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request that anyone who has such information please communicate with us via our committee's staff officer, Ms. Rosemary Chalk, AAAS, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036 (telephone: 202-467-5436). Unless our informants specifically request that we not do so, we will make the information we receive available to relevant scientific societies affiliated with AAAS, to the National Academy of Sciences Advisory Committee on Human Rights, the British Council on Science and Society, the International Council of Scientific Unions Committee on the Safeguard of the Pursuit of Science, the Federation of American Scientists, and other appropriate groups working to protect scientific freedoms.

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References and Notes

1. *Science* **193**, 877 (1976); *ibid.* **194**, 1036 (1976).
2. The report *Scholarly Freedom and Human Rights* (Barry Rose, Chichester, England, in press) by a study group chaired by John Ziman of the British Council for Science and Society includes a comprehensive survey of human rights of scientists, together with references to relevant international agreements, such as the U.N. Universal Declaration of Human Rights, the European Convention on Human Rights and Fundamental Freedoms, the American Convention on Human Rights, and the International Covenant on Civil and Political Rights.
3. See, for example, *Nature (London)* **262**, 243 (1976); *ibid.* **263**, 452 (1976); N. Wade, *Science* **194**, 1397 (1976).

Burt's IQ Data

Nicholas Wade, in his article on Cyril Burt (News and Comment, 26 Nov., p. 916), stops short of concluding that Burt's IQ data were fraudulent and leaves open the possibility that his early work might be acceptable science. There are, it must be stated, extraordinary difficulties in obtaining information about any of the data or procedures on which Burt's reported correlations were based. The following quotations from Burt are typical: "... methods ... were described more fully ... in degree theses by the investigators named in the text" (1, p. 46); "... buried in inaccessible theses" (1, p. 46); "A fuller account of sources and calculations, with detailed tables, will be found in her [J. Mawer's] degree essay ... (filed at the Psychological Laboratory, University College)" (2, p. 85). There is no such essay filed; the same "essay" is also referred to by Burt as a "thesis," but no such thesis was submitted to the University of London.

Elsewhere Burt writes, "Some of the inquiries have been published in L.C.C. [London County Council] reports or elsewhere: but the majority remain buried in typed memoranda or degree theses" (2, p. 89); and "... the number examined was nearer a hundred and twenty than three" (3, p. 10). This unsatisfactory, to say the least, method of citation was employed by Burt throughout his career.

In 1912 Burt and Moore (4, p. 385) wrote: "The more important of our tests have recently been carried out . . . upon over a thousand children of other ages (6 to 14) and upon adults, upon children and adults both of different social status (chiefly from Liverpool slums or from Liverpool University), and of different nationality (chiefly Irish and Hebrew). The results may be shortly summarized as follows. Every test appears to differ with differences in race, status, and age. . . ." This bit of scientific reporting must be squared with the following quote from a 1939 article by Burt (1, p. 48): "The value and reliability of group testing . . . were demonstrated by Moore, Davies, and myself. . . . These were, we believe, the first investigations in this country in which the number of children tested ran into well over a hundred." The early Liverpool research came center stage in 1954, in a letter (5) written to a journal edited by Burt. The correspondent, concerned with questions of scientific priority, indicated that Burt and Moore's "printed reports . . . do not give the detailed tables. Are these still available?" The reply (6), jointly authored by Burt and "P. Durant," stated: "Mr. Moore, it is hoped, will himself publish a fuller account of his analysis in a forthcoming issue of this *Journal*" (6, p. 123). The fuller account was not published by Moore, who had vanished as a research contributor more than 35 years earlier.

Though accusations of fraud clearly should not be made without substantial evidence, Herrnstein's reaction to my remarks about Burt ("I find it hard to stay in my chair") seems extreme. The circumstances make it appropriate to quote from a letter written by Herrnstein to a reporter on 16 July 1973. The letter is in my file, as Herrnstein mailed a copy to me. Copies were also sent to the reporter's employer, to a number of psychologists, and to the president and dean of Harvard University. Herrnstein wrote:

Until Kamin started his campaign to discredit Burt, there was no hint that Burt was suspect . . . by . . . any . . . expert you might have consulted. You cannot verify this by asking them now, for their memories might deceive them. You can, however, look at the

