Biomedical update:

Are there "normal" people with autism?

There appear to be people whose autistic symptoms are so mild that they have led relatively normal lives including marriage, families, and careers, according to a recent report by Edward Ritvo et al.

Ritvo and colleagues report that they have seen 11 parents of autistic children who could be classified as mildly autistic themselves. Nine of the possibly autistic parents were male. Four of the subjects held B.A. degrees (one also had a law degree) and several had skilled jobs in fields such as computer programming and laboratory technology, although problems in keeping jobs appeared common.

The adults' symptoms included social isolation, insensitivity, rituals, self-stimulatory behaviors such as lining up objects, compulsive behaviors, monotonic speech, and failure to relate to others.

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"Eleven possibly autistic parents" (letter), Edward Ritvo, Anne M. Brothers, B. J. Freeman, and Carmen Pingree; *Journal of Autism and Developmental Disorders*, Vol. 18, No. 1, March 1988, pp. 139-143. Address: Edward Ritvo, Neuropsychiatric Institute, University of California at Los Angeles, Los Angeles, CA 90024.

Fluctuating hearing loss found in autism

Autistic children appear to have a fluctuating loss of conductive hearing, according to recent research (Smith et al.).

The researchers studied ear pressure values for 11 autistic, 20 learning-disabled, and 20 non-disabled children. (Significant negative pressure readings indicate Eustachian tube malfunction.) They found that autistic children had elevated negative pressure values, while non-disabled children had normal results and learning-disabled children's results fell halfway in between the scores of the other two groups (although outside the normal range).

In addition, autistic children tended to have abnormal pressure levels in both ears, while learning-disabled children tended to have abnormal pressure levels in one ear only.

An earlier study, also by Smith et al., offers evidence that fluctuating hearing loss may be related to autistic symptoms.

In this study, 14 autistic students wearing auditory trainers (headsets and attached microphones which provide augmented auditory signals) were less withdrawn, showed an increase in appropriate behaviors, and doubled their rate of signing following five-week sessions with the equipment.

The researchers believe their two studies support the theory of J. Katz that conductive hearing loss during early development of the brainstem, especially of the cells associated with the reticular formation (which regulates attention), results in cell damage and may cause attention problems and reduced arousal.

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"Conductive hearing loss in autistic, learning-disabled and normal children," Donald E. P. Smith, Samuel D. Miller, Michael Stewart, Timothy L. Walter and James V. McConnell; *Journal of Autism and Developmental Disorders*, Vol. 18, No. 1, March 1988, pp. 53-65. Address: Donald E. P. Smith, School of Education, Dept. of Ed. Psychology, Room 1302, University of Michigan, Ann Arbor, Michigan 48109.

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"Effect of using an auditory trainer on the attentional, language, and social behaviors of autistic children," above authors without Stewart; *Journal of Autism and Developmental Disorders*, Vol. 15, No. 3, September 1985. Same address as above.

Defects seen in high-IQ autistic individuals

Most high-functioning autistic children have detectable neurological or biological defects, according to Christopher Gillberg.

Gillberg and colleagues studied 17 autistic children and three boys with Asperger's syndrome, a condition similar to mild autism. All of the subjects had IQs above 65, and nine had IQs of 90 or greater.

Fifteen of the 20 children had "definite abnormalities" on at least one of the tests administered. Tests included CAT scans, auditory brainstem response tests, EEGs, chromosome cultures, cerebrospinal fluid exams, blood and urine tests, and a thorough physical examination. The researchers estimate that similar tests on normal children would reveal defects in only five to ten percent.

Gillberg et al. conclude that "the number of cases of 'non-organic' autism, even among children with relatively higher intelligence, dwindles rapidly as our neurobiological assessment methods become increasingly sophisticated."

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"Neurobiological findings in 20 relatively gifted children with Kanner-type autism or Asperger syndrome," Christopher Gillberg, Suzanne Steffenburg and Gun Jakobsson; *Developmental Medicine and Child Neurology*, Vol. 29, 1987, pp. 641-649. Address: Christopher Gillberg, Department of Child and Youth Psychiatry, University of Goteborg, Box 7284, S-402 35, Goteborg, Sweden.

IQ decline in Fragile X?

Intellectual ability tends to decrease with age in boys with Fragile X mental retardation, according to a Belgian study (Borghgraef et al.).

Fragile X syndrome is characterized by a constriction on the long arm of the X chromosome. It is a leading cause of mental retardation, and is frequently associated with autism.

In this study of 23 subjects, the researchers found that younger Fragile X boys tended to be only mildly retarded, while 70% of the older boys tested were moderately retarded. In addition, IQ testing of seven of the boys showed that scores declined over time in most cases.

However, autistic symptoms in Fragile X children tend to decrease with age, according to the researchers. Fifty percent of the pre-schoolers with Fragile X had autistic features, while only 31 percent of the school-age children did.

In addition, they reported, symptoms of "attention deficit disorder" (ADD) are less common in Fragile X children as they grow older; this decrease appears to be independent of IQ level. Symptoms of ADD include hyperactivity, clumsiness and coordination difficulties, short attention span, and low tolerance for frustration.

The study also found that in addition to severe overall speech retardation, Fragile X boys exhibit distinct speech characteristics including "rapid speech rhythm, speech impulsiveness, verbal unstructuredness, and perseverative speech."

A study by Enid Wolf-Schein et al. compared the speech of 35 men with Fragile X to that of a group of men with Down syndrome, and found that the Fragile X subjects were more echolalic, perseverative, and likely to use jargon than the Down syndrome subjects. They also had more inappropriate speech, talked to themselves more, and had fewer appropriate gestures.

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"Fragile X syndrome: a study of the psychological profile in 23 prepubertal patients," M. Borghgraef, J. P. Fryns, A. Dielkens, K. Pyck, and H. Van den Berghe; *Clinical Genetics*, Vol. 32, 1987, pp. 179-186. Address: J. P. Fryns, Centre for Human Genetics, U.Z. Gasthuisberg, Herestraat 49, B-3000 Leuven, Belgium.

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"Speech-language and the Fragile X syndrome," Enid G. Wolf-Schein, Vicki Sudhalter, Ira L. Cohen, Gene S. Fisch, Donna Hanson, Albert G. Pfadt, Randi Hagerman, Edmund C. Jenkins and W. Ted Brown; *Amer. Speech-Language Hearing Assoc.*, July 1987, pp. 35-38. Address: Ira L. Cohen, Inst. for Basic Research in Dev. Disabilities, 1050 Forest Hill Road, Staten Island, NY 10314.