

STEPHEN JAY GOULD'S *THE MISMEASURE OF MAN*¹

The first thing that a man will do for his ideals is lie.
(Joseph Schumpeter, *History of Economic Analysis*. Oxford University Press, 1954: page 43)

INTRODUCTION

There is no better illustration of the non-existence of arguments and evidence against the genetic determinism of intelligence and of racial differences in intelligence than Stephen Jay Gould's *The Mismeasure of Man* and no better illustration of the ignorance and bias of the press on this subject than its treatment of it.

Since its publication (by Penguin) in 1981,² *The Mismeasure of Man* has been the Bible of the opponents of genetic determinism of intelligence and one of the most frequently cited books on any topic in the social sciences.³ It has been translated into ten languages and received the Outstanding Book Award from the American Educational Research Association and the National Book Critics Circle Award. In 1995 two collections of articles attacking *The Bell Curve* were published: *The Bell Curve Debate*⁴ and *The Bell Curve Wars*.⁵ The first article in both is by Gould, and in both these articles Gould cited his book and repeats its arguments.

The reviews of *The Mismeasure of Man* in the popular press were uncritically adulatory. The reviews in scholarly journals, by experts, all of whom point out that it is a mosaic of blatant lies and gross misrepresentations.

The media's acclaim for *The Mismeasure of Man* stems not only from receptivity to its ideas but also from the eminence of its author. Gould was one of the world's most highly regarded paleo-biologists. He wrote more than twenty books and nearly a thousand articles. In 1999, he was elected president of the American Association for the Advancement of Science. He was a professor at Harvard for decades, where he taught a course entitled Biology as a Social Weapon, which consisted of attacks on genetic determinism. If genuine evidence or arguments against genetic determinism of intelligence and racial differences in intelligence existed, Gould would have known about them. In fact, if anyone would have been able to find or fabricate plausible lies, it would have been Gould. Instead, he was forced to rely on lies and distortions whose fraudulence is immediately obvious to everyone who is familiar with this subject.

The opponents of genetic determinism of intelligence and of racial differences in intelligence are entwined with each other and use the same lies. The most prominent after Gould is Leon Kamin, who is referred to several times in the following document and whose work was among Gould's sources. Other anti-hereditarians work with them or derive their arguments and evidence from them.

¹ I welcome correspondence on this or related subjects. I can be contacted at farron@ananzi.co.za.

² In 1996, W. W. Norton & Company of New York published an expanded and slightly revised edition, which I will discuss below.

³ In the annual volumes of the *Social Science Citation Index*, the numbers of citations of *The Mismeasure of Man* for the years 1982 to 1993 were 18 (1982), 32 (1983), 32 (1984), 49 (1985), 46 (1986), 48 (1987), 61 (1988), 51 (1989), 53 (1990), 62 (1991), 58 (1992), and 56 (1993).

⁴ Edited by Russell Jacoby and Naomi Glauberman. New York: Random House.

They dwell especially on Henry Goddard and other early testers of intelligence. Basic to Gould's and Kamin's attack on intelligence tests is their claim that these early testers argued that southern and eastern Europeans are less intelligent than north-western Europeans and that these arguments caused the American Immigration Act of 1924, which greatly curtailed southern and eastern European immigration. In fact, Gould dedicates *The Mismeasure of Man* "To the memory of Grammy and Papa Joe, who came, struggled, and prospered, Mr. Goddard notwithstanding." (Gould is Jewish.)

The next section of this document consists of reviews of *The Mismeasure of Man* in some of the most influential newspapers and magazines in the world. In the section that follows it, are reviews by experts in scholarly journals. Both sets of reviews are typical and could be multiplied many times.

The first review is from the *New York Times*, which is the most read newspaper among the people who shape American society (senators, corporate executives, etc.);⁶ and which has a profound influence on television news, which is the major source of news for most Americans.⁷

I have printed my own comments before the reviews to which they apply, or in footnotes, or between square brackets. Italics were in the original, unless otherwise noted.

Since the next two sections consist mostly of quotations of reviews, I put the reviews in normal margins and my preceding comments in indented margins.

REVIEWS IN THE POPULAR PRESS

NEW YORK TIMES BOOK REVIEW, November 1, 1981: page 11

"A Mind Is Not Described by Numbers," by June Goodfield

(In a footnote at the beginning of the review, the *Times* informed its readers about the reviewer: "June Goodfield's most recent books are *An Imagined World: A Story of Scientific Discovery* and *Reflections on Science and the Media*.")

"Some are, and must be, greater than the rest," wrote Alexander Pope in his "Essay on Man" (1733), and the "some" were clearly white European males. ... Over the centuries, biological determinism – the "belief that social and economic differences arise from inherited, inborn distinctions" – was used to construct a temple where political and social ideologies were worshiped. In "The Mismeasure of Man," his most significant book yet, Mr Gould grasps the supporting pillars of the temple in a lethal grip of historical scholarship and analysis – and brings the whole edifice crashing down. ... The core of the book is a historical account of man's attempts to measure intelligence. ... In detail, Mr Gould leads us through the work of ... H.H. Goddard, Lewis M. Terman and Robert M. Yerkes. ... "The Mismeasure of Man" demands a great deal from the reader. To understand the conceptual fallacy at the heart of the mathematical technique of factor analysis, which itself is a prerequisite for understanding the history of intelligence

⁵ Edited by Steven Fraser. New York: Basic Books.

⁶ S. Robert Lichter, Stanley Rothman, and Linda Lichter, *The Media Elite: America's New Powerbrokers*. New York: Hastings House, 1990: pages 11-12.

⁷ Bernard Goldberg, *Arrogance: Rescuing American from the Media Elite*. New York: Warner Books, 2003: pages 61-2, 66

testing, requires some very hard work indeed – even though Mr Gould attempts most valiantly to make his material accessible.

SATURDAY REVIEW, October 1981: page 74

This is a rare book – at once of great importance and wonderful to read. Gould ... takes up the gauntlet of biological determinism dropped yet again by Arthur Jensen in *Bias in Mental Testing*. Jensen argues a theory that, in Gould's words, "assumes that intelligence ... is a single, innate heritable, and measurable thing." ... Gould presents a fascinating historical study of scientific racism ... These reanalyses of data – coupled with a discussion of the flaws inherent in using factor analysis to make the *idea* of intelligence into a measurable *thing* – make this book a major addition to the scientific literature.

THE ATLANTIC, January 1982: pages 87-8

Mr Gould's well-written history of intelligence testing reveals ... that every such test ever devised has proved the superior intelligence of the tester's own race and class. The tale would be funny if one could overlook the misery that such tests have inflicted on generations of defenceless schoolchildren.

NEWSWEEK, November 9, 1981: page 106:

[T]his splendid new case study of biased science and its social abuse ...

TIME, October 6, 1986: page 63

"Nakasone's World-Class Blunder"

The excerpt below is not from a review. It is typical example of what the media tell the public on this subject and the authorities they cite. The italics have been added.

