

Short Report

Fantastic children

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Children demonstrating exceptional mental abilities are reported in the medical literature, but it is more intriguing when such children are also mentally impaired. This short report describes some unique abilities of children with autism spectrum disorders and attempts to provide possible explanations for the existence of these exceptional aptitudes. The exceptional abilities were mostly unrecognized and their impairments and oddities were more readily recognised. These children were all seen at the Lady Ridgeway Hospital for assessment and diagnosis and the description here will be confined to their unique mental abilities. All are boys and the names given are fictitious.

- Twelve year old Dilan has a single preoccupation, the Sri Lankan cricket team. His favourite player is Sanath Jayasuriya. He will promptly and accurately give Sanath's batting score in any match played for the past several years. However, Dilan never plays cricket himself as he does not mix with peers and is reluctant to attend school. He has significant difficulty in managing school work and has marked attention deficit.
- Eight year old Shan has an exceptional ability in calendar calculation. When dates were randomly selected from several past years and the year to come, he gave the corresponding days of the week, which were all found to be exact when checked with the existing calendars. His educational abilities matched that of a child 2 to 3 years his senior when working with his mother at home, but he refused to do any work in school. His class teacher recommended special education, much to the frustration of the mother, but failed to convince the school about his abilities.
- Four year old Mahen correctly reads and spells almost any word in English or Sinhala, which others of his age could not manage to do.
- However, he has limited spontaneous speech and repeats what others say (echolalia). He does not match the words to pictures indicating that he does not comprehend the meaning of the words he reads.
- Nine year old Malith likes his mother to read him stories, but is uninterested or unable to read himself. He would later repeat back to his mother the complete story word to word from beginning to the end, as given in the written language. This is done without referring to the book.
- Six year old Nalinda has an intense interest in history and music. He has a mature knowledge especially about drums and recognizes their different musical qualities. A small sized drum has been especially made for him as his little arms cannot reach around normal drums. Furthermore, he is able to recognize apart the Ajantha and Sigiriya frescoes and Sandakadapahana from Polonnaruwa and Anuradhapura periods. He enjoys displaying his interest and knowledge to others and talking on the subjects.
- Twelve year old Chamara is being coached at home by his father after several years of struggle in educational institutions without much benefit. Chamara demonstrates complex mental arithmetical skills as well as an exceptional ability with languages. He translates words between Sinhala, English, Tamil and Japanese. His father believes that Chamara may manage German as well though this is yet to be fully tested. He never had anyone tutoring him on the languages and his father only provided the books. More fascinating is the fact that he has pointed out errors in the book on Japanese, which the author had accepted when contacted.

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There were other children with exceptional abilities in art work. They drew cartoon figures seen on television with unmistakable similarity and fine detail.

The term “Savant syndrome” is used in children and adults who demonstrate outstanding mental capability despite coexisting severe mental disabilities. Around 10% of autistic individuals are said to have savant abilities. Most commonly, Savant syndrome takes the form of extraordinary musical abilities, but may also include calendar-calculation, artistic, mathematical, spatial, mechanical, and memory skills. Savant skills are 4 times more common in males. Excessive memory capacity, highly focused perceptual processing and compulsive repetition all contribute to creating such skills. In calendar calculation, autistic individuals use rote memory in processing dates and make fewer errors when compared with healthy people with the same skill¹. In those with artistic talents, excellent visual memory and intense attention to detail contributes to the artistic product². Certain neuro-pathological and architectural abnormalities of the brain in autism have been identified which may explain the exceptional abilities. For example, imaging studies suggest the presence of a developmental disorder involving left-brain damage with right-brain compensation³. In the artistic savant with autism, loss of function in left temporal lobe with enhanced function of posterior cerebral cortex is described². Some abnormalities have a similarity with intellectually gifted persons but without autism. Example of this is found in the morphology of minicolumns, which are the smallest units of information processing in the brain⁴. A striking finding amongst non-autistic savants is the presence

of cognitive features and behavioural traits associated with autism⁵.

References

1. Dubischar-Krivec AM, Neumann N, Poustka F, Braun C, Birbaumer N, Bölte S. Calendar calculating in savants with autism and healthy calendar calculators. *Psychological Medicine* 2008; **22**: 1-9.
2. Hou C, Miller BL, Cummings JL, Goldberg M, Mychack P, Bottino V, Benson DF. Autistic savants [correction of artistic]. *Neuropsychiatry, Neuropsychology and Behavioral Neurology* 2000; **13** (1): 29-38.
3. Treffert DA. The savant syndrome and autistic disorder. *CNS Spectrums* 1999; **4**: 57-60.
4. Casanova MF, Switala AE, Trippe J, Fitzgerald M. Comparative minicolumnar morphometry of three distinguished scientists. *Autism* 2007; **11**: 557-69.
5. Heaton P, Wallace GL. Annotation: the savant syndrome. *Journal of Child Psychology and Psychiatry* 2004; **45**: 899-911