

books and arts

Autistic genius?

Autism and Creativity: Is There a Link between Autism in Men and Exceptional Ability?

by Michael Fitzgerald
Brunner-Routledge: 2003. 304 pp.
£29.99, \$47.95

Autism: Mind and Brain
edited by Uta Frith and Elisabeth Hill
Oxford University Press: 2003. 298 pp.
£70, \$110 (hbk); £29.95, \$49.50 (pbk)

Allan Snyder

We tend to see only the whole — it takes insights from abnormal minds to appreciate how the brain assembles the parts. So could studies of autism reveal insights into creativity? It seems unlikely. The classical portrait of autism includes low intelligence, significant learning disabilities, memory by rote, literalness and a rigid insistence on sameness. Even autistic savants, known for their extraordinary mental feats, are not creative. Rather, they adopt a form of mimicry, probably due to privileged access to non-conscious processes. Beate Hermelin, an expert on autism, says that no savant will discover a new mathematical theorem, initiate a novel stylistic movement, or render a revealing interpretation of a Beethoven piano sonata.

But as these two superb new books demonstrate, our view of autism is radically transforming. It now embraces the classical picture of severe mental impairment at one end of the spectrum and possibly Nobel-prizewinning creative genius at the other. Both extremes have in common certain core autistic features, such as preoccupation with detail, obsessional interests and difficulties in understanding another person's perspective.

Michael Fitzgerald, author of *Autism and Creativity*, says that some aspects of high-functioning autism and Asperger's syndrome enhance creativity. Because these developmental disorders are mainly genetic in origin and largely affect men, he believes that creativity in a broader sense is predominantly the result of genetic rather than environmental factors: "The view that geniuses began their lives made from the same material as the rest of us ... is false." He then engages in retrospective diagnosis to support such claims, declaring that several individuals "with creativity of genius proportions" fit the high end of the autistic spectrum. These include Isaac Newton, the philosopher Ludwig Wittgenstein, mathematician Srinivasa Ramanujan, Lewis Carroll, the poet W. B. Yeats, and politicians Keith Joseph and Eamon de Valera. Apparently Hitler too had autistic traits.

Fitzgerald's thesis is not new. Hans Asperger spoke of "autistic intelligence" as being intelligence of "true creativity", adding "it seems that for success in science or art a dash of autism is essential." Oliver Sacks suggested that Wittgenstein had autistic traits. So too did Einstein, van Gogh and possibly Bill Gates, according to Temple Grandin, who is herself autistic. Asperger even noted that the autistic mind is an extreme variant of male intelligence. Despite these earlier revelations, Fitzgerald's tantalizing book is a must read, as are Simon Baron-Cohen's brilliant contributions to this area, such as *The Essential Difference* (Perseus, 2003).

The fact that genius can fall within the autistic spectrum challenges our deepest notions of creativity. Are there two different routes to creativity: normal and autistic? The normal mind is good at recognizing the gist of something but poor at recalling details. This, I believe, is because the brain forms concepts or mental models that encapsulate the familiar. Concepts impart automatic judgements and confer intuition, but hide details from conscious awareness. As a result, we see the whole but not the parts. In contrast, the



Did autism help shape the thinking of Indian mathematician Srinivasa Ramanujan?

autistic mind is literal and sees more of the parts than the whole. An impairment in the process of concept formation denies intuition, but allows access to details that are normally non-conscious. Consequently, the autistic mind must build logically from the parts to what is intuitive to a normal mind.

The autistic mind seems to be suited to working algorithmically within a closed system of specified rules. In contrast, the normal mind can make unexpected connections between seemingly disparate systems — often by breaking the rules of each when taken in isolation, but not as an ensemble. In other words, a normal mind invents entire new systems rather than finding novelty within a previously prescribed space. Is it

possible to have the best of both worlds? Could certain psychopathologies inadvertently plunge someone into a temporary state of autism, allowing them to see the parts normally denied to conscious awareness?

To gain deeper perspective on such issues requires information from diverse research. The second book under review, edited by Uta Frith and Elisabeth Hill, gives a valuable update in 13 insightful chapters, written by authorities on the subject. I especially enjoyed the editors' two chapters and those by the groups of Baron-Cohen, Happé and Schultz. Although tilted to the specialist, this excellent book portrays a panoramic view of autism. It is loaded with all kinds of goodies: autism is no longer a rare disease; it can be associated with congenital blindness; people with autism have difficulty recognizing faces; they show a strong desire to systematize; and on average their brains are larger and heavier than normal brains from around the age of 2–4 years (but probably not as adults). Movement disturbances may play a role in autism — a reduction in facial expressions may reflect problems with the underlying social brain network.

We are told that there is still no unifying theory of autism. But I suggest that a failure in the process of concept formation and its associated top-down inhibition of the parts that make up the whole may offer a mechanism that could unite the current descriptive theories. Concepts order the world internally. Without them, order must be imposed externally, hence the setting up of rigid routines.

Allan Snyder is director of the Centre for the Mind, a joint venture of the Australian National University, Canberra, ACT 0200, and the University of Sydney, Sydney, New South Wales 2006, Australia.