Genetics and education: a second look

The reaction against admitting the existence of a genetic complement in intelligence is an adverse reflection on the psychological make-up of the protestors. It is time to give up the egalitarian ideal in education and work towards an educational pluralism that will allow greater self-fulfilment for individuals at all intelligence levels

Today (12 October), Methuen publishes Genetics and Education, a collection of papers by Professor Arthur Jensen, including "How much can we boost IQ and scholastic achievement?", which, when first published in the Harvard Educational Review in 1969, provoked a worldwide storm of protest. By suggesting that there is an important genetic element in intelligence, Jensen left himself open to a wide range of attacks from proponents of the "environmentalist" approach. In a 70-page preface to Genetics and Education, he describes the harassment he received following publication of his views. This ranged from obstruction by the Harvard Educational Review's editorial board who, at one time, refused to let him have reprints of his paper and categorically denied that they had asked him to include a section in his paper on racial intelligence differences (although he reproduces a solicitation from the board specifically asking for this to be included), to disruption of his lectures by Students for a Democratic Society. He also encountered negative reactions from many other academics which, he claims, were not based on rational argument. In the following extract, Jensen offers a psychological explanation of the behaviour he has encountered in the past three years, and goes on to define what he sees as the major need for restructuring the educational system.

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Why do so many otherwise objective and dispassionate intellectuals display such vehement moral indignation and even zealous combativeness toward any explanation of human behavioural differences, especially social class and racial differences, that propounds genetic factors as playing a part? Some social scientists have felt so strongly about this that they have cancelled their participation in research conferences or symposia when they learned that I was to be among the participants.

Why in some circles is the person who is critical of 100 per cent environmentalistic attempts to explain human differences viewed as a moral pariah? With the exception of such radical political groups as the Students for a Democratic Society, whose aim seems to be to create dissension and disruption by any means they can possibly exploit, I believe that those who have most strongly opposed me on essentially non-scientific grounds have done so out of noble but mistaken sentiments. Their motives are not entirely discreditable. We all feel some uneasiness and discomfort at the notion of differences among persons in traits that we especially value, such as mental abilities, which have obviously important educational, occupational, and social correlates. There are probably no other traits in which we are more reluctant to notice differences, and if circumstances force us to notice them, our first tendency is to minimise them or explain them away. This is even more true when we are confronted with group differences; it seems to us so intrinsically unjust that some socially defined groups, through no fault of their own, should be disadvantaged with respect to traits which all persons value that we are easily inclined to deny such differences or at least attribute them to relatively superficial and external causes and appearances, such as prejudice, biased tests and observations, discriminatory schooling, racism, and other similar explanations which tend to place blame and guilt on other persons and forces in society. And there is considerable plausibility to such thinking because we all know of real instances of these undesirable factors, and we prefer to go on believing they are sufficient explanation for the apparent human differences we are faced with.

There seems to be a strong human proclivity to place *blame* for disadvantage or misfortune; the placement of *personal* blame substitutes for the scientific analysis of causality. In ancient times natural disasters such as volcanoes, earthquakes, and floods were blamed on the ill-will of personified gods. The physical sciences now provide other, quite different explanations of these phenomena. In some respects, however, the social sciences still have not moved beyond personified blame, levelled at "society", "the establishment", "capitalism", or whatever—personified entities at which we can vent our anger much as one can feel angry at an individual who intentionally commits a personal offence.

In my experience of lecturing to a variety of audiences—students, teachers, parents, research scientists—on topics in psychology and education, I have found that any statement or trend of thought that minimises, explains away, glosses over, or places blame on personified institutions for mental and educational differences between individuals or groups is met by an unmistakable rush of warm approval from the audience. I have experienced it when others were speaking and I was among the audience; and I have experienced it when I was the speaker. Nothing, not even loud and prolonged applause, is more reinforcing to a speaker, reinforcing in the very Skinnerian sense of shaping the speaker's utterances further toward eliciting more waves of warm approval from the audience. The lessening of the audience's anxiety is almost palpable, with bits of laughter and the rustle of relaxing tensions among the listeners. And the speaker's trend in the direction that produces this effect is reinforced, often unconsciously and even against his will. Constant awareness,

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vigilance, and self-discipline are needed in this field to prevent one's lecturing behaviour, and even one's thinking, from being shaped by the audience's emotional reactions.

