

Book reviews

Measuring Minds: Henry Herbert Goddard and the Origins of American Intelligence Testing. By L. Zenderland. (Pp. 448; £45.00.) Cambridge University Press: Cambridge, 1998.

Intelligence testing is a subject that arouses strong feelings among the general public. Inspection of media coverage of this topic shows that the lay view of intelligence also has the interesting feature of being totally out of alignment with the understanding of professionals working in the field. The current expert consensus on intelligence was recently summarized in an American Psychological Association report (Neisser *et al.* 1996). This report concludes, among other things, that IQ scores are meaningful in real-world terms, in that they are good although by no means perfect predictors of educational and occupational success; that intelligence is correlated with performance on simple perceptual tasks such as inspection time; and that individual differences in intelligence have a substantial heritable component. The findings on simple laboratory tasks, far removed from the conventional pencil-and-paper tests usually associated with the measurement of intelligence, hold out a tantalizing promise of an enhanced understanding of the biological basis of intelligence in terms of more basic processes such as mental speed or efficiency. Neither these findings nor the expert consensus have, however, percolated through to non-specialists including, crucially, journalists. Views diametrically opposed to the above (IQ tests measure nothing meaningful; IQ scores are purely environmentally determined; any use of intelligence testing serves as an instrument to reinforce existing social inequalities, etc.) are frequently encountered even in the quality press, and indeed in the writings of certain psychologists.

What is the cause of this state of affairs? While the lack of public understanding of science is of course a general problem, it must be acknowledged that conveying the facts about

the meaning of intelligence and how it may be measured to non-specialists poses a particularly hard task. The topic of intelligence testing carries with it a heavy load of historical and pseudo-historical baggage, in particular, associations with the eugenics movement and various racist ideologies. It is this history, together of course with the continuing controversy surrounding the magnitude and causes of measured intelligence differences between racial groups (Herrnstein & Murray, 1994; Neisser *et al.* 1996), which sets the tone of public debate.

While no scientific area can (or should) be freed from its history, when a topic arouses such strong feelings as that of intelligence testing it is vital that accurate historical information should be readily available. Failing proper historical documentation, inaccurate versions of the facts will inevitably proliferate and triumph. In this context *Measuring Minds*, Leila Zenderland's carefully written and scholarly documentation of the life and work of Henry Herbert Goddard, the pioneer of intelligence testing in the USA, is to be welcomed. In this book Goddard's life is thoroughly documented and the parallel theme of the interaction between the development of intelligence testing and the social and intellectual climate, which ensured both its ready acceptance and ultimate misuses, is developed.

Goddard came from an unprivileged Quaker background and his route to success and eminence was not straightforward. He initially worked as a teacher; his interest in psychology was engendered by the leading psychologist G. Stanley Hall. Goddard was able to move to Hall's university to study psychology and obtained his Ph.D. in 1899. Goddard's next post was as a professor at a teacher training college and his research career did not really begin until he made an unusual career move in 1906 to the Vineland Training School for the Feeble-Minded. At this time no systematic diagnostic criteria for the varying degrees of mental retardation existed and Goddard had already begun to take an interest in the problems of how the condition of 'feeble-mindedness' might best

be diagnosed and assessed. At Vineland, Goddard's early attempts to develop psychophysical and aptitude-based measures of mental retardation were unsuccessful. However, a chance meeting during a study tour of Europe left him in possession of Binet's intelligence tests, which had been developed specifically for the purpose of diverting mentally subnormal children from the mainstream of the French school system into more suitable special classes.

Goddard seized the opportunity to experiment with Binet's tests at Vineland and, finding them valuable, became a highly successful campaigner for their adoption countrywide. The rapid consequence was the widespread use of intelligence testing not only in schools and institutions but also within the criminal justice system, in the assessment of the aptitudes of army recruits and, most controversially, in the screening of immigrants. A key feature of the test results was the assignment of a mental age to each child or adult tested. Goddard used the concept of mental age as a basis for classifying the 'feeble-minded', in particular coining the term 'moron' for those whose mental development was arrested in the 8 to 12 year range.

As his career in intelligence testing progressed, Goddard became increasingly convinced that 'feeble-mindedness' was a hereditary condition. In support of this proposition, he published his best-known work, *The Kallikak Family*, based on a genealogy of one of his Vineland patients. In this study Goddard demonstrated (using scientifically dubious and subjective interview data obtained by an assistant) that an eighteenth-century liaison between the pseudonymous Martin Kallikak and a 'nameless feeble-minded girl' had produced generations of feeble-minded drunks, prostitutes and criminals. By contrast, the descendants of Kallikak and his lawful wife were decent and valuable citizens. Goddard's proposed solution to the problem of hereditary 'feeble-mindedness', as exemplified by the Kallikaks, was benevolent institutionalization of the mentally unfit, who would thereby both be appropriately cared for and prevented from reproducing.

