

# Autism Research Review

I N T E R N A T I O N A L

A quarterly publication of the Institute for Child Behavior Research

Reviewing biomedical and educational research in the field of autism and related disorders

## Are social deficits the key symptom of autism?

While cognitive problems have been considered central to autism for many years, one group of researchers (Fein et al.) believes social deficits are the primary manifestation of the disorder. The researchers note that:

- While almost all autistic children have social deficits, severe social impairment is very rare in other infants even when they are handicapped.
- The cognitive problems found in autistic individuals, by contrast, "can be found in at least as severe a form in sociable retarded children."
- No known specific cognitive defects are common to all autistic children; those cognitive disabilities frequently seen in autism may be closely linked to social functioning; and cognitive deficits "are theoretically inadequate to explain autistic aloofness."
- If cognitive deficits underlie the so-

cial impairments seen in autism, there should be a strong link between the degree of cognitive and social impairments in the developmentally disabled. In reality, Fein notes, there is little connection between intellectual and social ability.

### Underlying cognitive problems?

On the other hand, researcher Judith Rumsey studied nine highly verbal, non-retarded autistic men and found that they had significant deficits in conceptual problem-solving, and that these deficits were to some extent independent of IQ scores.

She concludes that "the nature of the residual social impairments displayed by these patients does, in many instances, appear to involve cognitive components." She believes autistic people's social problems may stem, at least in part, from defects in inductive logic, attention to

relevant aspects of the environment, and other cognitive processes.

"Toward a neuropsychological model of infantile autism: are the social deficits primary?," Deborah Fein, Mark Braverman, Bruce Pennington, Philip Markowitz, and Lynn Waterhouse; *Journal of the American Academy of Child Psychiatry*, Vol. 25, No. 2, 1986, pp. 198-212. Address: Bruce Pennington, Box C-259/Department of Psychiatry, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver, Colorado 80262.

-and-

"Conceptual problem-solving in highly verbal, nonretarded autistic men," Judith Rumsey; *Journal of Autism and Dev. Disorders*, Vol. 15, No. 1, 1985, pp. 23-36. Address: Judith Rumsey, Section on Child Psychiatry, NIMH, Bldg. 10, Rm. 3N-204, Bethesda, Maryland 20205.

## Autistic "theory of mind," social deficits linked

A British research team (Baron-Cohen, Leslie and Frith) believes that autistic children have a specific deficit in "theory of mind" — in other words, in their ability to understand that other people know, want, feel, or believe things, and to predict behavior on the basis of such knowledge.

To test this theory, the researchers used puppets to act out for autistic, retarded and normal children the following sequence of events:

1. One puppet ("Sally") hides a marble in a box and then leaves.
2. Unknown to Sally, a second puppet moves the marble to a basket. The second puppet departs.
3. Sally, the original puppet, returns.

The researchers then asked the children questions about the sequence. All subjects, the autistic children included, could answer the questions, "where is the marble really?," and "where was the marble in the beginning?"

But when asked, "where will Sally look for her marble?," more than 80 percent of the normal and retarded children were also able to state that Sally would look in the box where she had originally hidden the

marble, while 80 percent of the autistic children FAILED this test.

Because the high-functioning (IQ range 70 to 108) autistic children performed much more poorly than the retarded children (subjects with Down Syndrome and an IQ range of 42 to 89) in this test, the researchers say that the autistic children's defect in "theory of mind" appears to be independent of IQ.

Leslie believes that autistic children's failure to comprehend the thought processes and behavior of others, as well as their inability to pretend, may be due to a lack of "metarepresentational" skills. He says that while autistic children are able to use "primary" thinking (e.g., "this is a cup"), they are unable to reach a more abstract level of thought in which factual information can be manipulated and integrated into pretend play, or into an understanding of unseen events such as mental processes.

In a related study, Dawson and Fernald found that autistic children's ability to understand other people's perspectives was strongly linked to their level of social ability. The autistic children in this study who performed the best on experiments testing their understanding of what other people saw, thought or felt emotionally,

also were rated by their teachers as having the best social skills, and/or had the least severe autistic symptoms.

"Furthermore," the researchers note, continued on page 2

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