William Shockley, retired Stanford professor and Nobel prizewinner in physics, restated his controversial view: "I'm inclined to believe the major cause of the American Negro's intellectual and social deficits is hereditary and racially genetic in origin ... For Latins in this country, my conclusion is the same and almost as inescapable." A *majority* of academics ... however, have found such conclusions entirely escapable. They point out that ... [i]n the early 1900s Goddard insisted that on the basis of IQ scores vast numbers of Italian, Jewish and Russian immigrants were "high-grade defectives" or morons ... *The prevailing modern perspective* is expressed by Princeton Psychologist Leon Kamin, who says, "... We do not have the technology ... that would reveal any differences in the relationship of genotypes [genetic makeup] of intelligence." In fact, *most scholars today* believe that so-called intelligence and achievement differences stem largely from environmental factors. ... In his 1981 book *The Mismeasure of Man*, Harvard Biologist Stephen Jay Gould maintained ...

Below are excerpts from Sandra Scarr's presidential address to the Behavioral

Genetics Association in 1986, the same year as the *Time* article quoted above. It was published in *Behavioral Genetics* 17, 1987: pages 219-28, with the title "Three Cheers for Behavior Genetics."

Genetic variability in behavior ... inflamed public opinion from 1960 to the early 1980s. Then, the outcries stopped, with the exception of a few eccentrics, such as Leon Kamin, Richard Lewontin, Steven Jay Gould, and Stephen Rose, who have audiences among the lingering social radicals, left over from the 1970s. ...

My interest in the possibility of genetic behavioral differences began when, as an undergraduate, I was told there were none. ...

The lack of systematic environmental variability among adoptees led us to examine social-class effects. What difference does it make to be reared by a working-class or rural family, compared to a professional family, if one is genetically unrelated to one's parents? The answer is, "very little." To our amazement, the same social-class differences that appear in nearly every study appeared in ours among biological offspring but not among adoptees. Perhaps we were naive, but we were amazed to conclude that social-class differences in IQ are largely genetic and that young adults do not resemble their family members on anything but genetic grounds. ...

Today there is virtually no dispute among responsible scientists ...

THE EXPERTS' REVIEWS

PUBLIC INTEREST, Fall 1983: pages 41-59

"Neo-Lysekism, IQ, and the Press," by Bernard Davis,

(When he wrote this review, Davis was Adele Lehman Professor of Bacterial Physiology at Harvard

Medical School. Before that he was head of Harvard's Center for Human Genetics)

(The quotations below are from pages 46-54 of Davis' review.)

His [i.e., Gould's] most horrifying example is a primitive study conducted in 1912, in which H.H. Goddard administered intelligence tests to a number of Ellis Island immigrants. ... Probably nothing has so aroused antipathy to intelligence testing as his widely-cited findings that, for example, 83 percent of the Jews and 79 percent of the Italians he tested were "feeble-minded." Gould's interpretation of Goddard's findings is summarized as follows: "Could anyone be made to believe that four-fifths of any nation were morons?" But let us look at what Goddard actually wrote. The first sentence of his paper states that "this is not a study of immigrants in general but of six small highly selected groups," leaving out those at either end of the scale who were "obviously" either normal or feeble-minded (H.H. Goddard, "Mental Tests and the Immigrant," *Journal of Delinquency* 2 (1917): 243). ...

Psychologists generally agree that the greatest success of their field has been in intelligence testing - both practical, in estimating individual abilities, and theoretical, in exploring the cognitive functions of the human brain. ...

He [i.e., Gould] claims that general intelligence ... is merely a mathematical abstraction; hence if we consider it a measurable attribute we are reifying it, falsely converting an abstraction into an “entity” or a “thing” ... Here he has dug himself a deep hole. If this implication of localization is a fallacy for general intelligence, why is it not also a fallacy for specialized forms of intelligence, which Gould professes to accept? Going even further, he seems to abandon materialism altogether: “Once intelligence becomes an entity, standard procedures of science virtually dictate that a location and physical substrate be sought for it.” ... [T]his whole argument is fantastic. The scientist does not measure “material things.” He measures properties (such as length or mass), sometimes of a single “thing” (however defined), and sometimes of an organized collection of things, such as a machine, a biological organ, or an organism. In a particularly complex collection, the brain, some properties (i.e., specific functions) have been traced to narrowly-localized regions (such as the sensory or motor nuclei connected to particular parts of the body). Others, however, depend on connections between widely-separated regions. ... It is astonishing that a scientist with Gould's credentials, and with ready access to colleagues in the relevant fields, would present such a phony “discovery” as the fallacy of reification, and on the basis of truly antiquated views of neurobiology. ...

Gould's second “deep fallacy,” factoring, is statistical. Here he reconstructs an old controversy, which the field has long outgrown. ... To analyze Gould's unconvincing argument would be irrelevant. For in the end, after claiming to have disproved the correlations, he casually accepts them as self-evident: “The fact of pervasive positive correlation between mental tests must be one of the most unsurprising major discoveries in the history of science.” This is itself a very curious judgment. In fact, the correlation is not inevitable or self-evident, for the brain might have been so constructed that a strong endowment of cells for verbal skills would leave less room for cells concerned with numerical abilities, etc. Different cognitive abilities might then exhibit no correlation, or even a negative correlation, and psychologists would then have found no general intelligence to measure.

Gould's arguments about *g* [general intelligence] are irrelevant for another reason as well: Though he believes they support his aim of slaying the dragon of the heritability of intelligence, the assumed link to that problem does not exist. [Gould wrote] “The chimerical nature of *g* is the rotten core of Jensen's edifice, and the entire hereditarian school ... Spearman's *g*, and its attendant claim that intelligence is a single, measurable entity, provided the only theoretical justification that hereditarian theories of IQ have ever had.” This assertion is utterly false. *Whether an IQ test measures mostly general intelligence or mostly a collection of independent abilities, the heritability of whatever it measures will be precisely the same.* ...

AMERICAN JOURNAL OF PSYCHOLOGY 96, 1983: pages 407-415

By Lloyd Humphries

(Humphries was the editor-in-chief of the two most highly regarded psychological journals:

Psychological Bulletin (from 1964 to 1969) and *American Journal of Psychology* (from 1968 to 1979))

(The quotations below are from pages 409-11 of Humphries's review.)

The book may be described as part science fiction. It is more aptly called political propaganda. ...

Gould states that [a] ... basic flaw ... in the testing of intelligence [is] ... reification of the

construct. ... An early psychologist who did not commit the error was Godfrey Thomson. Thomson showed very early (1919) how Spearman's *g* could be produced by multiple determinants. Gould dismisses this important contribution with one of his cheap shots: "If the same mathematical pattern can yield such disparate interpretations, what claim can either have upon reality?" (page 269). This statement has no standing in the logic of science. ...

Gould's distortions are in both directions. Binet, the one good psychologist, has been recreated in Gould's image. ... The image dictated, however, that three cardinal principles be attributed to Binet: the test does not measure intelligence, it is not a device for ranking normal children, and it should not be used to mark children as innately incapable. All three attributions are false. ...