Even as the use of intelligence testing was expanding, problems began to be acknowledged. The most obvious of these, which eventually could not be ignored, was an over-diagnosis of mental deficiency, with numerous respectable

and apparently perfectly competent citizens and a large proportion of army recruits being found to have implausibly low mental ages. (These difficulties would eventually be resolved as developments in statistics and psychometrics placed intelligence testing on a firmer theoretical foundation.) At the same time, advances in genetics led to the rejection of the simplistic theories of the inheritance of mental retardation that had been advocated by Goddard and others.

In addition to these developments, the use of *The Kallikak Family* and Goddard's other works by those advocating dubious and distasteful social and political ideologies (including eventually the eugenics theorists of Nazi Germany) became increasingly conspicuous. These disreputable associations, as well as the scientific criticisms, contributed to a reaction against intelligence testing and indeed continue to this day to play a part in debate on this topic.

As various aspects of intelligence testing came to be increasingly questioned, Goddard's influence and reputation declined; to his distress the Kallikak study eventually became an object of derision. Goddard, however, showed a readiness to revise his ideas in the light of scientific criticism and was willing to admit some of the mistakes in earlier work. In particular, he acknowledged the over-diagnosis of mental retardation and adopted a more positive view on the educability of the retarded and the possibilities for their integration into society. Nonetheless, his work had sunk into low esteem by the time of his death in 1957, although he remained valued by close colleagues.

While setting out the details of Goddard's career, Zenderland clearly explicates the intellectual climate in which the development of intelligence testing in the USA took place. One important factor, which contributed to the initial enthusiasm for the tests, was a growing recognition of the need to come to terms with people on the fringes of society and the problems they created. Social changes had made these problems more visible. The growth of a well-organized public education system, which caused retarded children to be characterized as a problem group liable to impede the progress of their peers, provides one example of this process. This increasing preoccupation with those seen as problematical or disruptive to society interacted with a corresponding interest in accounting for

phenomena such as criminality and mental retardation using the insights of the emerging science of genetics.

One important point that emerges clearly from this biography is that Goddard does not fit the right-wing, racist category to which he is sometimes assigned. He in fact categorized himself as politically progressive and his published work is free of the racist and xenophobic tone adopted by many of his contemporaries. A lack of understanding of the poor and deprived, shading into prejudice, is however apparent in his writings.

A review of Goddard's achievements suggests that he was a competent scientist but not a great one. In trying to come to grips with 'feeble-mindedness', his instincts were sound. He appreciated the need for the quantitative assessment of mental deficiency and, coming across Binet's scales, immediately realized their potential value and performed appropriate experiments to assess their usefulness. Someone of lesser scientific abilities would either not have realized the significance of Binet's work, or would have lost momentum somewhere between realization and experimentation. His idea of seeking a genetic cause for 'feeble-mindedness' was scientifically legitimate although, as modern work on the genetics of intelligence has shown, he was mistaken in adopting a Mendelian single-gene model rather than a biometrical multiple-gene model. He was also astonishingly blind to alternative cultural and environmental explanations of mental deficiency and socially undesirable behaviour, and showed no awareness of the numerous methodological problems in his work. (His published papers displayed a weakness in statistics, and even in simple arithmetic.) The most severe flaws in his work were, however, caused by his failure to delineate a sufficiently clear boundary between the process of scientific research and the beliefs that he and others held about what the ills of society were and how they might be addressed.

Zenderland's book performs a valuable function both in putting Goddard's life and career on record and in drawing out the associations between his work and the intellectual climate of the time and how this climate influenced the development of intelligence testing in the USA. This book can be unhesitatingly recommended to anyone who wishes to understand these

topics. In terms of the general public and their attitudes to intelligence testing, a lengthy and scholarly book such as *Measuring Minds* may not be widely read, but those who do choose to read it will be well-equipped to assess the assertions made in more populist works in the same area.

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Genius and the Mind: Studies of Creativity and Temperament. Edited by A. Steptoe. (Pp. 274; £29.50.) Oxford University Press; Oxford. 1998.

The term genius implies some inexplicable mystical quality-inducing awe, and is a far rarer accolade than a Nobel Prize. This rich, informative and literate collection of papers works around ideas of genius. The writers are generally well-known within their specialities, and the disagreement between them makes for a thought provoking read. The title appears to cover everything except the physical, yet Segovia, the superb Spanish guitarist, once said that if he had not been born with a strong right thumb-nail he would not have been able to make any progress at all. Other essentials are the material things, instruments and paints and dedicated teaching, plus a fine set of genes and a ferocious motivation. Without any one of these, none of the people featured here would have been available as subjects.