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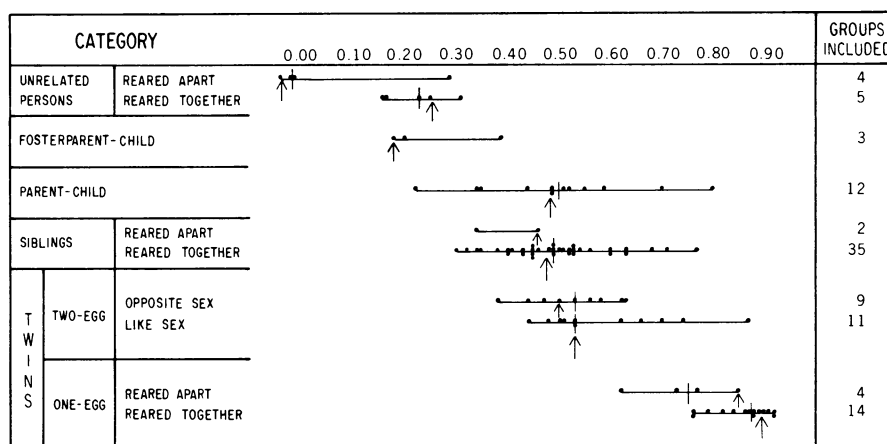


Fig. 1. Correlation coefficients for "intelligence" test scores from 52 studies. Some studies reported data for more than one relationship category; some included more than one sample per category, giving a total of 99 groups. Over two-thirds of the correlation coefficients were derived from IQ's, the remainder from special tests (for example, Primary Mental Abilities). Midparent-child correlation was used when available, otherwise mother-child correlation. Correlation coefficients obtained in each study are indicated by dark circles; medians are shown by vertical lines intersecting the horizontal lines which represent the ranges.

public criticisms of Jensen and me prior to Kamin's revelations and you will find no bad word about Burt's data. Burt was . . . widely considered a person of unimpeachable integrity.

Kamin's assault is as yet unpublished, but I have heard his talk. There was nothing in it to persuade me that Burt was a "cheat," but if Kamin really told you what your article says he said then Kamin is surely a cheat.

The reporter had quoted my critique of Burt accurately. Herrnstein was correct in asserting that no experts—some now described as "early doubters of Burt's data"—had said a bad word. To me it seems apparent that Herrnstein is more concerned with protecting the good name of dead hereditarians than that of his living critics. This, I think, is reflected in Herrnstein's analysis of the data. To readers of Herrnstein's review (7) of the IQ literature I recommend, for quite a different perspective, my own book (8).

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2. ———, *ibid.* 13, 83 (1943).
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4. ——— and R. C. Moore, *J. Exp. Pediatr.* 1, 273 (1912).
5. D. M. Friedmann, *Br. J. Stat. Psychol.* 7, 119 (1954).
6. C. Burt and P. Durant, *ibid.*, p. 119.
7. R. Herrnstein, *I.Q. in the Meritocracy* (Little, Brown, Boston, 1973).
8. L. J. Kamin, *The Science and Politics of I.Q.* (Halsted, New York, 1974).

The errors—or whatever they are—in Sir Cyril Burt's heritability data have attracted a great deal of attention recently. Much of what has been written about the matter in both scientific jour-

nals and the popular press appears to assume that what is at stake is not just Burt's reputation, but the basic underpinnings of the view that intelligence has a large genetic component. Such a conclusion is unwarranted. The data demonstrating the heavy dependence of IQ on genetic factors are far too solid to be shaken by the rejection of the work of any single investigator—even Sir Cyril Burt.

Figure 1 is reproduced above as it appeared in *Science* in 1963 (1, p. 1478), except that arrows have been added to indicate the data points based on Burt's work (2). As is readily apparent, the deletion of Burt's data would have no appreciable effect on the overall picture. Note that Burt's figures differ from the median values of the many authors in an unsystematic way. The most likely hypothesis to account for the flaws in Burt's tables is one mentioned in Wade's article—being familiar with the literature and realizing that a few erroneous values wouldn't change things much, the aging Burt regrettably took the shortcut of repeating correlations he had calculated earlier rather than taking the trouble to compute new ones.

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