Adaptive Behaviour and Theory of Mind in Autism

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The Vineland Adaptive Behavior Scales are used to assess the real life competence of adolescents and adults with autism in France. Real life adaptation is compared with performance on social cognitive tasks, involving the attribution of mental states, and with subjects' age and ability. New scales are used to contrast real life behaviours which appear to require the ability to attribute mental states with those behaviours which are possible without this ability. Subjects with autism who passed social cognitive tasks showed higher intellectual ability, as well as being older. In addition, they were better than subjects who failed tasks in terms of those social and maladaptive behaviours involving understanding minds. However, when their verbal ability was taken into account, these specific differences were no longer significant. These results are discussed in relation to a parallel study carried out in England, where essentially the same results were obtained. Both studies suggest that the stereotype of the aloof, socially indifferent autistic child does not reflect the sociability of adolescents and young adults with autism.

Introduction

The Vineland Adaptive Behavior Scales (VABS) (Sparrow et al., 1984) provide a standardized, norm-referenced assessment instrument, measuring a wide range of social and non-social behaviours. In recent years, these scales have proved to be a useful assessment tool for clinical and research applications with samples of individuals with autism in North America (Volkmar et al., 1987; Loveland & Kelley, 1988; 1991; Perry & Factor, 1989; Freeman et al., 1991; Rodrigue et al., 1991; Burack & Volkmar, 1992; Capps et al., 1992; Klin et al., 1992; Venter et al., 1992). These studies have found a significant and specific impairment in the Socialisation domain of the VABS in groups of subjects with autism compared to various control groups. By contrast, subjects with autism were not so impaired in their Daily Living Skills domain scores, or on the Communication domain, when verbal ability was taken into account.

In Britain too, the VABS have been used to assess the characteristic social impairment of individuals with autism. Frith et al. (submitted) explored the relationship between performance on tests of social cognition and everyday life adaptation as measured by the VABS administered to teachers. The social cognitive tests tapped the ability to attribute a false belief to a protagonist – tests of so-called "theory of mind" (ToM). The ability to recognize a character's false belief is seen as a critical test for thinking about thoughts and mentalising. It is this cognitive component which has been hypothesised to be deficient in people with autism (Baron-Cohen et al., 1985; Leslie, 1987; Frith et al., 1991).

A deficit in the ability to think about thoughts ("mentalise") should be manifest in everyday life social impairment. This has been explored with mixed results. Prior et al. (1990) found only a weak relationship between a general measure of social ability and performance on theory of mind tasks in a group of subjects with autism. Dawson and Fernald (1987), on the other hand, found that conceptual role taking ability (e.g. the ability to choose appropriate gifts) was highly correlated with the Vineland Social Maturity Scale and the Social Behaviour Rating Scale in their sample of

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individuals with autism. Frith et al. (submitted) examined the social abilities of children with autism who either passed or failed two tests of mentalising using the Vineland scales. Additional scales were devised (see below) to contrast real life behaviours which did or did not require thinking about thoughts. Their “Active Sociability Scale” included items which, though pro-social, did not necessitate mentalising (e.g. initiating social contact). The contrasting scale, “Interactive Sociability Scale”, included items such as “Making confidences”, which appear to require an understanding of other minds. Frith et al. (submitted) found significant differences between theory of mind “passers” and “failers” on the Communication domain of the VABS, and in verbal mental age. The social competence of the two groups, however, only differed in terms of the Interactive (but not Active) items.

An examination of the individual subjects’ results suggested that there were in fact three subgroups among these children with autism. There existed a group of theory of mind task “failers” whose generally low level of social and communicative adaptation confirmed their lack of mentalising ability. Likewise, there was also a small group of “passers” who not only succeeded in the laboratory tests of mentalising but who also showed evidence in their everyday life of some appreciation of minds. A third group, the largest, consisted of both “passers” and “failers” on the Communication domain of the VABS, and in verbal mental age. The social competence of the two groups, however, only differed in terms of the Interactive (but not Active) items.

The Vineland scales had already been used by Fombonne and Achard (1991) to provide baseline data for a longitudinal study. Here, as in previous American studies, adolescents with autism exhibited deficits in the Socialization domain when compared to retarded controls with different developmental disorders. In addition, the Vineland scales have been used with a small normative sample of 151 French children aged from 0 to 18 years (Fombonne & Achard, 1993). In this study, French children obtained scores comparable to their American counterparts, with the exception of the Daily Living Skills domain where, after the age of 6 years, French children obtained consistently lower standard scores. However, where the scales are used for between group comparisons, this cross-cultural difference should not affect the overall pattern of results.

Method

Subjects

In order to be included in the study, subjects had to have a minimum chronological age of 7 years, to meet ICD-10 research diagnostic criteria for autism, and have language skills and an overall level of intelligence, as assessed on standardized psychological tests, of at least mental age 4 years.

Subjects were recruited from two sources. First, the most able individuals with autism were selected from a sample of 50 adolescents and adults with autism included in an ongoing longitudinal study conducted by the French team (Fombonne & Achard, 1991). However, since this study included very retarded individuals with autism, only 3 subjects from that sample met criteria for inclusion in terms of their level of intellectual abilities. All of these had already been assessed by one of the authors (EF), using the Autism Diagnostic Interview (ADI), a semi-structured diagnostic interview (Le Couteur et al., 1989; Fombonne, 1992). Secondly, a range of professionals and parent associations were contacted in order to increase the sample size. From these various sources, a total of 37 subjects were contacted. Of these, 19 were excluded because their level of language and cognitive skills was not sufficient. For the remaining 18 subjects, developmental history was obtained using the information available from the records, from professionals in close contact with them and from the