David Lykken, a behavioural geneticist, using studies of identical twins separated at birth, demonstrates innate individual differences. These are true even in identical twins because they are affected by uterine environmental influences, causing differences in size, handedness and in quite enough ways for parents to tell them apart. Lykken presents the thesis that it is the configural or 'emergent' aspects of

inheritance that mark the true genius from the merely assiduous. He demolishes the idea that it is only practice that makes perfect, pointing out that perfect pitch or the aptitude to become a Olympic gold medallist are not the birthright of every child.

Genius cannot exist independently of the culture, writes Csikszentmihalyi, and one has to be a genius in something. We 'need' to believe in geniuses and that certain people will be given that adjective even when there are others around who are equally capable – 'If you cannot persuade the world that you had a creative idea, how do we know that you actually had it?'. At a given historical period, certain domains will attract more gifted young people than at other times, thus increasing the likelihood of creativity, at least for those who are able to participate.

A historical look at public performance in piano playing by Lehman and Ericsson describes how there has been a great improvement in standards over at least the last three centuries. Working through notation and investigating piano competitions, they show the heightened degree of intensity of practice for public performance and focus of competitors. This is particularly true for children, so that prodigies today take less time to reach an equivalent level of performance than those of earlier centuries. Even the audiences are likely to have received more musical training and so demand higher standards.

But almost anyone can be a genius if they work hard enough at it, according to Howe. There is no mystery, he writes, just the right mixture of opportunity 'sheer determination and persistence'. He presents this argument through the lives of four eminent men, Mill, Darwin, Faraday and Stephenson, explaining that theory and scientific investigation are systems of analysis better suited to populations than such unusual individuals. But, surely it is that very element of comparison that provides our understanding of extraordinariness.

In his description of the life of Ramanujan, the mathematician, Albert shows that he was not the romantic untutored genius who 'came out of nowhere', but had been highly tutored by his mother; 'mother and son rarely spoke of anything else'. He examines the relationship of child and parent with regard to intelligence and eminence, finding a type of focused collusion.

Unlike the gifted, he says, the genius has only one route, and so is not malleable. Certainly, genius is not measurable by any test. The young genius in tune with his family is clearly exemplified in Steptoe's brilliant in-depth portrayal of the early life of Mozart. Not only was the boy obliged to live under his father's iron discipline, but he also would have those genes and apparently his enthusiasm. Steptoe makes an interesting comparison between Nanerl and Wolfgang to show their individual differences, and how practice alone is not enough to produce a creative genius, irrespective, he says, of the differences in gender.

Due to the dearth of information on Shakespeare's early days, Simonton, Taylor and Cassandro provide evidence via a detailed analysis using historiometric techniques of his 37 plays, notably with regard to his age and what was happening at the time. They show how literary ideas take time to germinate and grow, and how he was able to manipulate words and change the use of language. Quotations nicely point up the difference between the relative dryness of research and the real thing – 'Shall I compare thee to a summer's day'.

The relationship between genius and madness is examined by Jameson via the manic depression of Byron, and by Claridge in a rather dry description of 10 cases. Although both are entirely convincing for their subjects, it is difficult to judge their generalizeability. Most geniuses are not mad, and those that become so often find their creativity dampened. Eysenck suggested that it is the widening of attention that enables both schizophrenic and creative people to take in more information than most, but that the schizophrenic person can neither select the relevant information nor store it well enough in memory to use it efficiently.

But, like all fashion, ideas of genius must change. Even now, geniuses seem to be getting rather thin on the ground. Scientific creativity nowadays is so often team-work, and empathy and cooperation mitigate against the old-style romantic idea. The trouble is that the more one knows of famous creative people the more human and less mystical they seem to be. Flights of brilliance, which change the world, are as ephemeral as Alice's jar of marmalade because each must build on the work of others. And with the increase in communication the mystery

vanishes, and contemporary brilliance in such world-figures as Bill Gates is often cynically demolished.

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Psychiatry for the Developing World. Edited by D. Tantam, L. Appleby and A. Duncan. (Pp. 374; £25.00.) Gaskell: London. 1996.

This book was written with a specific aim: to provide 'good theory and realistic practice' for Asia, Africa, South and Central America, the Caribbean and Europe. It was rather intriguing for me to find the inclusion of 'Europe' in the aim. However, there is no agreed definition of what constitutes a 'developing country' and development seems to be a continuously distributed variable (highly skewed, I am afraid). So every country in the world could be seen as permanently 'developing'.