Terman is criticized at length. Gould describes a case report, in the 1916 manual, of a boy who had an IQ at first test of 75 at age 8 and of 73 three years later. The parents were well-educated and provided an excellent home environment. ... Terman's evaluation was that the boy would never be able to achieve at a normal level. Gould concludes: "He needed less than an hour to crush the hopes and belittle the efforts of struggling 'well-educated' parents afflicted with a child of IQ 75" (page 179). Yet the empirical probability that Terman was wrong in his prediction is less than 1%.

On the same page of the manual is the description of a girl that would have expanded the picture of Terman, and intelligence tests, if Gould had mentioned it. At nine the girl had an IQ of 125 and was in the fourth grade. Her parents were American Indian and Spanish-Irish. The family lived in abject poverty, the parents were ignorant, and two older brothers were dull. (They had been tested earlier.) Terman reported with great satisfaction that she subsequently skipped two grades and 5 years later was doing well academically in the second year of high school. According to Gould, biological determinists set limits on people and are biased against females, minorities, and the poor! ...

In reporting Terman's discussion of the contribution of native endowment to the correlation between intelligence and social status, Gould starts a sentence as follows: "Despite a poor correlation of .4 between social status and IQ..." (page 189). He does not inform his readers that this is close to the expected correlation between parent and child in intelligence if the heritability of intelligence were 1.00 [i.e., 100%].

NATURE, Vol. 296, April 8, 1982: page 506

"What Skulduggery?" by Steve Blinkhorn

(When he wrote this review, Blinkhorn was working at the Neuropsychology Laboratory of Stanford University.)

It is a masterpiece of propaganda ...

The final third of the book is the attempt proper to debunk the notion of general intelligence as arising specifically in the school of factor analysts ... starting with Spearman. By that stage the reader has been presented with ... a remarkably detailed account of antique methods of factor analysis.... The substantive discussion of the theory of intelligence stops at the stage it was in more than a quarter of a century ago. Consequently there is ... no indication that multivariate methods have progressed beyond Thurstonian techniques, no discussion of the effects of ageing, of brain damage, of compensatory programmes, no account of modern behavioural genetics, of heritability studies...

Gould even gives a perfectly straightforward account of what heritability would and would not mean in terms of the modifiability of intelligence, but fails to point out that such arch-hereditarians as Eysenck and Jensen have published essentially identical accounts. ...

Gould performs the remarkable trick of pulling the rug from under his own feet whilst appearing to stand stock still. ... [H]e propose[s] a totally unobjectionable definition of intelligence (“the ability to face problems in an unprogrammed ... manner”), which, far from being novel, is a nice rewording of a definition proposed by Cattell in the context of a heavily factor-analytic theory and something of a commonplace amongst the intellectual heirs of Spearman ...

The truth of the matter is that Gould has nothing to say which is both accurate and at issue.

CONTEMPORARY EDUCATION REVIEW 1982: pages 121-35

“The Debunking of Scientific Fossils and Straw Persons,” by Arthur Jensen

(It was Jensen’s work on genetic determinism of intelligence that began the modern debate on this issue, which led to Gould’s book. In his review, Jensen concentrated on Gould’s blatant misrepresentations of his views. I have printed below two of his examples.)

(At the end of Jensen’s review, the editor invited Gould to reply to it in a subsequent issue. Of course, Gould did not accept the invitation. He knew that he could not respond to criticisms of his book in a publication read by people who know something about the topic.)

Of all the book’s references ... only 29 percent are more recent than 1950. From the total literature spanning more than a century, the few “bad apples” have been handpicked most aptly to serve Gould’s purpose. ... In distant retrospect, the early history of every science often looks bizarre in some respects. ... Should we ridicule the early astronomers for claiming that the earth is the center of the universe? ...

I feel little inclined to comb the many archaic references to which most of Gould’s debunking depends ... [I will discuss instead] his references to my own work. Gould includes at least nine citations. ... [I]n these citations Gould purportedly paraphrases my views. In eight of the nine cases, Gould’s representation of these views is false, misleading, or grossly caricatured. ... While any author can occasionally make an inadvertent mistake in paraphrasing another, it appears Gould’s paraphrases are consistently slanted to serve his own message. Through hyperbole and caricature he converts real issues into straw persons, which can be easily disproved. ...

Gould claims that “Jensen recognizes that his hereditarian theory of IQ depends upon the validity of [Spearman’s] *g*” (page 265), and that “Jensen has demonstrated by example that a reified Spearman’s *g* is still the only promising justification for hereditarian theories of mean differences among human groups” (page 320). This is simply nonsense. Neither I nor anyone else in behavioral genetics has ever claimed or believed any such thing. ...

Gould claims that I have defended a *g*, or general intelligence, which is “reified as a measurable object” (page 318). Yet in the same chapter from which Gould is supposedly paraphrasing my views

(Jensen, 1980a [page 249]), I stated unequivocally that “intelligence is not an entity, but a theoretical construct.”

INTELLIGENCE 21, 1995: pages 121-134

“Reflections on Stephen Jay Gould’s *The Mismeasure of Man* (1981): A Retrospective Review,” by John B. Carroll

(I quote below Carroll’s observations on Gould’s treatment of factor analysis and of the work of Louis Thurstone. No one is as qualified to comment on these subjects as Carroll. Thurstone was the advisor for Carroll’s doctoral dissertation on factor analysis. Then, from 1949 to 1966, Carroll was a professor at Harvard. From 1974 until 1982, he was the director of the Thurstone Psychometric Laboratory at the University of North Carolina. His monumental *Human Cognitive Abilities: A Survey of Factor Analysis* has been universally regarded as the definitive study of factor analysis since its publication in 1993.)

Gould’s influence has come to the fore again in his recent review of Herrnstein and Murray’s *The Bell Curve*. ... It is indeed odd that Gould continues to place the burden of his critique on factor analysis, the nature and purpose of which ... he still fails to understand. ...

[On pages of 238-39 of the 1981 edition of *The Mismeasure of Man* Gould says about factor analysis] “virtually all its procedures arose as justifications for particular theories of intelligence. ... its persistent use as a device for learning about the physical structure of intelligence has been mired in deep conceptual errors ... The principal error, in fact, has involved a major theme of this book: reification.” First, it is not the case that “virtually all [factor-analytic] procedures arose as justifications for particular theories of intelligence.” ... Second, the wording “the physical structure of intelligence” is strange and misleading. Factor analysts ... do not regard it [intelligence] as a thing in any way. ... Third, and most importantly, factor analysis implies no “deep conceptual error” of “reification.” ...

The next major section of Gould’s chapter is devoted to the topic, “Correlations, cause, and factor analysis.” ... [I]t omitted mention of various techniques to circumvent the problems that Gould cited, and it actually misrepresented some of those problems. ...

He calls Thurstone “the exterminating angel of Spearman’s *g*” (page 296). ... Gould acknowledges Thurstone’s acceptance of a second-order *g*, but ... wrote: “... Second-order *g* is merely a fancier way of acknowledging what the raw correlation coefficients show – that nearly all correlation coefficients between mental tests are positive. (page 313).” This is a gross misrepresentation of Thurstone’s views and methods of thinking.