Colleagues have brought up a variety of more intellectual reasons for denying a genetic basis for behavioural differences. One of the commonest reasons is that such knowledge, if it is established and generally accepted by the scientific and intellectual community, might be used by some persons for evil purposes, to promote racial prejudice, discrimination, and segregation and to justify or rationalise the political suppression and economic exploitation of racial minorities and the nation's working class in general. As I point out in my paper on ethical issues in genetic research, these consequences do not logically follow from the recognition of genetic behavioural differences. Nearly all scientifically important knowledge can be used for good or ill.

Intellectuals should be concerned with men's purposes and the uses to which knowledge will be put; they should never think in terms of suppressing knowledge or the quest for it. One colleague wrote that in his opinion some intellectuals could not view my Harvard Educational Review article objectively because they feel that unless human equality in abilities, and especially racial equality, is a fact, a society like ours cannot be made to work and progress is impossible; therefore equality *must* be a fact. He drew a religious analogy: "If there weren't a Heavenly Father to sustain me in my agonies, I couldn't go on living; therefore God exists".

Some of the reluctance to study the evidence objectively in this field results from confusion of the concept of genetic inequality, that is to say, differences in gene frequencies for particular characteristics, with the moral ideal of equality expressed in "all men are created equal", meaning equality before the law, equality of political and civil rights, and equality of opportunity in education and employment. Realisation of the moral ideal of equality proclaimed in the Declaration of Independence, of course, does not depend upon either phenotypic or genotypic equality of individual's psychological characteristics.

Another unfortunate misconception has been the notion that when we speak of genetic differences between populations, whether they be social classes or various racial groups, we are speaking about differences that are somehow *sui generis*, intrinsic, unchangeable, protoplasmic differences. But this notion is completely wrong. It is the kind of ignorant belief promulgated in racist tracts. The genetics of population differences deals with specific gene frequencies or "gene pools" differing in the frequencies of many genes, effects which come about mainly from varying degrees of geographic and social isolation of breeding groups and natural selection of various characteristics by differing environmental pressures. However unsusceptible the individual genes themselves might be to most environmental influences, there is nothing at all "intrinsic" or "immutable" about human *gene pools*.

Has any new research appeared since the original publication of the HER article in 1969 that would require substantive revision of any of its main points? None has come to my attention, although I have been closely in touch with research in this field. The question is most often raised about the failure of large-scale compensatory education programmes, the claim being made that these were evaluated prematurely in 1969. But nothing that has happened since then would warrant any change in the general conclusions about compensatory education which I summarised at that time. In 1969, the largest and best known of the federally sponsored compensatory programmes, Head Start, had not yet been officially evaluated, so I was not able to include it in my summary. In 1968, however, the Office of Economic Opportunity (the government agency which administered Head Start) commissioned the Westinghouse Learning Corporation in collaboration with the Ohio State University to make a large-scale study of the effectiveness of Project Head Start. The study was completed in June 1969. The central question of the study was whether the pre-school Head Start programme had any appreciable effect on the subsequent scholastic performance of disadvantaged children as contrasted with "control" children of similar background who had not been exposed to Head Start. The Summer Head Start programme showed no positive effects, but the full-year Head Start showed some positive effect on assessments of school readiness and verbal abilities in the first and second grades. The effects were statistically significant given the large sample sizes, but in absolute terms they were too small to be of any practical educational importance.

None of the positive effects approached the magnitude of half a standard deviation above the control samples and at second grade the Head Start children were, on the average, at the 20th percentile on national norms of scholastic achievement (the 50th percentile, of course, being the national average).

The Westinghouse evaluation stirred up public controversy and some technical criticisms about details of statistical methodology, but none of the discussion brought forth any evidence which would support conclusions opposite to the essentially negative findings of the Westinghouse Report.

A common finding in most compensatory programmes that have been evaluated, including Head Start, is the subsequent fade-out or levelling off after children leave the programme. After six months to a year in regular classes their scholastic performance is generally indistinguishable from that of comparable children who had not been given the compensatory education. An enormous number and variety of compensatory programmes have been tried, and many have claimed success, but unfortunately, closer scrutiny usually disproves such claims; they are too often based on subjective impressions and faulty or inadequate evaluation.