Notwithstanding these problems with definitions, it is clear from the beginning that aiming for such a wide spectrum of countries and cultures is an incredible challenge that, inevitably, will leave a few readers dissatisfied. Most contributors (almost three-quarters) are Europeans with a reasonable international experience. As far as topics included, the editors did an excellent job covering a large number of the traditional issues and including some interesting new topics such as research and training.

The initial chapter by Malik Mubashar, although noticeably biased towards his part of the 'developing' world, is comprehensive and nicely written. The second chapter on the economics of mental health care in the developing world provides a reasonable mixture of the essential ingredients to understand better the theory and practice of this discipline. There is an excellent glossary of terms (well worth any textbook on health economics) but it is rather short on the main ingredient, practical stuff for people from the 'developing countries'. To be fair with the authors, this ingredient is rather difficult to find in the English scientific literature so this provides a good excuse for this shortfall. Chapter 3, by Jablensky comes up very reasonably balanced, full of sound theory presented in a critical but amenable way. However, I would have liked to hear a little bit more about why psychiatrists (even from developed countries) do

not use these classificatory systems. Chapter 4 by Murthy was rather disappointing, I was expecting a real treat from such a knowledgeable and experienced psychiatrist, but I was left disappointed. The theoretical parts were the usual material and practical bits were almost absent. Sometimes I have the feeling we, psychiatrists from the 'less developed world' (a new expression is 'emerging economies'), tend to find refuge on the usual theoretical material, and neglect the real puzzle to be found in the cultural diversity. Chapter 5 written by the Chief Editor was superbly written and well balanced. I must admit that I was surprised to hear that 'psychotherapy is the treatment of choice in the developed world, either alone or in conjunction with psychotropic drugs' as the introduction claims. Also, I would have liked to hear more about basic, minimal interventions that could be implemented by any trained health worker. There is a reasonable list of papers on this issue in the scientific literature. I am sure this will be part of the next edition. Chapter 6 was full of the main ingredient, sound theory nicely summarized by Duncan. However, references to 'developing countries' appeared only at the beginning. In this case, there is a reasonably large list of scientific papers on this issue from developing countries. Once again a task for the next edition.

The symptoms section begins with a chapter on schizophrenia by Gureje, nicely written but with a shortage of references from 'developing countries'. Gureje is an experienced internationalist and sound researcher in this field and I expected a more critical approach with plenty of suggestions on 'realistic practise'. The chapters on drug misuse are both useful and written nicely. However, I feel both are short of 'practical' suggestions for busy practising psychiatrists from the 'developing world'.

The epilepsy and pharmacotherapy chapters are good, but similar chapters could be found in other traditional textbooks of psychiatry. The chapter on training for mental health by WHO officers, Orley and De Girolamo, is quite interesting. It reminds us of two well known facts: (1) 'developing countries' have a tremendous shortage of psychiatrists; and (2) the traditional recipe proposed by WHO to overcome this shortfall is resorting to trained health workers to deliver interventions at the primary

health care (PHC) level. The authors state that the main role for any psychiatrist in a developing country should be educational, supervisory, and consultative. The skills needed include ability to motivate, teach, lead, supervise, and encourage the rest of the team. Hints on how to do this are exceedingly rare in the textbook. I would have liked to hear more from these experienced WHO officers on why psychiatric interventions in PHC are so uncommon in most developing countries. In fact, the impression I have is that PHC is still a neglected area in most poor countries in the world and psychiatry as a discipline does not fare much better. Regrettably, the time is coming to acknowledge these shortfalls publicly and a different strategy will need to be worked out. 'Health for All by the Year 2000', is already behind us and the balance is not promising for our discipline. Administrative and research skills might be useful but decisions are often made on political rather than logical grounds. The final chapter by Goldberg & Cruickshank deserves a special mention. It is a real treat and excellent final chapter, full of wise advice accumulated over the years and excellent examples of research

from all over the world to illustrate the main points.

Overall, I feel slightly disappointed with this book's aim of being relevant to people from all over the world. But this is almost an impossible task. As expected, chapters varied a great deal on the balance between 'good theory and realistic practice'. However, the editors did an excellent job with this challenge putting together a good blend of subjects and a reasonable mix of authors from around the world. After finishing the book, the impression I was left with was that essential facts in psychiatry are not too many and a short book containing these elements would be enough for what can be done in most countries around the world. Health professionals from the poorest countries in the world are still waiting for such a book. But waiting is a word with which people from the 'developing world' are used to living. So take your time, we are in no rush. I am sure Tantam and colleagues will be able to get closer and closer to this coveted prize with every edition of this book.

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