



## New evidence on Sir Cyril Burt: His 1964 Speech to the Association of Educational Psychologists

John Philippe Rushton\*

*Department of Psychology, University of Western Ontario, London, Ontario, Canada N6A 5C2*

Received 24 February 2001; received in revised form 2 October 2001; accepted 22 January 2002

---

### Abstract

After reviewing the debate that raged over Cyril Burt's [Br. J. Psychol. 57 (1966) 137] finding of a correlation of .771 for IQ scores in 53 pairs of monozygotic twins raised apart, this paper provides the transcript of a previously unpublished speech by Burt given on May 2, 1964, at the age of 81, on the occasion of his appointment as Patron to the Association of Educational Psychologists (AEP). Burt's speech is of special interest because it occurred just prior to the publication of a paper later alleged to be built on fraudulent data. Kamin [The Science and Politics of IQ (1974). Hillsdale, NJ: Erlbaum] declared Burt's correlation of .771 to be implausibly high and implausibly invariant from that reported in his 1943 work. Hearnshaw [Cyril Burt: Psychologist (1979). Ithaca, NY: Cornell University Press] concluded that Burt had made up his data, and the Sunday Times (1976) even alleged that Burt had conjured his research assistants up out of thin air. Then, independent books by Joynson [The Burt Affair (1989). London: Routledge] and by Fletcher [Science, Ideology and The Media: The Cyril Burt Scandal (1991). New Brunswick, NJ: Transaction] vindicated Burt (the "missing" research assistants were found and the twin data had not been "cooked"). More recently, Mackintosh [Cyril Burt: Fraud or Framed? (1995). Oxford: Oxford University Press] reiterated Hearnshaw's allegations of fraud, including the claim that Burt did not have access to new data after his retirement in 1950. However, as Fletcher pointed out, Burt was openly requesting educational psychologists to help him locate additional pairs of twins raised apart. Moreover, in the 1964 talk presented here, which allows Burt to speak for himself, Burt describes his wide access to the schools, teachers, and social workers of the London County Council from 1913 onwards and states how, half a century later, analyses were still going on. He describes the "potted history" of educational psychology in Britain, his 1913 appointment as psychologist for the London County Council, and some of his findings as Britain's first educational psychologist. With the whole panoply of his intellectual life on display and no quotes

---

\* Tel.: +1-519-661-3685; fax: +1-519-850-2302.

E-mail address: rushton@uwo.ca (J.P. Rushton).

taken out of context, Burt's talk may incline some readers to take him at his word and to dismiss the accusations against him as "not proven."

© 2002 Elsevier Science Inc. All rights reserved.

*Keywords:* Behavioral genetics; Educational psychology; Intelligence tests; Scientific fraud; Twin studies

---

## 1. Introduction

Sir Cyril Burt (1883–1971), the first educational psychologist in Britain, began his career as an Assistant Lecturer at the University of Liverpool in 1908. From the start, he was involved in the statistical analysis of IQ testing, especially factor analysis, and general factor theory (Burt, 1940). In 1913, at age 30, Burt was appointed as psychologist to the London County Council where he collected an enormous amount of data and developed new mental and scholastic tests for the entire London School System. During much of this period, Burt occupied the Chair in the Department of Educational Psychology at the University of London. In 1932, when Charles Spearman retired as Head of the Department of Psychology at University College, Burt was named his successor, a position he retained until his retirement in 1950. In 1946, he was knighted by the Labour Government for his work on psychological testing and for making educational opportunities more widely available without regard to class background. In 1971, he received the Thorndike Award for outstanding contributions to educational psychology from the American Psychological Association.

Burt broke new ground in his studies of environmental effects, researching many family factors. Burt's (1937) *The Backward Child* separated environmental variables of deprivation, such as poor nutrition and illness, from the innate factors that handicapped children. He advocated medical and dental examinations in the school setting and was partly responsible for the distribution of milk to ensure adequate levels of vitamin D to prevent rickets. Burt identified other physical causes of poor concentration in school such as defects of hearing, sight, speech, and spinal curvature. He was one of the first to correlate sociological factors such as residential indicators of infantile mortality, overcrowding, poverty, unemployment, and family size with poor school achievement. Burt was also interested in the top end of the scale. Burt's (1975) *The Gifted Child* focused on the damaging effects to a bright child if his intelligence was not recognized because of poverty, the school system, or temperament. He, therefore, advocated special schools for the gifted.