I do not use space critiquing Gould’s many assertions about Spearman, Burt, and Jensen, because they only further illustrate Gould’s many errors interpreting factor analysis. ...

Gould claims that Thurstone’s analysis permitted Burt and Spearman “at best a weak second-order *g*” (page 315). On the previous page, he had asserted that “Second-order *g* ... rarely accounts for more than a small percentage of the total information in a matrix of tests.” This is truly an egregious error on Gould’s

part.

THE END OF RACISM. New York: Free Press, 1995

By Dinesh D'Souza

The science of IQ testing has come under severe criticism ... The academic critics are few in number but formidable in polemical skill, with many allies in the media (page 445).

Within the community of social scientists, mainly psychologists, who study racial differences, there is now a virtual consensus about the existence of substantial IQ differences between Asians, whites, Hispanics and blacks (page 441).

Although he has been attacked in the popular media as biased and bigoted, Arthur Jensen's conclusion turns out to be true: "The small handful of dissenters who argue that genetic factors play no part in IQ differences are not unlike the few persons living today who claim that the earth is flat" [italics added] (page 452)

IQ critics such as Richard Lewontin, Steven Rose, and Leon Kamin have publicized horror stories in which students are asked to answer questions that are heavily loaded with cultural content. ... "What do IQ tests measure? They ask such things as: Who was Wilkins McCawber? What is the meaning of *studiferous*?" ... Such examples almost always rely on a small number of cases usually drawn from tests administered decades ago when psychological testing was in its very early stages. ... Contrary to Lewontin's claim, virtually no tests administered today require a familiarity with baseball teams or an acquaintance with Wilkins McCawber. Rather, they include such things as block designs, in which plastic blocks each with two red sides, two white sides and two red-and-white sides must be assembled into a given pattern. Tests also include mazes, in which young people are asked to track their way to the other end without running into a dead end. ... The Raven's [intelligence] test includes a series of designs printed on flat surfaces, and the problem is to detect uniform features running through [them] ...

Hundreds of studies of black and white performance have been conducted, and scholars have reached what appears to be a strong consensus: the tests are not biased against African Americans, who do no better on verbal questions than on mathematics questions, whose scores do not improve when tests move from high cultural content to little or no cultural content. Indeed black Americans do worse on IQ tests than Eskimos and immigrants from Far Eastern countries whose way of life is far more distant from white middle-class norms. ... In addition, as Stephen Jay Gould admits, IQ tests predict academic success equally well for blacks as for whites (pages 458-9)

Stephen Jay Gould has emphasized evolutionary theories that suggest that all human being are descended from common ancestor "Eve" who lived in Africa perhaps 100,000 years ago. Gould argues that such recent shared origins would not be likely to provide enough time for a "race gene" to develop. Indeed Gould triumphantly points out that "we have found no race genes" ... Others like Christopher Hitchens and Susan Sperling seem to rely on Gould in repeating this claim. But ... the "race gene" argument dethrones a straw man. There is no gene for race, just as there is no gene for brown eyes or blue eyes. None of the experts in IQ testing have ever claimed that there is a specific gene or even an identifiable group of genes

that produces the whole range of IQ differences. ... Even under the “Eve” scenario, there is no scientific reason why racial groups could not have evolved different frequency distributions of overlapping genes ... Gould’s race-gene rhetoric and similar arguments ... [are] calculated to deceive the ignorant (pages 467-8).⁸

AMERICAN PSYCHOLOGIST, September 1983, pages 986-95

“Intelligence Tests and the Immigration Act of 1924”

By Mark Snyderman, Harvard University

and R. J. Herrnstein, Harvard University

ABSTRACT: *It is often claimed that the racially biased Immigration Act of 1924 was passed with the help of the intelligence testing community of the period. The claim consists of two components: first, that the intelligence testing community saw its test data on social and ethnic differences as favoring a discriminatory immigration policy and, second, that Congress relied to some significant extent on the testing community and/or its data. An examination of the historical record failed to uncover any support for either component of the claim. The testing community did not generally view its findings as favoring restrictive immigration policies like those in the 1924 Act, and Congress took virtually no notice of intelligence testing.*

For critics of intelligence testing, nothing seems more devastating than Kamin’s (1974) characterization of H.H. Goddard’s (1917) assessment of newly arriving immigrants at Ellis Island: “83% of the Jews, 80% of the Hungarians, 79% of the Italians, and 87% of the Russians were ‘feeble-minded’.” ... [T]he prejudices of the [intelligence] testers are said to have been directly linked to the passage of the Immigration Act of 1924, a law commonly, and, in our opinion, aptly described as “nativist, racist, and

⁸ One of the main arguments that Gould and other opponents of genetic determinism of intelligence use is that there are no pure races. But no one who studies this subject thinks that there are pure races or that there is any causal connection between race and intelligence. There is not even a causal connection between species and intelligence. The average intelligence of each species rises and falls depending on whether its more or less intelligent members have more children. The present relative intelligence of races is the result of the relative birth rates of their more and less intelligent members in the past, and that factor will change their average intelligence in the future. The same factor has caused endogamous ethnic groups within these races to become more or less intelligent. The most striking example is Jews, who have by far the highest tested intelligence of any human group (Richard Herrnstein and Charles Murray, Charles, *The Bell Curve: Intelligence and Class in American Life*. 1994, New York: Free Press: 275; Miles Storfer, *Intelligence and Giftedness: The Contributions of Heredity and Early Environment*. San Francisco: Jossey-Bass, 1990: 314-23).

Animal breeding has always been based on this fact. For instance, in the mid-1940s a trainer of guide dogs for the blind named Clarence Pfaffenberger found that he could train only nine percent of the dogs that started his program to perform the complex and demanding tasks required of them. He developed a series of problem solving tests and bred the dogs that did well on them. By the end of the 1950s, he had bred dogs ninety percent of whom could be trained to guide the blind (Stanley Coren, *The Intelligence of Dogs*. New York: Bantam Books, 1994: 191-3). W. T. Heron and his colleagues at the University of Minnesota created maze-bright and maze-dumb strains of rats in four generations. They began with normal rats. They mated with each other those who made the fewest errors in mazes and those that made the most errors. The difference in the average number of errors between the two strains was 6.7 in the first generation; then 10.8, 19.6, and 27.7, in each succeeding generation (W. T. 1935: “The Inheritance of Maze Learning in Rats.” *Journal of Comparative Psychology* 19, 1935: 77-89).

mean.”⁹

In this article we will examine the factual basis of this argument. ... Let us start with Goddard’s (1917) assessment of immigrant intelligence. ... Kamin neglects to mention that Goddard preselected his sample of entering immigrants at Ellis Island in New York to eliminate both the “obviously feeble-minded” and the “obviously normal” (page 244). ... Goddard ... said explicitly that his study “makes no attempt to determine the percentage of feeble-minded among immigrants in general or even of the special groups named – the Jews, Hungarians, Italians, and Russians” ...

