Talents out of balance

P.E. Bryant

Extraordinary People: Understanding "Idiot Savants". By Darold A. Treffert. *Harper & Row, New York/Bantam, London: 1989. Pp. 276. $17.95, £12.95*.*

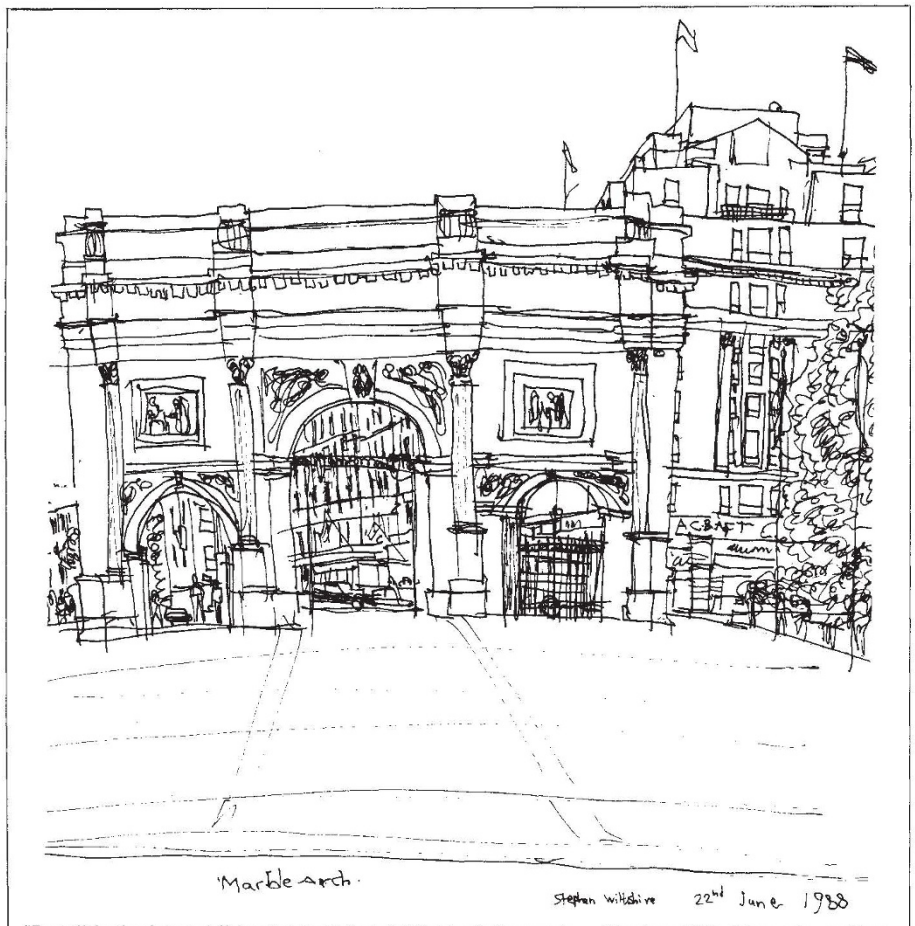
WE ARE used to a certain unevenness in people's intellectual attainments. None of us would be particularly surprised to meet a successful but innumerate novelist or a brilliant chemist who writes the most turgid prose. Sometimes, however, the imbalance between ability and inability within an individual is so pronounced that we have to take notice. Idiots savants, or 'savants' as they are called nowadays, demand that kind of attention. These are mentally retarded or autistic people with profound intellectual handicaps who manage nonetheless to acquire remarkable specific skills. Some become excellent artists; others musicians. Some make amazingly rapid mathematical calculations; others can work out in a matter of seconds the day of the week when a particular event occurred.

Darold Treffert has written the first comprehensive account of these astonishing people. His book starts with detailed histories of some of the most striking cases. These are written with gusto and they all inspire awe. He tells us, for example, of two profoundly handicapped men, with extraordinary musical memory. They can remember tunes that they have only heard briefly and can reproduce them on the piano with consummate ease. Yet one is blind, paraplegic and has an IQ of 58, and the other, with an IQ of 62, is severely autistic. There are descriptions too of autistic children who become skilled artists at an early age. One of them is an autistic girl, Nadia, who at the age of six was able to draw pictures of animals and people in movement that are so realistic and powerful that it is almost impossible to believe that they had been done by someone so young: and yet Nadia at the time was so autistic that she could not even speak. The obscure gifts of the calendrical calculators who can work out the day of the week when an event took place are also set out here, although we are told very little about the rules that they use to make these calculations.