After Burt officially retired in 1950, he published over 200 papers and books before his death at age 88 in 1971 (i.e., 10 per year) (see Hearnshaw, 1979, pp. 330–338, for a list). These included new data on the heritability of mental ability, including data from identical twins reared apart, suggesting a large genetic contribution (Burt, 1966). From 1947 to 1967, he was also editor of the *British Journal of Statistical Psychology*.

The "Burt Affair" began when Kamin (1974) charged that Burt's (1966) IQ correlations for 53 pairs of identical twins reared apart were implausibly high ( $r = .771$ ) and invariant from the value Burt (1943) reported in his study of 15 pairs. The controversy reached the general public with a headline story in London's *Sunday Times* (1976), "Crucial Data Was

Faked by Eminent Psychologist,” which claimed Burt’s research assistants, Jane Conway and Margaret Howard, never existed. Scandal raged for about three years until Hearnshaw (1979), Burt’s biographer, with access to Burt’s private correspondence and diaries, concluded that Burt was “guilty.” In 1980, the British Psychological Society, refusing to undertake an independent enquiry of its own, endorsed the guilty verdict (Beloff, 1980).

The controversy blighted Burt’s reputation and scored a major public relations victory on the IQ issue for antihedertarians. Psychology textbooks mentioned Burt not for his many scientific discoveries but for his alleged misrepresentation of data. By implication, the genetic basis of intelligence was held to be without any basis in fact.

Ten years later, however, two independently written, meticulously thorough books (Fletcher, 1991; Joynson, 1989) completely vindicated Burt. Both “missing” research assistants were found and the twin data were proven not to have been “cooked.” Fletcher also described how ideology and a receptive journalistic audience whipsawed discussion of the heritability of intelligence. On February 24, 1992, the British Psychological Society, without explicitly repudiating their 1980 condemnation of his work, announced “Council considers that it is now inappropriate for the Society as such to seek to express a fresh opinion about whether or not the allegations directed at Burt are true. Moreover, in the light of greater experience, the British Psychological Society no longer has a corporate view on the truth of allegations concerning Burt.”

Many of the details of the case are fascinating and disturbing. For example, there is the truly “flabbergasting” fact (Jensen’s, 1992, p. 105, term) that many of Burt’s papers were destroyed by Miss Gretl Archer, Burt’s private secretary for over 20 years, almost immediately after his death on the advice of Liam Hudson, professor of educational psychology at Edinburgh University, one of Burt’s most ardent opponents. Jensen’s account was corroborated by Hudson himself in an interview with *Science* staff writer Nicholas Wade (1976).

In 1995, the Burt case was reopened by Nicholas Mackintosh, professor of psychology at Cambridge University in England, who edited a volume of essays on Burt. Mackintosh (1995) concluded that it was “more probable than not that some of [Burt’s] data existed only in his imagination, in other words that he fabricated them” (p. 148). Surprisingly, Mackintosh’s verdict rested primarily on a new allegation—that Burt (1969) had “faked” his claim of a several point decline in educational attainment and of a one-point decline in the IQ performance of London school children between 1914 and 1965. Mackintosh’s evidence was an argument that a retired Burt would be unlikely to have had access to recent data and that studies elsewhere in the world typically found a 10-point *increase* in IQ over this time period. Mackintosh decided against alternative hypotheses that the declines were due to the use of unstandardized tests, immigration from the Third World (including from Africa and the Caribbean), or the exodus of middle-class Whites. Mackintosh also contended that Burt’s (1966) twin data had “probably” (p. 68) been fabricated because when Burt produced the individual twin’s scores in response to requests, there were discrepancies with earlier statements Burt had made about them.

On the most important issues, the matter now appears settled. The “missing” research assistants have been found. In addition, there have been five independent studies of identical twins raised apart that corroborate Burt’s assessment (viz., Bouchard, Lykken, McGue, Segal, & Tellegen, 1990; Juel-Nielsen, 1965; Newman, Freeman, & Holzinger, 1937; Pedersen,

Plomin, Nesselroade, & McClearn, 1992; Shields, 1962). The average heritability of those studies, weighted by sample size, is 0.75 (unweighted mean = 0.74)—almost identical to Burt's supposedly “faked” correlation of .77! Perhaps in the future the fairest thing to do in meta-analyses is to follow the example of Fulker and Eysenck (1979, p.110, Table 5.3) and include Burt's data (perhaps then giving the result were they excluded in a footnote) rather than continuing to exclude Burt's data as some others have done. In science, replication is the best way of determining truth, allowing “errors” to aggregate out.