A more obviously biased work from the same period was by a Princeton University assistant professor, C. C. Brigham, whose book, *A Study of American Intelligence* (1923), examined the Army intelligence tests (Yerkes, 1921) as they related to immigrant populations. ... Brigham’s (1923) conclusions can be summarized briefly: (1) The Army mental tests do indeed measure innate intelligence; (2) the average scores for native-born draftees are higher than those of foreign born; (3) the average scores of immigrants from northern Europe are higher than those from southern and eastern Europe ... immigration should be restricted to those of Nordic stock.¹⁰ ... Brigham himself recanted in 1930. [T]he impression is often given that it [Brigham’s book] went virtually unchallenged following its publication in 1923. Kamin (1974), for example, suggested that *A Study of American Intelligence* was decisive at the time of the debate leading up to the Immigration Act of 1924 ... In fact ... Brigham’s book provoked substantial adverse commentary within the scientific literature ... most of it prior to the passage of the 1924 Immigration Act. ...¹¹

The Immigration Act of 1924

Gould (1981), for example, declared, “Congressional debates leading to the passage of the Immigration Restriction Act of 1924 continually invoke the army data [scores on intelligence tests administered during World War I]” (page 232). The Act imposed quotas on immigration [which] ... effectively excluded many immigrants from southern and eastern Europe ...

[T]he question for us is whether the empirical results of mental testing played any role on Capitol Hill, as recent commentators like Kamin and Gould have so insistently argued. An examination of the legislative record finds almost no support for their argument. We may begin with the Act itself, which in 32 sections makes no reference to intelligence tests, intelligence, feeble-mindedness, or any other related term. ... From Kamin’s (1974) book (and the many other works that draw on it) there seems no doubt that the results of mental tests played a large role in the passage of the Act ... Kamin (1976) ... quotes a statement in praise of the Army tests by Madison Grant to the Senate Committee on January 10, 1924. Unfortunately, neither we nor the staff of the Government Documents Division of the Harvard University Library have

⁹ Snyderman and Herrnstein quote articles from the *Atlantic* and *New Yorker* that repeat these claims about Goddard and the role of intelligence tests in the Immigration Act of 1924 as unquestionable truths.

¹⁰ Snyderman and Herrnstein’s summary is misleading. In the very same paragraph (page 190) of *A Study of American Intelligence* that begins with a statement that is invariably quoted, “Our figures would rather seem to disprove the popular belief that the Jew is highly intelligent,” Brigham proceeded to state that this conclusion is based on using Russian birthplace to mean Jew, that Russians’ IQ have an extraordinarily high standard deviation, which probably means that two groups (Jews and Gentiles) with very different average intelligence levels are being conflated and that “investigators searching for talent [i.e., high IQs] in New York City and California schools find a frequent occurrence among Jewish children.”

¹¹ Snyderman and Herrnstein devote three pages to quoting severe criticisms of Brigham’s book that were made by the experts on intelligence tests at the time..

been able to find any record of a Senate Immigration Committee hearing on that date, or any evidence that Madison Grant made a statement before the Senate Committee at any time. ... Kamin (1974) cites three ... documents ... In each case the document was placed into the record with minimal introduction, and in no case could we find any mention of the documents or their contents anywhere else in the committee hearings or in the floor debates. ...

On February 20, 1923, Francis Kinnicutt, chairman of the Immigration Restriction League, Inc., testified before the Senate Committee on Immigration, arguing for the further restriction of immigration from southern and eastern Europe. He drew much support from *A Study of American Intelligence* (Brigham, 1923) ... Kamin (1974) quotes a passage from Kinnicutt's speech, and notes that Senator LeBaron Colt, the chair of the committee and a major proponent of the Immigration Act, thanked Kinnicutt for sending a copy of the book. In addition, as Kamin quoted him, Colt asserted, "I think every member of the committee ought to read that book and then arrive at his own judgment in regard to it." The impression given, that Colt was much impressed with Brigham's conclusions, is belied by a more complete examination of the exchange between the Senator and Mr Kinnicutt ...

The Chairman (Senator Colt): The highest products of the human intellect were produced by a little band of Athenians, several centuries BC, the age of Pericles; they were not Nordic; they were of Mediterranean stock, or a mixture of Mediterranean and Nordic. I turn to Rome, that built up the greatest empire in all the world, which lasted for 1,200 years, and I find they were the Mediterranean race.

Now, you can not say, as a practical man, that we must take this analysis of Army tests, of small things – and I admit it is a very able book, but we can not take them as a real test. Did you give the title of the book?

Mr Kinnicutt. Yes; it is *A Study of American Intelligence*.

Mr Chairman. And you will leave the book with us?

Mr Kinnicutt. Yes, if you wish.

The Chairman. I want to thank you for sending me a copy of it.

The final piece of evidence cited by Kamin (1974) is a report entitled "Europe as an Emigrant-Exporting Continent and the United States as an Immigrant-Receiving Nation" submitted by Harry H. Laughlin, a biologist on the staff of the Carnegie Institution, to the House Committee on Immigration and Naturalization on March 8, 1924. Kamin (1974) says that "Professor Brigham's tables, and those published by the National Academy of Sciences, figured prominently" (page 25) in Laughlin's report. In fact, intelligence was discussed in a six-page section, "Natural Intelligence," of the 206-page report. ... [N]o comment was made in committee following Laughlin's statements on the intelligence of the immigrant, and they were never brought up again in committee. ...

If intelligence testing was of little importance in committee hearings, it played an even smaller role in floor debate. ...

Summarizing our examination of the *Congressional Record* and committee hearings: There is no mention of intelligence testing in the Act; test results on immigrants appear only briefly in the committee hearings and are then largely ignored or criticized, and they are brought up only once in over 600 pages of congressional floor debate, where they are subjected to further criticism without rejoinder. None of the major contemporary figures in testing – H. H. Goddard, Lewis Terman, Robert Yerkes, E. L. Thorndike, and so on - were called to testify, nor were any of their writings inserted into the legislative record.

GODDARD, THE IMMIGRATION ACT OF 1924, AND ITS PARALLEL

Nearly every book on intelligence testing points out, often at length, that there is no basis for the accusation that H. H. Goddard thought that most southern and eastern Europeans were feeble-minded.¹² In fact, every intelligence tester has always concluded that Jews and Orientals are more intelligent than white Gentiles. In 1927, when Goddard was a professor at Ohio State University, he supervised a Master's thesis entitled "The Intelligence of Jews Compared with Non-Jews" by Irma Cohen, which was published by Ohio State University Press. It reported the results of an intelligence test administered to students at Ohio State. In his introduction, Goddard said that it proved that Jews are more intelligent than Gentiles and this conclusion was substantiated by the constant persecution of the Jews, "for we are seldom jealous of our inferiors."