The bulk of the book is taken up with detailed, well-written case histories. Treffert's lively interest in savants is infectious, and no one could read what he has to say about the individuals concerned without wanting to know more about the reasons for this condition. Treffert recognizes that the existence of savants poses important theoretical questions, which he tries to answer in the last part of the book. He suggests that savants develop their remarkable gifts because they have an unusually good memory. There may be something in this: individual savants obviously do have prodigious memories for visual scenes (if their talent is for drawing) or for tunes (if they are musicians). But these extraordinary feats of memory are linked to the specific skill which the savant happens to have. Treffert dwells on the fact there is some evidence that savants have a better memory in general than other people of the same intellectual level, but the truth is that the absolute level of the savants' scores in general tests of memory is rather low and could not possibly explain their prodigious talents. There are even limitations to their memory for material associated with their skill. One of the savant musicians (studied by Sloboda, Hermelin and O'Connor) remembered a piece by Grieg which he had just heard for the first time almost perfectly. But the same person did relatively poorly when he had to remember and reproduce an unusual and slightly atonal piece by Bartok.

Treffert also has a neurophysiological explanation for the condition. He claims that it is usually due to damage to the left hemisphere and consequent compensation in the development of the right hemisphere of the cerebral cortex. However the evidence that he offers for this hypothesis is thin. Scans done with computed axial tomography have shown that some savants have indeed suffered damage to their left hemisphere, but the idea of compensation in the right hemisphere remains pure speculation.

No one has yet produced a convincing explanation for the savants' talents, and so one should not chide Treffert for not managing to do so either. But he can be criticized for not spending enough time discussing what the problem really is. One must start with a simple question. We are not surprised by mild imbalances in the pattern of a person's skills (the novelist who cannot add well) and yet we are amazed at more striking imbalances (the concert pianist who is blind and retarded). Why is this so? The answer is that we expect a positive, but not a perfect, correlation between different intellectual skills. Mild imbalances do not violate this expectation: very large imbalances do. ▶



From *Extraordinary People*

"Possibly the best child artist in Britain" (Sir Hugh Casson) — Stephen Wiltshire, who suffers from autism, is now 14 and has been drawing buildings for several years.

*In Britain the book is subtitled *An Exploration of the Savant Syndrome.*

There are two possible approaches to the extreme intellectual imbalances that we find in savants. One is to argue that the idea of the positive correlation is wrong, at any rate as far as musical and artistic skills, and the ability to make arithmetical calculations, are concerned. These skills are independent: they are not affected one way or the other by our other intellectual abilities. The second approach is to accept the positive correlation as a general proposition but to argue that it breaks down in savants. They are a special case because the special nature of their disability leads them to concentrate on a particular skill at the expense of virtually everything else.

There is a pronounced difference between these two approaches. According to the first, the existence of savants tells us about the organization of intellectual skills in general. According to the second, we can only learn from them what kind of compensation is possible after early damage to the central nervous system. Treffert never makes a clear distinction between these two possibilities. That seems to me to be the reason why his book, which starts off so well with the description of these remarkable people, ends disappointingly with a failure to establish what savants tell us about the workings of their and our intellects. □

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How to win a Nobel prize

Steve Blinkhorn

Scientific Genius: A Psychology of Science. By Dean Keith Simonton. *Cambridge University Press: 1989. Pp.229. £22.50, $27.95.*

Now calm down ladies and gentlemen. There is about as much connection between *Scientific Genius* and *Teach Yourself Nobel Prizewinning* as there is between a textbook on stereochemistry and *The Joy of Sex*. Here we have not so much an account of how to do it, as of what makes other people do it. And even then the answer appears to be that Other People Do It At Random.

Well, perhaps not quite. If you really want to make your mark today as a scientific genius, it helps to be a firstborn, displaced Jewish orphan brought up in a middle-class cultured household in the United States, and to have a moderately high IQ. But then your influence over these factors is more or less restricted to the possibility of murdering a parent or two, and even that won't help much at your age.