## 2. New evidence

A tape recording of Burt's May 2, 1964 talk on the occasion of his appointment as Patron to the Association of Educational Psychologists (AEP) at the age of 81 was sent to me in 1996 by one of Burt's admirers. I immediately had it transcribed but have only recently determined that it was not previously published. (There is no mention of it in Burt's bibliography given by Hearnshaw, nor in the *Social Science Citation Indices* from 1956 to 1970, nor in the Burt Archives at the University of Liverpool, nor in the Archives of the British Psychological Society at the University of Staffordshire, nor was it published in the *Newsletter of the Association of Educational Psychologists*.)

In the talk that follows, it is plain that Burt had almost unlimited access to the schools, to the students' files, to the teachers, to the social workers, and even to the medical records of individuals and their families. Indeed, Fletcher (1991, pp. 287–288, 299) has stated that in early 1965 Burt, as Patron of the Association of Educational Psychologists, was “in contact with a wide range of his earlier students, [and] was advertising for more twins” in the Association's Newsletter! However, none of his biographers have brought out as fully as does Burt's own talk, Burt's continuing capacity for legitimate intellectual engagement. In it, Burt claims, “I've kept careful records of the after-histories of almost every case referred to me. Indeed, after half a century, I am still in touch with quite a few of them.” Strikingly, he describes the unique range of the County of London for the purpose of psychological research including the “unique compilation increasing steadily year by year of cases of identical twins that had been reared in very different home circumstances. . . Indeed, we are still analyzing some of the masses of data we then collected.”

I have argued Burt's case before (Rushton, 1994, 1997) and it is time to let Burt speak for himself. Apart from adding a date or clarification in square brackets, the text is exactly as transcribed from the recording. I believe Burt's talk will incline readers to take him at his word and dismiss the accusations against him once and for all.

## 3. Transcript of Burt's speech: “The School Psychological Service: Its History and Development”

May I begin, ladies and gentlemen, by thanking you and your president for the great honor you've done me by asking me to serve as your patron and inviting me to speak to you today. I

only regret that a passing disability unfortunately prevents me from being with you in person and that you are obliged to listen to the disembodied voice of a tape recorder in my stead. I must confess I felt a little doubtful whether I could rise to the status of a patron and so in the hope of discovering what my duties might be, I took down the dictionary from my study shelf and there I read: “A tutelary saint; especially one who protects a community, a profession, or one of the finer arts; from the Latin patronus an advocate who defends a person or a cause.” I’m afraid I’ve no claim to rank as a saint, but I shall certainly always be ready to defend the person and the cause of the educational psychologist. But some of you may remember a rather different definition, that of Dr. Johnson—intended, I suppose, as an awful warning: “Patron,” he says, “commonly a wretch who supports a candidate with insolence, and expects to be repaid with flattery.” What I shall expect, ladies and gentlemen, and hope for I may say, will be not flattery but criticism and correction.

A week or two ago in one of those recurrent wireless talks on education in our schools, a member of an education committee put a pertinent question, which most of you I imagine must have heard again and again. “Why,” he asked, “Do we *need* an educational psychologist? Where did he spring from, and what is supposed to be his functions?” Perhaps the best way to answer such inquiries will be, as your president has suggested, to give you a short history—a potted history of educational psychology beginning with its earliest days.

Glancing back, as I did a while ago, at the newspapers of 90 or 100 years ago, I think we can now see that the need for something like a psychological service in the schools first became obvious after the passing of Mr. Forster’s bill for universal education in 1870. That enlightened measure was itself largely due to what was then the dominant school of psychology, the 19th century behaviorists aided by Benton and then Mills, the associationists, as they were more commonly called. With their optimistic, egalitarian outlook, they heralded education as a panacea for almost every social evil. The watchword of the French psychologist Helvétius was their maxim “L’éducation peut tout,” or as James Mill expressed it “If education can’t do everything, there is hardly anything that it cannot do.” Well, practical experience quickly falsified those over-sanguine promises.

The older voluntary schools had been able to refuse the duller and the more troublesome youngsters if they wished. Consequently the newer school boards were obliged to accept the rejects. As a result, their classrooms we are told were often crammed with an aggregation of difficult children; urchins who could not be taught, ruffians who could not be controlled, and the protests of the teachers emphasized the need for a systematic investigation into the whole of the problems thus created. Accordingly, during the next two or three decades, inquiries were started by several independent bodies.

