

The matrix of autism

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Autistic children are doubly stigmatized. On the one hand, they are often dismissed as “low functioning” or mentally retarded, especially if they have poor speaking skills as many do. Yet when autistics do show exceptional abilities—uncanny visual discrimination and memory for detail, for example—their flashes of brilliance are marginalized as aberrations, mere symptoms of their higher order cognitive deficit. They often earn a dubious promotion to “idiot savant.”

The theoretical justification for this view is that prototypical autistic skills are not true intelligence at all, but really just low-level perceptual abilities. Indeed, in this view autistics are missing the big picture because they are obsessed with the detail.

But is this true? Are autistics really incapable of abstraction and integration and other high-level thinking? Surprisingly, given how pervasive this view of autism is, it has never been rigorously tested. But a team of scientists in Canada suspected that the tests themselves might be biased and decided to explore the idea in the lab.

Led by psychologist Laurent Mottron of the University of Montreal, the team gave both autistic kids and normal kids two of the most popular IQ tests used in schools. The two tests are both highly regarded, but they are very different. The so-called WISC relies heavily on language, which is why the psychologists were suspicious of it. The other, known as the Raven’s Progressive Matrices, is considered the preeminent test of what’s called “fluid intelligence,” that is, the ability to infer rules, to set and manage goals, to do high-level abstractions. Basically the test presents

arrays of complicated patterns with one missing, and test takers are required to choose the one that would logically complete the series. The test demands a good memory, focused attention and other “executive skills,” but—unlike the WISC—it doesn’t require much language.

The idea was that the autistic kids’ true intelligence might shine through if they could bypass the language deficit. And that’s exactly what happened. The difference between their scores on the WISC and the Raven’s test was striking: For example, not a single autistic child scored in the “high intelligence” range of the WISC, yet fully a third did on the Raven’s. Similarly, a third of the autistics had WISC scores in the mentally retarded range, whereas only one in 20 scored that low on the Raven’s test. The normal kids had basically the same results on both tests.

The scientists ran the same experiment with autistic and normal adults, with the same result. As they report in the August issue of *Psychological Science*, a journal of the Association for Psychological Science, these findings speak not only to the level of autistic intelligence but to the nature of autistic intelligence. While it is probably true that autistics possess extraordinary perceptual skills, and that they use unique cognitive pathways for problem solving, their intelligence clearly goes far beyond rote memory and perception to include complex reasoning ability. That won't come as any surprise to Michelle Dawson, who is autistic. She is also a scientific collaborator on this study.

Source: Association for Psychological Science

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