Goddard's assessment of anti-Semitism was accurate. No anti-Semite has ever thought that Jews are stupid. It is the intelligence of Jews that causes anti-Semitism. In the Congressional debate over the Immigration Act of 1924, only one Congressman mentioned Jews. That was Representative Wefald, who complained, "The leadership of our intellectual life in many of its phases has come into the hands of these clever newcomers" (*Congressional Record*, April 12, 1924, 6272).¹³

Nevertheless, the media continue to repeat the Kamin-Gould accusation against Goddard and other early intelligence testers as if it were an uncontested fact. For instance, the *New York Times* of October 28, 1994 informed its readers, "Goddard's testing of what he called a representative sample of immigrants showed that 80 percent of all Jews, Italians, and Hungarians and nearly 90 percent of Russians were 'feeble-minded'." The *New York Times* article that contains this statement was reprinted on pages 293-95 of *The Bell Curve Debate*,¹⁴ which was published in 1995. In my introduction, I mentioned that that is a collection of anti-*Bell Curve* articles, the first of which is by Gould. It also contains, on pages 476-509, the chapter of Leon Kamin's book *The Science and Politics of IQ* (1974) that was the source of later accusations against Goddard and the influence of early intelligence tests on immigration policy; even though knowledgeable reviewers of Kamin's and Gould's books have repeatedly demonstrated that these accusations are nonsense, beginning in 1975 with Franz Samelson's review of *The Science and Politics of IQ* in *Social Research* 42, pages 467-88. (In his reply to Samelson in the same journal (pages 488-92) Kamin conceded, "a racist immigration law would have been passed in 1924 had no IQ tester ever been born.") This chapter by Kamin in *The Bell Curve Debate* is part of a section of 157 pages on early intelligence tests. It does not contain a hint that any dispute exists about the veracity of anything Kamin or Gould said on this subject.

¹² For example, Daniel Seligman, *A Question of Intelligence: The IQ Debate in America*. New York: Carol Publishing Group: pages 128-30.

¹³ Similarly, in an article in *The Journal of Educational Psychology* of September 1926 (pages 361-7), entitled "Intelligence of Chinese and Japanese Children," Peter Sandiford and Ruby Kerr reported that intelligence tests administered in the public schools of Vancouver, in the province of British Columbia in Canada, where "a large number of Oriental immigrants reside," found,

Japanese are the most intelligent racial group resident in British Columbia with Chinese ... second. ... [F]rom the political and economic standpoints the presence of an industrious, clever and frugal alien group, capable (as far as mentality is concerned) of competing successfully with native whites ... constitutes a problem which calls for the highest quality of statesmanship to be solved satisfactorily.

¹⁴ Edited by Russell Jacoby and Naomi Glauberman. New York: Random House.

In *The Mismeasure of Man*, Gould also put considerable emphasis on what he described as the British equivalent of the American Immigration Act of 1924. On pages 322-26 (of the 1996 edition) Gould wrote,

If the Immigration Restriction Act of 1924 signalled the chief victory of American hereditarians in psychology, then the so-called examination at 11+ awarded their British counterparts a triumph of equal impact. Under this system for streaming children into different secondary schools, pupils took an extensive examination at age ten or eleven. As a result of these tests, [which were] largely an attempt to assess Spearman's *g* for each child, 20 percent were sent to "grammar" schools where they might prepare for entry to a university, while 80 percent were relegated to technical or "secondary modern" schools and regarded as unfit for higher education. ...

The 11+ examination was an embodiment of Spearman's hierarchic theory of intelligence, with its innate general factor [i.e., *g*] pervading all cognitive activity.

...

[T]he major effect of the 11+, in terms of human lives and hopes, surely lay with its primary numerical result – 80 percent branded as unfit for higher education by reason of low innate intellectual ability. ... [Gould provides one example:] a friend who had failed 11+ but reached the university anyway because she had learned Latin on her own, when her secondary modern school did not teach it and universities still required it for entrance into certain courses (how many other working-class teenagers would have had the means and motivation, whatever their talents and desires?)

So, according to Gould, just as the belief in a genetically determined, factor-analyzed *g* kept southern and eastern Europeans out of the United States, it kept working-class children out of British academic education. However, it has been well known since the 1950s that "When the local authority dropped IQ tests from its 11+ exams, there was an immediate and significant decrease in the proportion children from working-class families entering [academic] grammar schools, and a comparable increase in the proportion of children from professional families."¹⁵ For that reason, conservatives opposed the incorporation of IQ tests into the 11+ examinations:

T. S. Eliot argued that an educational system that sorts people according to their native capacities would disorganise society and debase education, breaking the bonds of class and tradition and creating a society of mobile, atomized individuals. Edward Welbourne, a particularly crusty Cambridge don, was even more direct: confronted with the news that a student was interested in I.Q. tests, he snorted, "Huh, Devices invented by Jews for the advancement of Jews."¹⁶

THE SECOND EDITION OF THE MISMEASURE OF MAN

When Kamin's and Gould's books appeared, everyone familiar with this subject could see that their arguments were based on misrepresentations and outright lies. In the time that has elapsed since their publication, huge amounts of irrefutable evidence of all sorts have been added to the already unassailable evidence that intelligence is primarily genetically determined. Nathan Brody concluded the chapter entitled

¹⁵ N. J. Mackintosh, *IQ and Human Intelligence*. New York: Oxford University Press, 1998: page 24. Gould here, as often, drew on Leon Kamin (*Intelligence: the Battle for the Mind*: page 94).

¹⁶ A. Wooldridge, "Bell Curve Liberals." *New Republic*, February 27, 1955: page 22 ff.

“Behavioral Genetics and Intelligence” of his standard textbook *Intelligence* with the observation:¹⁷

In 1974 Kamin wrote a book suggesting that there is little or no evidence that intelligence was a heritable trait ... [H]e was able to maintain this position by a distorted and convoluted approach to the literature. It is inconceivable to me that any responsible scholar could write a book taking that position in 1990. In several respects our understanding of the behavior genetics of intelligence has been significantly enhanced in the last 15 years. We have new data on separated twins, large new data sets on twins reared together, better adoption studies, the emergence of developmental behavior genetics and longitudinal data sets ... and the development of new sophisticated methods of analysis of behavior genetic data.

But Brody underestimated the shamelessness of the opponents of genetic determinism. In 1996 Gould reissued *The Mismeasure of Man*. He expanded the original edition with a 31-page introduction (pages 19-50 of the reissue) and five new chapters at the end. The first is one of his already published reviews of *The Bell Curve*; the next three are about pre-modern racial theories and the first intelligence tests; the last is about Charles Darwin. But Gould explained in his new introduction (page 35) that he made “few changes [in the original text] beyond correcting typographical errors and excising the few references entirely topical to 1981,” because (page 30) the original edition “required no update.”