First of all, in 1877, at the instigation of Francis Galton, half-cousin of Charles Darwin, the British Association undertook an anthropometric survey, which was to include children of school age throughout the country. A few years later, Charles Booth, the wealthy member of a liberal shipping firm, started an intensive survey of *Life and Labor in London*, with a special study of London schools and school children. His maps of London poverty and crime—with each street marked in yellow, blue, red, or black according to the conditions of the inhabitants—I used to take with me in my pocket as I visited my cases in their homes. And later still, a series of school inspections were carried out by Dr. Francis Warner, Professor

of Anatomy and Physiology in the Royal College of Physicians. He measured skulls and calculated the size of brains, and noted which children displayed anatomical stigmata, or so-called nerve signs; and he concluded by declaring that, among the general school population, there were a number of children who were dull or unstable by inborn constitution, “utterly incapable,” he said, “of responding to the type of instruction given in the ordinary school.” The outcome was the passing of the “Elementary Education (Defective and Epileptic Children) Act” of 1899, which recognized a new group of defectives—the feeble-minded—those who were expressly distinguished from the milder or remedial cases—the dull and the backward, and after medical certification, were to be transferred to a so-called special school.

Meanwhile, Galton had set up in London what he called an Anthropometric Laboratory. His principle, you may remember, was that mental abilities should be diagnosed by mental characteristics not by physical. The Laboratory began as a demonstration center at the Health Exhibition; and then moved to the Science Museum in South Kensington. Finally, at the invitation of Professor Sully, it found a home at University College. The College in Gower Street still preserves a few of the large orange posters, which announced, “A Laboratory has now been instituted for the measurement of form and faculty, partly for experiment and research, partly to familiarize the public with the uses of human measurement. By this means, you may learn something of your own bodily and mental powers and those of your children and so gain timely warning of remedial faults or defects in their development. Charge, three pence to those on the register, four pence to those who are not.” And thus Galton’s laboratory became in effect the first “Child Guidance Center.” (The phrase was Sully’s) and, at the turn of the century Sully himself founded the Child Study Society and opened a Department of Education. McDougall was invited to become director of experimental work. At that period McDougall also held a part-time post at Oxford where he established a psychological laboratory.

Galton, by now, was planning a second anthropometric survey to include mental as well as physical measurements and asked McDougall to start investigations with his various research students on the construction and standardization of mental tests of the type he and Sully had already invented. It so happened that my father [a medical doctor] was positioned at [visited] the Galton family; and thus, while still a school boy, I was fortunate enough to met Francis Galton, or Frank as he was commonly called at his own home. I read his books; I heard him expound his views; and I got fascinated by his ingenious mathematical techniques.

Galton’s real life long aim, as everyone knows, was to turn individual psychology into a reliable branch of science. And it was this branch of psychology that attracted me far more than the philosophical approach of Ward and Stout. Accordingly, when I was at Oxford, I chose psychology as my special subject for “Greats” and thus became one of McDougall’s first pupils. The others were Jack Flugel, the psychoanalyst, William Brown, afterwards head of the psychological department at King’s College, and a little later we were joined by Spearman who had just returned from working with Wundt at Leipzig and afterwards became Sully’s successor at University College.

The results of my own researches were incorporated in a paper on “Experimental Tests of General Intelligence” (Burt, 1909). I posted my manuscript to Ward, who was then the Editor

of the *British Journal of Psychology*. (Ward as you may discover from his posthumous book on *Principles*, was highly skeptical of Galton's proposals—but of that I was blissfully ignorant.) However, I still treasure Ward's letter deploring the numerous statistical tables that I'd included and greatly regretted that I had "devoted," as he put it, "such a deal of time and industry to a transient problem like mental testing, which," he said, "holds so little promise for the future." Nevertheless, much to my surprise, the article, running to more than 80 pages, eventually appeared in print. And, carried along by some strange grape vine, it found its way into the hands of the Education Officer for London, who himself was an ardent devotee of the new art of statistics.

Meanwhile, both teachers and educationists had been getting more and more convinced that the work carried out on a limited but unofficial basis by Galton and his co-workers at the Anthropometric Laboratory should be taken over by the Education Authority as part of their school system. Of the many problems which, as Sully argued, required attention from the trained psychologist, the one which in those days worried education officers and education committees most of all was the problem of selecting and certifying so-called defectives for transference to special schools. The certifying doctors, not unnaturally, at first tended to pass on every backwards youngster who might profit by the smaller classes, the individual teaching, and the more practical curriculum. And many children were consequently certified, who in a year or two's time, were returned to the ordinary school as cured.

