

# SOME RECENT STUDIES OF INTELLIGENCE

A Survey of the Society's "Occasional Papers"

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THIS brief survey of the second, third, and fourth "Occasional Papers on Eugenics"\* must open with a word of appreciation to the editor of the series for his success in bringing together authors of such high eminence in their professional fields who, although they are dealing with matters of great complexity and great difficulty, yet write with a clarity and conciseness rarely found in social scientists. Add to these qualities the paramount interest of the subjects dealt with—*Intelligence and Fertility*,† *The Trend of National Intelligence*,‡ *Psychological Approaches to the Biography of Genius*§—and the great value of these publications becomes apparent.

The importance of these contributions is increased by the fact that each of the authors describes large-scale experimental studies which he himself has personally carried out or directed; these studies were started several decades ago, and the authors are able in their discussions to deal with the criticisms and objections which have been voiced in the meantime. Some of these criticisms are brought together in an article by Julian Blackburn, and in reviewing the original papers it will be convenient to deal with this article also, as well as with the reply by Sir Cyril Burt.||

The essential point of Burt's and Thomson's argument is probably well enough known to eugenists to need no more than cursory mention. It might be presented in a series of steps: (1) Intelligence is largely an

innate quality. (2) People with lower intelligence tend to have more children than people with higher intelligence. (3) The intellectual level of the population is decreasing in consequence of these facts at a rate of approximately 1.5 to 2 points of I.Q. per generation—possibly a little less, possibly a little more. (Step (1) is not strictly speaking essential for this conclusion; even if intelligence were entirely due to environmental factors, (3) would follow from (2) alone. However, on this basis the problem would cease to be a eugenic one, and become educational, and in Burt's and Thomson's formulation step (1) is included in the argument, as it undoubtedly ought to be.)

The consequences of such a decline are shattering in their implications. A loss of a few points of I.Q. per generation may not appear very serious, but, as Burt shows, "if the rate [of loss] assumed continues, then in little over fifty years the number of pupils of 'scholarship' ability would be approximately halved and the number of feeble-minded almost doubled." It is doubtful if civilization as we know it could survive such a catastrophe.

Both Burt and Thomson are modest in evaluating their data. They do not claim that their work, or the similar researches carried out by Cattell, Fraser Roberts, and others, definitely prove their contention; what they claim is that all the available evidence points clearly to the existence of a grave problem, and that the time has come for some very large-scale investigation to be carried out to assess the exact amount of the decline, preferably by the testing of total populations, rather than samples, and by actual direct comparison of different generations. It is difficult to see how that conclusion can be controverted, and there would be very few psychologists nowadays who would

\* Published jointly by the *Eugenics Society* and Hamish Hamilton Ltd.

† By Sir Cyril Burt. Pp. 43. Price 2s.

‡ By Professor Godfrey Thomson and other authors. Pp. 35. Price 2s.

§ By Professor Lewis Terman. Pp. 24. Price 1s. 6d.

|| *Population Studies*, 1, 2, 1947. "Family Size, Intelligence Score and Social Class," by J. Blackburn. Pp. 165-76. By C. Burt, pp. 177-86.

not be found in agreement with Burt and Thomson in this matter.

In the article cited above, Blackburn sets out the main arguments which might be adduced against this consensus of opinion. His first point is that the authors whose work he criticises have underestimated the effect of environment on intelligence. Burt, in an appendix to his pamphlet, enumerates the many diverse ways in which psychologists have tried to evaluate the relative contribution of nature and nurture, and Blackburn cannot truly be said to have added anything to the general argument. He shows, indeed, that environment contributes *something* to intelligence test scores—a point on which Burt was one of the first to insist from the very earliest days of the testing movement—but he fails to show any reason for believing that this *something* amounts to more than 50 per cent of the total variance of general intellectual ability, as claimed by Burt. Indeed, Burt is if anything excessively conservative in mentioning this value; many people would put the contribution of innate factors nearer to 80 per cent of the variance.

Blackburn's other criticisms relates to the estimate of Burt and Thomson of the correlation between intelligence and fertility, which is put by them in the neighbourhood of  $-0.2$ . His argument here appears to rest in the main on a statistical fallacy; he quotes figures from *restricted ranges* of ability in which lower correlations are found between intelligence and fertility, and argues from these figures to the total population without using the proper "correction for selection" formula of Pearson's. Burt in his reply shows that when this is done the results fall in line with his own. Thus it does not appear that the conclusions drawn by Burt and Thomson can be regarded as in any degree invalidated.

While the two pamphlets reviewed so far deal with roughly similar problems, Terman's paper describes the history and the most recent follow-up studies of his monumental work on genius, in which approximately 1,000 highly gifted California school children were observed and tested during the period from 1922 to 1946. This work was

reported in four large volumes, the latest one of which has only recently appeared, and is summarized on the last few pages of this pamphlet.

The results are so fascinating that no one interested in the natural history and social importance of intelligence should fail to acquaint himself with the paper. As might have been expected, the total group of children in their adult lives are very much more successful than would have been an unselected group. But perhaps even more interesting than this finding is another one which contrasts a successful and an unsuccessful group of "geniuses" in terms of their outstanding character-traits. In order of greatest difference, these are: perseverance, self-confidence, integration toward goals, and freedom from inferiority feelings. In terms of recent personality research, it appears therefore that the general personality trait labelled "neuroticism" is of very great importance in the success or failure of equally intelligent persons in life. It is reassuring to note that the non-neurotic, successful group had fewer divorces, more marriages and more children (1.7 as against 1.2) than the neurotic, failure group. If "neuroticism" is an inheritable quality, as many psychologists believe, this may suggest that the racial stock is getting progressively less neurotic; this ought to be followed up by research on less intelligent and less highly selected groups.

It is reassuring to find that plans are being made to ensure the continued follow-up of the entire gifted group at least until 1970, by which time the ultimate fertility of the group and its sum total of accomplishment can be more accurately assessed. We may emphatically endorse Terman's concluding remark: "Enough has already been learned to demonstrate that children of I.Q. 140 or above are potentially a nation's most precious asset. The demonstration that this is true should be well worth the 150,000 dollars which the research... has cost to date." And the hope may perhaps be expressed that similar large-scale researches may be begun in this country also, for the greater advancement of the social good.