science. Well, the self-serving fraudulence of Pearson's pseudo-Darwinism should be clear to all.

Except to Burt's student Professor Eysenck. In 1971, his study at the University of London, that energetic collector of numbers, that admirer and zealot of biological science, summarized 500 years of American history in this language. "The more intelligent negroes would have contributed an undue proportion of 'uppity' slaves, as well as being much more likely to try and escape. The terrible fate of slaves falling into either of these categories is only too well known; white slavers wanted dull beasts of burden...Thus there is every reason to expect that the particular subsample of the negro race which is constituted of American negroes, has been selected throughout history according to criteria which put the highly intelligent at a disadvantage, creating a gene pool lacking some of the genes making for higher intelligence (Eysenck 1971).

The fraudulent, racist, nonscientific structure of this idiocy is obvious. All that has changed is the target, not the faulty logic or the bias.

FOOTNOTE

1. For a full discussion of this figure and the others that follow, see Kamin 1974.