The net cost of maintaining a pupil at one of these special schools was nearly three times that of the cost of maintaining him at an ordinary elementary school. The Education Committee complained of the expense, the parents complained of the stigma, and the inspectors and the teachers complained of the faulty diagnoses. Different doctors had different standards. A child who was "normal" in [working class] Stepney might be certified as "feeble-minded" in [middle class] St. Pancras, and excluded as an "imbecile" in [professional class] Hampstead. Justice plainly required that, from one end of the county to the other, there should be one weight and one measure. Furthermore, said the teachers, the task of deciding whether a pupil was (in the phrase of the Act), "capable of benefiting by the education given in the ordinary school" was a question which should be decided by someone with educational or psychological experience, not by someone with a merely medical training.

Eventually in 1913, the London County Council—which in those days preened itself on being the most progressive educational authority in the most progressive capital in the world—decided to appoint an official psychologist. He was to be a member, not of the medical department but of the school inspectorate. He was assigned an office at headquarters and allowed a small fund for equipping it on the lines of Galton's laboratory. This was the first *official* Child Guidance Clinic set up in this country and indeed I think in the whole world.

The appointment, which in the first instance was to run for three years or so, was to be half time only. Thus the psychologist was free to devote the other half of his time to psychological research. This had one tremendous advantage. Hitherto, anybody who (like myself at Oxford and Liverpool) wanted to investigate the problems of child psychology had to enter schools from the outside, and certainly could not venture to disarrange the time-tables or the procedures of the teachers. But now, as a member of the inspectorate, the psychologist was able to organize surveys and experiments from within the school system with all the

authority of an Edwardian school inspector. He had access to private files, to medical records and the like, which in those days had to be kept as secret as formulae for a new explosive bomb in the eyes of outsiders, and he could also call on the help of doctors, social workers, and even introduce voluntary research students from various University departments to aid him in his work.

And, with a remarkable stroke of generosity, the Council itself, handsomely financed the publication of the psychologist's reports—with statistical tables, correlations, factor analyses, diagrams in two colors, all of which would have been much too expensive either for a scientific journal or for a commercial publisher to set up in print. Educational psychology is indeed deeply indebted to the munificence of the Council of those days.

On the first day of my appointment, I duly appeared in top hat and striped trousers in the doorway of the Education Officer's private room, asking, very humbly asking, for my terms of reference. I was greeted (in his Aberdonian accent), with a curt "Young man, you've all London at your feet, go away and draw 'em up yerself." I went away. I drew them up. And, as finally approved by the Education Committee, my general plan of campaign was very roughly, as follows.

First, to report on problematic cases referred by teachers, doctors, or magistrates for individual investigation. These cases fell into several fairly distinctive categories. By far the most important were the borderline cases of mental deficiency, which had already aroused such heated controversy. On collecting the relevant data I found surprising variations from one electoral district to another. In [working class] Stepney and Bethnal Green, for instance, the proportion of defectives was nearly three times as large as in [middle and professional class] Lewisham and Hampstead. And one naturally asked, was this due to differences in subjective standards of the local medical officers? If so, how was it that, in the very areas where defectives were most numerous, the scholarship winners were also few and far between? What were the causes? Poverty? Other environmental handicaps? The inheritable dullness of the family or the stock? Or perhaps a combination of the two? Or, finally, some causal factor hitherto unsuspected? It seemed clear that my first job must be to study the pupils attending the special schools and the varying procedures governing their certification.

I well remember how at the Educational Officer's suggestion, I was taken round the schools a week or two later by a rather pompous member of the Education Committee and presented to the various Headmasters. His opening introduction, which I found alarmingly ambiguous, was always the same, "Mr. Smith, this is Dr. Burt, who is responsible for all the mentally defective children born within the County of London."

The immediate need was plainly some objective method for determining the borderline. The borderline itself naturally depended on the amount of school accommodation actually available, and that was in those days, just under two percent, which, of course, corresponds with a standard deviation of minus two; or on the conventional scale (decided by percentiles not mental ages) with an IQ or mental ratio of almost exactly 70. In deciding the fate of each questionable case, the method we adopted was to compile a short but systematic case history. This always included an assessment based on a test of intelligence, but (as you may have gathered from our reports), it also covered half a dozen other items as well. The purpose of the intelligence test was two-fold: to exclude educational handicaps resulting from an



illiterate home or inadequate schooling; and to provide a method of equating the different standards adopted by different doctors or teachers.