More to the point, Simonton sets out to dismantle heroic and romantic theories of genius and replace them with a theory of his own, the 'chance–configuration' theory. So the book is structured as a statement of the theory followed by an examination of the extent to which such evidence as can be adduced supports it as compared with the alternatives. No one — the author included — would claim that these comparisons are based on a rigorous methodology or on watertight data sets. But plenty of ideas are sketched out, and interesting (if tendentious) quantifications suggested. For example it seems that creative potential is related to age by the formula $x = 305e^{-0.004t}$. Also included is a good, comprehensive bibliography which perhaps predictably contains 54 of Simonton's own publications.

Indeed, quite a lot of the value in the book is in its survey of the many, various and often almost mystical ideas that have been pressed into service to explain the phenomenon of genius. Although thorough, it is not a deep examination, and much is asked of the reader in terms either of previous knowledge in the field or of trust in the author's elliptical references to the literature. The book shows every sign of being precisely what it is, the product of a specialist's sabbatical freedom (and none the worse for that unless you are looking for a *good read*).

So what of the 'chance–configuration' theory of genius? I found myself suddenly coming over to the author's side on page 198 with the statement that "much of the current psychology of science has misplaced its emphasis on rational cognitive heuristics". Socrates had it wrong: man is merely an animal capable of occasional bouts of rationality, and maybe his rational moments are not his most creative. What Simonton is saying is that a theory of genius has the same general form as a theory of constellations or a theory of faces in the fire — which is to say no real theory at all. The more elements you have, the more complex the patterns you can see. And constellations have been known to guide space-ships. But whatever the processes of scientific creativity, genius is recognized after the event, and is an attribution of social recognition not a quality of thought.

All of which is a little sad for those who would like a do-it-yourself eminent-achievement-by-numbers kit. Because one is drawn to the conclusion, when all is said and done, that genius, like happiness, is destroyed in the pursuit thereof. □

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Psychology's Johnson

J.D. Mollon

Macmillan Dictionary of Psychology. By Stuart Sutherland. *Macmillan, London/Crossroad–Continuum, 370 Lexington Avenue, New York, New York 10017: 1989. Pp.491. £29.95, $49.50.*

Among these unhappy mortals is the writer of dictionaries; whom mankind have considered, not as the pupil, but the slave of Science, the pionier of literature, doomed only to remove rubbish and clear obstacles from the paths of Learning and Genius, who press forward to conquest and glory, without bestowing a smile on the humble drudge that facilitates their progress. Every other author may aspire to praise; the lexicographer can only hope to escape reproach, and even this negative recompense has yet been granted to a very few. [Samuel Johnson, *A Dictionary of the English Language*, 1755.]

PSYCHOLOGY has attracted its share of dictionary makers, quite a drove of them in the past two decades. But some have wanted industry, others understanding; and none of their compilations has been truly satisfactory. In Stuart Sutherland the discipline has now secured a worthy lexicographer. And there are not a few parallels between Johnson and Sutherland: they enjoy the same robust good sense; they share a somewhat cholerick style; and both are men who have placed their private melancholia in the public domain.

Dr Johnson was blunt in deflecting criticism of his dictionary: "Ignorance madam, sheer ignorance" was his response when asked why he had defined *pastern* as the knee of a horse. And Sutherland follows, writing in his preface: "It is customary for dictionary writers to acknowledge that their work is likely to contain mistakes, and to ask readers to write pointing out any they encounter. I apologise for any errors that have crept into mine, but I beg the reader not to draw my attention to them . . .".

I will here respect Professor Sutherland's sensibility, but if the sales of this excellent dictionary prompt an early reprint, then I shall be pleased (for a professional fee) to supply to the publisher a list of more than 20 errors of substance. For the present, I must needs confine m'self to Preterition and shall not take our Lexicographer to task for confounding Ideal and Standard observers, for blurring the hard-won distinction between Intervening variables and Hypothetical constructs, for failing to differentiate Short-term memory and Short-term store, or for neglecting the asymmetry of the Stroop effect. I shall even pass over the misleading entry for Forced choice, an entry that fails completely to acknowledge Tanner and Swets'