Gould also explained in his introduction to the reissue (page 35) that he decided to bring it out because “as I reread *The Mismeasure of Man* ... I realized that my fifteen year old book is written as a rebuttal to *The Bell Curve*.” That statement was constantly echoed. On the front cover of the W. W. Norton & Company (New York) Paperback of the reissue is the statement that it is “the definitive refutation to the argument of *The Bell Curve*.” Similarly, the Science Book Club made the reissue of *The Mismeasure of Man* its Main Selection, and told its members that it “is the definitive answer to *The Bell Curve*.” (The Science Book Club did not make *The Bell Curve* available to its members.) So it is especially striking that, although *The Bell Curve* (page 5) refuted the Gould-Kamin accusation against Goddard and the influence of intelligence tests on the Immigration Act of 1924, and although Gould mentioned (page 45) Bernard Davis’ review of the original edition of *The Mismeasure of Man* (parts of which I quote above), which also refuted these accusation; nevertheless, Gould had the audacity to write in his introduction to the reissue (page 38), “All my grandparents were immigrants to America, and in the group of eastern European Jews whom Goddard and company would have so severely restricted.”

In the introduction to the reissue, Gould also explained (page 25) that the “special skill” that he brought to *The Mismeasure of Man* was a combination of interest in history, which most scientists do not have, and an ability to analyze data, which few historians have. He provided only one example of a historical contribution he made with his ability to analyze data (pages 25-6):

A historian would want to know [about] ... Morton’s conclusion about the inferiority of cranial capacity in American Indians ... but would not generally think about sitting down with Morton’s tables of skull measurements and trying to figure out whether Morton had reported his data correctly.... I could analyze the data with some statistical expertise.

Seven years before Gould wrote that, in 1988, in *Current Anthropology*,¹⁸ John Michael reported

¹⁷ Second edition. New York: Harcourt Brace Jovanovich: page 167

that he had measured a large sample of the skulls Gould used in *The Mismeasure of Man* to prove Morton's distortions and that he found that Morton had made very few errors, and these errors were not in the direction of making Caucasians superior to other races. J. Philippe Rushton summarized Michael's reassessment on page 352 of *Intelligence* 1991. These are among the most widely read and highly regarded anthropological and psychometric journals in the world. Gould must have been familiar Michael's study. If he could have refuted it, he would have.

I will now quote some of the criticisms of the reissue of *The Mismeasure of Man* in J. Philippe Rushton's review¹⁹, beginning with brain size and *g*. Gould often discussed studies of brain size and claimed that it is not significant. *G* is the general factor that is derived from IQ tests by factor analysis. In his original edition, Gould argued that the most fundamental error of his opponents is that they do not realize that *g* is merely a mathematical abstraction. In his new introduction, he again called that "the deepest (and most common) philosophical error" (page 20; cf. 22, 26, 47) and the basic mistake of *The Bell Curve* (pages 35-6, 43). The evidence I quote below from Rushton for the existence of *g* is only one among many different types of evidence for *g*'s existence. All are known to everyone who studies this subject and must be known to Gould. Again, if he could have refuted them, he would have.

[Gould] omits mention of remarkable new discoveries made from Magnetic Resonance Imaging (MRI) that show that brain size and IQ correlate ... These results are as replicable as one can find in the social and behavioral sciences and utterly destroy many of Gould's arguments. ... Even before Gould's (1981) first edition, Van Valen had reviewed the literature and estimated an overall correlation ... between brain size and intelligence. Gould (1981) neglected to even mention Van Valen's review. The 1990s have been called the "decade of the brain" for good reason. Remarkable discoveries using MRI confirm many of the relationships described by 19th century visionaries defamed by Gould. ... MRI ... creates, *in vivo* [in a living person], a three-dimensional image of the brain. An overall correlation of 0.44 was found between a MRI-measured-brain-size and IQ in eight separate studies ... The correlation between a subtest's correlation with brain size and its *g*-loading is even larger – 0.60! The first of these MRI studies were published in the late 1980s and early 1990s in leading, refereed, mainstream journals ... I know Gould is aware of them because my colleagues and I routinely sent him copies and asked him what he thought ... Gould did not reply to the missives regarding the published scientific data that destroyed the central thesis of his first edition. ...²⁰

The "new" edition repeats the same false accusations that have been refuted since 1981. Thus, Gould leaves unmodified his denigration of Sir Francis Galton ... despite having been called to account for painting "a thoroughly

¹⁸ "A New Look at Morton's Craniological Research:" pages 349-54.

¹⁹ "Race, Intelligence, and the Brain: The Errors and Omissions of the 'Revised' Edition of S. J. Gould's *The Mismeasure of Man* (1996)." *Personality and Individual Differences* 23, 1997: pages 169-80.

²⁰ John Wickett, Philip Vernon and Donald Lee observed, "There is no longer any doubt that a larger brain predicts greater intelligence. ... head size shows a positive correlation ... with IQ: this being consistently found throughout 100 years of research. Obviously replication of this effect is no longer required" (page 1096 of "Relationships between Factors of Intelligence and Brain Volume." *Personality and Individual Differences* 29, 2000: pages 1095-1122).

In the standard textbook, *Handbook of Intelligence*, edited by Robert Sternberg and published by Cambridge University Press in 2000, Vernon *et al.* (pages 245-50) reviewed every study that had ever been conducted of the relation of human brain size with some measure of intelligence – various intelligence tests, university grades, teachers' evaluations, etc. They consisted of 54 independent samples, involving 56,793 subjects. Every correlation was positive.

tendentious portrait” by University of Cambridge statistician A. W. F. Edwards (1983) in the *London Review of Books*... Similarly, Gould repeats his trashing of Sir Cyril Burt’s reputation ... [even though] two independently written, meticulously thorough books ... have vindicated Burt.

In his 1981 book *In Search of Human Nature*, the eminent historian Carl N. Degler took Gould to task for ignoring ... that it was the evidence of high IQs in Jews and Chinese ... that led Lewis Terman to strengthen his view that the low black IQ was heritable.²¹

These are only some of the misrepresentations and lies that Rushton discussed.

I will quote one more criticism of Gould. It is by James Flynn. Flynn has always been a left-wing activist. As a student in the 1950s, he was the political action co-chairman of the University of Chicago’s branch of the NAACP. After that, he was chairman of Congress of Racial Equality in Richmond, Kentucky. He then moved to New Zealand because it was the most socialistic English speaking country. When New Zealand abandoned the welfare state, Flynn ran three times for its parliament as a candidate of the Alliance party, the only party left that supported a social democratic program. His last electoral attempt was in 1996. In 1999 Flynn began an article²² by pointing out, “Gould’s book evades all of Jensen’s best arguments, for a genetic component in the black-white IQ gap, by positing that they are dependent on the concept of *g* as a general intelligence factor. ... This is manifestly false.”

I observed in my introduction that if genuine evidence and arguments against genetic determinism of intelligence and of racial differences in intelligence existed, Gould would have known of them. In fact, if anyone would have been able to find or fabricate plausible lies, it would have been Gould. Instead, he was forced to rely on lies and distortions whose fraudulence is immediately obvious to everyone who is familiar with this subject.