However, in recent years, educational psychologists have come under heavy fire from a number of younger writers, like Dr. Stott, and Dr. Campbell, and Dr. McLeish, for our “naive reliance,” as they call it, our naive reliance on tests. “The Educational Authorities of those days,” said Dr. Stott, “were only too glad to hand on their headaches to a pseudo-scientist and meekly accept the findings of a pseudo-test.” In a book published only a few months ago, [Dr. McLeish \(1963\)](#) sharply attacked what he calls the educational psychologist’s conception of “an immutable, adamant IQ.” Tests constructed by an academic psychologist, he says, are bound to display an academic bias. As a result, “the working class child” is badly penalized—prevented from following a university career, and often relegated, quite unfairly, to a school for the feeble-minded, all on the basis of ten minutes testing. Well since Dr. McLeish’s criticisms have been widely publicized, may I, as your patron or advocate, be permitted in passing, just a word or two of reply?

I find it difficult to avoid the conclusion that these younger critics glean their notions of what went on in those early days from each other rather than from the contemporary reports. So far from meekly accepting the psychologist and his methods, educational authorities were acutely skeptical, and their medical officers were outspoken opponents. My own appointment was strictly probationary, and was disarmingly announced as an experiment only. Had my diagnoses been as inaccurate as Dr. McLeish and others suggest, I should have lost my job at the end of three years, if not before.

I have kept careful record of the after-histories of almost every case referred to me. Indeed, after half a century, I still am in touch with quite a number of them. And a year or two after my appointment I learnt that my most active antagonist—Dr. Shruballs, the school medical officer, had been doing the same—keeping a private check on all my decisions as, indeed, I had been doing on his. Later on he confessed to me that he and his colleagues were quite unable to catch me out, at any rate, in any serious error. And, when my initial period of appointment expired, he became one of my warmest supporters. And here if I may, I should like to take this opportunity of expressing my deep indebtedness to all those who at first eyed me askance as a rival, but later came to give me and my various helpers all the co-operation I could desire.

As to the use of “quotients,” or “ratios,” they were introduced because they were fairly intelligible to the teacher, whereas of course, percentiles and standard deviations would not have been. From the outset, however, we insisted that the IQ was *not* invariably constant, and certainly not suited for purposes of research. As for class bias, the aim and effect of the intelligence tests were exactly the reverse. The Education Officer himself pointed out in one of his farewell reviews (and he supported his statements with figures), that the new psychological methods must have saved, these are his words, “Hundreds of children who had been handicapped by a home in the slums from a stigma of mental deficiency, helped other hundreds who were dull and backward, and enabled almost as many from the working classes to get to a grammar school and even to a university when under the older procedure they would undoubtedly have failed.”

So much then for the first type of case, the borderline defective. The second type, to which we paid increasing attention as time went on, were those suffering from some special

disability: inability to read, spell, to learn arithmetic, as well as other less familiar deficiencies; defective mechanical memory; defective imagery; as well as various temperamental hindrances. And it was here that our remedial methods were often most effective.

The third group of cases I've already briefly mentioned—cases at the top end of the intellectual scale. Quite frequently teachers would appeal to the psychologist's judgment in regard to gifted or supernormal pupils. Pupils may be considered definitely worthy of a scholarship but, who, nevertheless, had come to grief in the one day that the scholarship examination which was formerly known in those days as the eleven-plus.

Nor were we interested solely in general intelligence. There were occasional instances of high specific ability or talent: pupils with exceptional artistic, musical or technical gifts. Teachers, I think, are not quite quick enough to spot children who are specialized in ways outside the narrow scope of the traditional curriculum. At least half a dozen were awarded by the Council, what were called "Special Talent Scholarships," and several of them have since made their name.

Another group, my fifth, also I think failed to get adequate attention; mainly youngsters who were emotionally rather than intellectually subnormal—the potential neurotics and the maladjusted.

Last of all there were the children who seemed morally subnormal, that is, the potentially delinquent. Every war is followed by a marked increase in delinquency and crime, and the First World War was no exception. As a result, the attention of both psychologists and educationists was now turned into a fresh direction. The delinquent youngsters and teenagers, however, proved a far more elusive problem than the intellectually subnormal.

We've all of us, I suppose, been reading recently [Professor Vernon's latest book \(1964\)](#) on *Personality Assessment*, and all of us I expect, would readily endorse the conclusion he has so convincingly maintained, that the assessment of moral qualities is infinitely more difficult than the measurement of intellectual ability or school attainments. And I for one would here agree with [Dr. McLeish \(1963\)](#) that the academic psychologist is often at a disadvantage. The academic psychologist—particularly of those early days—would have been quite at home with Little Eric, as Dean Farrar drew him, or with Kipling's Stalky and Beetle; but the habits and outlooks of the Artful Dodger were as unfamiliar to him as those of the Trobriand Islanders. My first step therefore was to try and know these people in their own social and family environments. I lodged first at a settlement in the slums; I spent weekends as a guest in the homes of dock-laborers and once of a burglar; and I even for a while got accepted as a member of a criminal gang in Soho. Fortunately, I was not detected or thought of as a "copper's nark," but I did hear afterwards that I was popularly known as "Charlie the Parson."