A recent development in compensatory

education is known as "performance contracting". Private business firms specialising in the application of various new instructional programmes and technologies intended to produce greater than the usual gains in the scholastic achievements of disadvantaged children are contracted by a public school system to manage all or some part of the school's instructional programme. The firm is paid according to pupil performance, for example, receiving compensation only for those children whose achievement gains per year in school, as assessed by objective tests, are equal to at least the average of national norms. Early reports of these efforts in the popular press were extremely optimistic; it appeared that private enterprise and the vigorous application of new technology to instruction had finally succeeded where government-financed compensatory programmes had so overwhelmingly failed.

A recent study of these programmes, conducted by a private research organisation, was commissioned by the US Department of Health, Education, and Welfare. Eight different performance contracting programmes in various parts of the country, involving some 3400 pupils were assessed. It was found that the underprivileged pupils on the average scored no better on standardised achievement tests than similar children in regular classes. The average monthly gain in reading, for example, was about 80 per cent of the national norm, which is typical for children in poverty-area schools. The gains in mathematics averaged about the same. In brief, thus far no new instructional programme has been discovered which, when applied on a large scale, has appreciably raised the scholastic achievement of disadvantaged children in relation to the majority of the school population.

Such evidence can mean a counsel of despair only to the extent that we cling to the belief that equality of educational opportunity or equality of environmental advantages should necessarily lead to equality of performance. This, I believe, is proving to be a false hope. It is the responsibility of scientific research in genetics, psychology, and education to determine the basis for realistic solutions to the problems of universal public education. Though it may be premature to prescribe at present, I venture the prediction that future solutions will take the form not so much of attempting to minimise differences in scholastic aptitudes and motivation, but of creating a greater diversity of curricula, instructional methods, and educational goals and values that will make it possible for children ranging over a wider spectrum of abilities and proclivities genuinely to benefit from their years in school. The current zeitgeist of environmentalist egalitarianism has all but completely stifled our thinking along these lines. And I believe the magnitude and urgency of the problem are such as to call for quite radical thinking if the educational system is truly to serve the whole of society.

We have invested so much for so long in trying to equalise scholastic performance that we have given little or no thought to finding ways of diversifying schools to make them rewarding to everyone while not attempting to equalise everyone's performance in a common curriculum. Recommendations have almost always taken the form of asking what next we might try to make children who in the present school system do not flourish academically become more like those who do. The emphasis has been more on changing children than on revamping the system. A philosophy of equalisation, however laudable its ideals, cannot work if it is based on false premises and no amount of propaganda can make it appear to work. Its failures will be forced upon everyone.

Educational pluralism of some sort, encompassing a variety of very different educational curricula and goals, will I think, be the inevitable outcome of the growing realisation that the schools are not going to eliminate human differences. Rather than making over a large segment of the school population so they will not be doomed to failure in a largely antiquated élitist-oriented educational system, which originally evolved to serve only a relatively small segment of society, the educational system will have to be revamped in order to benefit everyone who is required by the society to attend schools. It seems incredible that a system can still survive which virtually guarantees frustration and failure for a large proportion of the children it should intend to serve. From all the indications, public education in such a form will not much longer survive.

But we should not fail to recognise that to propose radical diversity in accord with individual differences in abilities and interests, as contrasted with uniformity of educational treatment, puts society between Scylla and Charybdis in terms of insuring for all individuals equality of opportunity for the diversity of educational paths. The surest way to maximise the benefits of schooling to all individuals and at the same time to make the most of a society's human resources is to ensure equality of educational opportunity for all its members.

Monolithic educational goals and uniformity of approaches guarantee unnecessary frustration and defeat for many. On the other hand, educational pluralism runs the risk that social, economic, ethnic background or geographic origin, rather than each child's own characteristics, might determine the educational paths available to him. The individual characteristics appropriate for any one of a variety of educational paths and goals are to be found everywhere, in every social stratum, ethnic group, and neighbourhood. Academic aptitudes and special talents should be cultivated wherever they are found, and a wise society will take all possible measures to ensure this to the greatest possible extent. At the same time, those who are poor in the traditional academic aptitudes cannot be left by the wayside. Suitable means and goals must be found for making their years of schooling rewarding to them, if not in the usual academic sense, then in ways that can better their chances for socially useful and self-fulfilling roles as adults.