Sex Differences in Autism

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Comparisons were made between male and female children with autism, 384 boys and 91 girls, aged 3 years to 8 years, on nonverbal measures of intelligence, adaptive functioning, receptive vocabulary, perception, and eye-hand integration, and on ratings of affect, play, and relating and human interest. Males showed more advanced performances on eye-hand integration and perception skills on the Psychoeducational Profile (PEP) and had higher nonverbal IQs social quotients, and Peabody Picture Vocabulary Test (PPVT) IQs than females. When nonverbal IQ was controlled, the main effect of sex remained; however, sex differences on PPVT scores and on eye-hand integration and perception scale disappeared. Males showed more unusual visual responses and less appropriate, more stereotypic play than females. These results are discussed in terms of hypotheses concerning sex differences in genetic thresholds and in hemispheric lateralization.

A sex difference in the incidence of autism as large as four males to one female has been reported for many years (Coleman, 1978; Wing, 1976), yet relatively little is known about whether the pattern of autistic symptoms is also different in the two sexes. Females account for a relatively

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small proportion of individuals with autism, which is itself a relatively rare disorder. Autistic girls and women have seldom been observed or studied separately from autistic boys and men. Since they are few in number, females with autism are often combined with three or four times as many males or even excluded from research. When possible sex differences in autistic characteristics have been studied directly, as by Prior and Bradshaw (1979), small sample sizes and large individual variation make it difficult to rule out important group differences on the basis of failures to find statistically significant results. Similarly, most papers that have found sex differences have also been based on relatively small numbers of subjects (Coleman, 1978; Symmes, 1976).

Some investigators have observed a greater proportion of autistic males than females in higher (IQ > 70) ranges of intelligence (Brask, cited in Wing, 1981; Lotter, 1974). However, only recently have two papers, one by Lorna Wing (1981) and another by Tsai, Stewart, and August (1981), directly addressed the question of sex differences in autism and related conditions. In a study of 102 autistic children, of which 24 were girls, Tsai et al. (1981) found that females were significantly lower in intelligence, were more likely to show evidence of brain damage (e.g., an abnormal EEG), and had more first-degree relatives affected with autism than did males. The authors used these findings to propose that if autism is inherited, the specific mechanism of inheritance may involve multifactorial transmission.

Wing (1981) also compared the measured intelligence of boys and girls with autism. However, Wing's primary concern was to determine the sex ratios of autistic children, children with other social and language impairments, and children with severe retardation without specific impairments in communication or social ability. In recent years, Wing has treated autism as a subgroup within a more general condition that she terms the "triad of language and social impairments" (Wing, Gould, Yeates, & Brierley, 1977), which includes social impairments, language deficits, and the substitution of repetitive, stereotypic activities for imaginative play. Classical autism is differentiated by Wing from the more general triad by a history of extreme aloofness, as opposed to less severe social impairment, and by elaborate and obsessive repetitive routines, as opposed to simpler stereotypic behaviors. In her 1981 paper Wing indicated that male:female sex ratios were much greater for children with autism, across intellectual levels, and for children with other social and language impairments who showed only moderate retardation or less (IQ > 50) than for severely retarded children (IQ < 50) with or without social and language impairments. Wing's study is particularly important since it provides geographically based epidemiological data rather than working from clinic or referral populations and so is less open to criticisms of selection bias than