Born as I was within the sound of Bow Bells and educated in a school just opposite Newgate Jail, I could drop into Cockney whenever I pleased. And although our school was residential, we were always free on half-holidays to roam where we liked without any parents to criticize. When we got tired of the Abbey, or the Tower of London, we set out to explore the purlieus of China Town and Limehouse, and find Fagan's Hideouts in Hoxton and the Docks. And this background knowledge was invaluable to me 20 years later when I came to study the young London delinquent ([Burt, 1925](#)). I recommend every educational psychologist to start by actually living among his cases and with their families.

Well, from all this, you'll readily understand that during my first few years with the Council most of my working days were occupied with these individual case studies. Whatever the problem might be, instead of calling each child up to the office, I found it, I always found it, far more effective to study him, as it were, *in situ*, and that of course meant visiting him in the school, calling at his home, and watching him with his play-fellows larking in the streets.

After the [1914–1918] war was over, however, I devoted myself more and more to the second main item in my scheme of work—the construction and standardization of tests. These included not only the tests of ability already mentioned, but also tests for attainments in the various school subjects. For testing the ability of the gifted, we developed written group tests of various kinds—opposites, analogies, reasoning, and completion tests. These were introduced into the scholarship examinations and still figure in tests for the eleven-plus. But here we tried hard to get away from mechanical and purely verbal tests. We tried to include tests for intuitive, inventive, imaginative ability. Unfortunately, the former are much easier to construct and very much easier to mark and so they seem almost entirely to have ousted the latter. That means, I fear, that both our earlier scholarship examinations and our present eleven-plus, we tend to concentrate too much on the academic type of child—the good grammar school scholar—and to ignore the more original and imaginative and creative type of child.

The third objective in our program was to organize and carry out at stated intervals, surveys of large and representative samples of the entire school inhabitants. The Education Officer was always perturbed lest there was a decline in intelligence and attainments and there were two points that we always wanted to determine. First of all there was a widespread fear lest the changes in the birthrate had produced a gradual lowering in the general intelligence of London and indeed in the nation as a whole. Secondly, many educationists and school inspectors were inclined to think that freer methods of instruction, or more liberal curriculum, were tending to reduce accuracy in the mechanical and basic subjects: spelling, writing, and arithmetic. And, may I hope that in the near future these various surveys will be repeated.

The last item on our agenda consisted (in the well-worn phrase) of “any other business.” The psychologist was expected to be ready to report on any specific problem raised by the Education Committee or the Education Officer himself. I have said that half my free time was devoted to research but actually all my research, all my work in the Council's Schools was of the nature of research. Even the individual cases, just because they were “cases”—problem pupils referred to the psychologist for special inquiry—had each to form the subject of a small intensive investigation. And I can imagine no place better for purposes of psychological research than the County of London. London exhibits an amazing variety of types and problems. Its university departments are always ready to provide trained specialists, and its hospitals provide records going back, very often, to the child's birth, or even the medical history of the parents. And the Council itself, we found, had a surprising array of files and records relating not only to parents but to grandparents and remoter relatives as well.

May I illustrate my point by just one instance? I should like to refer to what Galton described as one of the most fruitful lines of psychological investigation; the study of identical twins. With the aid of the council's records, and occasional visits to Somerset House,

we found an unexpected number of identical twins who had been reared apart. And so, I think, one of the results, one of the most useful results of our inquiry, was this unique compilation, increasing steadily year by year, of case studies of identical twins who had been reared in very different home circumstances. In all these various inquiries, we received invaluable assistance not only from teachers, doctors, care committee workers, and the like, but also from my own fellow psychologists at the Institute of Industrial Psychology, and finally too, my research students when I moved on to the Institute of Education and eventually University College. Indeed, we are still analyzing some of the masses of data we then collected.

By now you will have already guessed the lesson that I am eager to preach; the moral to which I am trying to lead up. It is that the work of the educational psychologist is essentially that of a scientific investigator; in a word it is research. In the early days, whether we were dealing with individual cases or with general surveys, our researchers were concerned primarily with ascertaining causes. Now I fancy, the causes are pretty well understood and today the real need is for further research into methods of treatment, particularly the different value of treatment for different types of case.