APPENDIX: IDENTICAL TWINS RAISED APART FROM BIRTH

In the first edition of *The Mismeasure of Man* (page 234), Gould wrote “The only really natural experiment for separating genetic from environmental effects in humans [is] genetically identical individuals raised in disparate environments. Studies of identical twins raised apart should therefore hold pride of place in literature on inheritance of IQ.” Gould repeated that statement verbatim (page 264) in the 1996 reissue. He completely ignored the fact that by far the most extensive and careful study of identical twins raised apart from infancy in different families in different social environments had been begun in 1979 and its results were widely reported well before 1996. The significance of this study, which was done by Thomas Bouchard Jr. and his team at the University of Minnesota, is illustrated by comparing the discussion of the relative importance of genetics and social environment in the third and fourth editions of Walter Mischel’s standard psychology textbook, *Introduction to Personality*.²³ In the third edition, which was published in 1981, Mischel wrote (page 311), “Imagine the enormous differences that would be found

²¹ Terman was one of the great pioneers of intelligence testing. Like all intelligence testers, he found Jews and Orientals to be more intelligent than white Gentiles. He is one of the villains of *The Mismeasure of Man*, where Gould represented him as an Anglo-Saxon supremacist (page 205 of the 1996 edition).

²² “Evidence against Rushton: The Genetic Loading of the Wisc-R Subtests and the Causes of Between-Group IQ Differences.” *Personality and Individual Differences*, 26: pages 373-93.

in the personalities of twins with identical genetic endowments if they were raised apart in two different families. ... Through social learning, vast differences develop among people.”

In the fourth edition, published in 1986, Mischel wrote (pages 183-4),

To separate the role of genetics and environment, it is especially interesting to examine identical twins who have been reared apart, preferably in extremely different environments. A large scale project now underway at the University of Minnesota ... is now beginning to provide much information. The subjects include thirty pairs of identical twins who had been separated on the average before the end of the second month of life ... The twins remained totally separated for many years and in some cases did not meet until the research project united them ... Preliminary reports suggest instances of dramatic psychological similarities within the twin pairs, even for twins who grew up in radically different environments.

The only reason that Gould could have had for ignoring the Minnesota Twin Study is that he could not refute its results and he knew he could rely on the ignorance of reviewers in the popular press. The Minnesota Twin Study was also ignored by the third most frequently cited book that attacks genetic determinism, after Gould's *The Mismeasure of Man* and Kamin's *The Science and Politics of IQ*. That is *Not in Our Genes*, which Kamin co-authored with Richard Lewontin and Stephen Rose. It was published in 1984 (by Pantheon Books), after Gould's and Kamin's books, when the results of The Minnesota Twin Study were already widely known. William Wright observed about it,²⁴

When they turn their sights on studies that compare identical with fraternal twins, both raised together, they quite remarkably fall back on the well-refuted argument that MZs [monozygotic/identical twins] are more alike than DZs [dizygotic/fraternal twins] because they are brought up to emphasize similarities ... totally ignoring the numerous studies that prove that such ... [factors], to the extent that they exist at all, have zero effect on twin development. The[se] studies ... were planned and executed well before the publication of *Not in Our Genes*, primarily in response to these very criticisms – which had often been made, primarily by these very men ... The authors [Lewontin, Rose, and Kamin] could have criticized the[se] studies and picked holes in the design and methodology, but to pretend this counter-research didn't exist was scientifically irresponsible and dishonest.

When the three authors arrive at the subject of separated twins, they omit any reference to the Minnesota Twin Study, which had been in progress for five years at the time of the publication of *Not in Our Genes* and which obviated most of the book's arguments. The authors chose to attack instead the earlier, less airtight reared-apart twin studies, targeting in particular the high concordance in IQ scores of separated MZs. Indignantly, they explain this nagging statistic as a result of recruitment bias, contacts between supposedly separated twins, and family connections between allegedly divided households.

Thomas Bouchard [director of the Minnesota Twin Study] had been well aware of all of these criticisms of the earlier twin studies and designed his own study to meet them. Indeed, the elimination of such flaws had for him been a powerful motive in undertaking another separated-twin study. In the eyes of most observers, he was successful. He also seems to have been successful in the eyes of the *Not in Our Genes* authors because they chose to ignore the largest and most extensive separated-twin study that had ever been undertaken, while laboriously picking apart the vulnerable previous studies. ... After attacking the earlier studies on the usual (disproven) grounds, they make no mention of the Minnesota study, which avoided the very pitfalls the authors cite

²³ Both were published by Holt, Rinehart and Winston.

²⁴ *Born That Way*. New York: Alfred A. Knopf, 1998: pages 201-203.

yet had resoundingly replicated the earlier MZA [monozygotic (identical) twins raised apart] studies' high IQ concordance figures.

When the Minnesota Twin Study became too well known to ignore (although Gould still managed that trick in his 1996 reissue), the opponents of genetic determinism used their old tactics to discredit it. William Wright gave the following example (pages 223-7):

The June 1993 issue of *Scientific American* contained an article that purported to be an overview of behavioral genetics ... "Trends in Behavioral Genetics: Eugenics Revisited" ... written by a nonscientist named John Horgan ... In dealing with the Minnesota Twin Study, Horgan ... makes no mention of the forty-odd research papers the study produced ...

[Horgan] resurrects all of Leon Kamin's long-since discredited criticisms of twin studies. Although Horgan was provided with the studies that refute the points [Kamin made and he repeated]... he totally ignored them. All the questions Kamin raises – does contact between twins make them more similar, do twins become more similar, if, during rearing, their similarities have been stressed, does recruitment through the media attract twins who exaggerate their similarities? – all these points are matters that can be tested empirically. They have been tested and found to have no effect. But Horgan simply repeats the criticisms and leaves them hanging, as if no one had ever before addressed them.

Horgan states that behavioral genetics findings have not been replicated, even though Bouchard had explicitly told him of replications, most significantly the replication of IQ results by the Swedish twin study. As it happened, the Swedish twin study used totally different methods to recruit their twins than had Minnesota, thus strengthening the replication of heritability figures and demolishing the Horgan/Kamin chestnut about media recruitment. ...

Bouchard and fifteen other scientists from eight universities [wrote a letter of protest]. ... They cited ... stunningly false generalizations such as "practically every claim of genetic basis can be explained as an environmental effect." ... [They pointed out that] the small coterie of critics [of genetic determinism] has never executed any research that would support their environmental positions. ... Lee Silver, a professor of genetics at Princeton, stated in his letter, "I am shocked and dismayed that a journal as reputable as *Scientific American* could stoop to the depths of a mass-market magazine and allow the stand-alone publication of the extremely one-sided and highly biased article by John Horgan." Bouchard ... wrote a nine-page paper for circulation ... Most of the letter itemized the information Bouchard provided Horgan that put to rest his points, and which Horgan did not mention. ... [To] Horgan's claim that separated twins, excited by the attention their sameness brings them, strive to exaggerate their similarities. Bouchard responded, "The twins would have to be pretty talented to exaggerate their similarities in IQ, special mental abilities, reaction time to a variety of tasks they had never seen before, responses to thousands of questions they had never considered, as well as cardiovascular functioning, pulmonary functioning, cavities, etc." [The twins were tested for all these factors simultaneously in separate rooms.] ...

[*The National Association of Science Writers ... voted Horgan's piece the best magazine article in 1993* [italics added].