The science of applied physiology, medicine as we call it, has largely been built up on the basis of first hand observations by the practicing doctors themselves. And the same should hold good of the various branches of the science of Applied Psychology and of Educational Psychology perhaps most of all. And that must imply a thoroughgoing scientific approach. Methods must be scientifically planned. Observations must be systematically recorded. With all that, of course, you will agree. But above all, there must be, I think, a ready means, like the *British Medical Journal* in the case of Medicine, for reporting and publishing the results obtained; case studies, as well as the results of more general inquiries. And in that way, and in that way alone, will the knowledge and experience of each be placed at the disposal of all.

## Acknowledgements

I thank Rodney Maliphant, ex-University College, London, who sent me the tape of Burt's speech, and Adrian R. Allan of the Burt Archives at the University of Liverpool for valuable assistance. The Burt Archives has a copy of this tape (and other Burt tapes too), as do the Archives of the British Psychological Society at the University of Staffordshire.

## References

- Beloff, H. (Ed.) (1980). A balance sheet on Burt. *Bulletin of the British Psychological Society*, 33 (Supplement).
- Bouchard, T. J. Jr., Lykken, D. T., McGue, M., Segal, N. L., & Tellegen, A. (1990). Sources of human psychological differences: the Minnesota study of twins reared apart. *Science*, 250, 223–228.
- Burt, C. L. (1909). Experimental tests of general intelligence. *British Journal of Psychology*, 3, 94–177.
- Burt, C. L. (1925). *The young delinquent*. London: University of London Press.
- Burt, C. L. (1937). *The backward child*. London: University of London Press.
- Burt, C. L. (1940). *The factors of the mind*. London: University of London Press.

- Burt, C. L. (1943). Ability and income. *British Journal of Educational Psychology*, 13, 83–98.
- Burt, C. L. (1966). The genetic determination of differences in intelligence: a study of monozygotic twins reared together and apart. *British Journal of Psychology*, 57, 137–153.
- Burt, C. L. (1969). Intelligence and heredity: some common misconceptions. *Irish Journal of Education*, 3, 75–94.
- Burt, C. L. (1975). *The gifted child*. London: Hodder & Stoughton.
- Fletcher, R. (1991). *Science, ideology and the media: the Cyril Burt scandal*. New Brunswick, NJ: Transaction.
- Fulker, D. W., & Eysenck, H. J. (1979). Nature and nurture: heredity. In H. J. Eysenck (Ed.), *The structure and measurement of intelligence* (pp. 102–132). New York: Springer.
- Hearnshaw, L. (1979). *Cyril Burt: psychologist*. Ithaca, NY: Cornell University Press.
- Jensen, A. R. (1992). Scientific fraud or false accusations? The case of Cyril Burt. In D. J. Miller, & M. Hersen (Eds.), *Research fraud in the behavioral and biomedical sciences* (pp. 97–124). New York: Wiley.
- Joynson, R. B. (1989). *The Burt affair*. London: Routledge.
- Juel-Nielsen, N. (1965). Individual and environment: a psychiatric-psychological investigation of monozygotic twins reared apart. *Acta Psychiatrica Scandinavia*, 183 (Supplement).
- Kamin, L. (1974). *The science and politics of IQ*. Hillsdale, NJ: Erlbaum.
- Mackintosh, N. J. (Ed.) (1995). *Cyril Burt: fraud or framed?* Oxford: Oxford University Press.
- McLeish, J. (1963). *The science of behavior*. London: Barrie & Rockliff.
- Newman, H. H., Freeman, F. N., & Holzinger, K. J. (1937). *Twins: a study of heredity and environment*. Chicago: University of Chicago Press.
- Pedersen, N. L., Plomin, R., Nesselroade, J. R., & McClearn, G. E. (1992). A quantitative genetic analysis of cognitive abilities during the second half of the life span. *Psychological Science*, 3, 346–353.
- Rushton, J. P. (1994). The egalitarian dogma revisited. *Intelligence*, 19, 263–280.
- Rushton, J. P. (1997). Sir Cyril Burt “not guilty”. *Contemporary Psychology*, 42, 655.
- Shields, J. (1962). *Monozygotic twins*. Oxford: Oxford University Press.
- Sunday Times* (1976, October 31, November 7, 11, 14). Columns and correspondence on Burt controversy.
- Vernon, P. E. (1964). *Personality and assessment: a critical survey*. New York: Wiley.
- Wade, N. (1976). IQ and heredity: suspicion of fraud beclouds classic experiment. *Science*, 194, 916–919.