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A Comparative Study of Autistic Subjects' Performance at Two Levels of Visual and Cognitive Perspective Taking[1]

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This study extended previous investigations of autistic subjects' perspective-taking abilities through a within-subjects contrast between two levels each of both visual and cognitive problems with stringent controls against guessing. When compared with normal and mentally retarded subjects', the autistic group's performance supported Baron-Cohen's (1988) hypothesis of a selective deficit for cognitive perspective taking among autistic subjects. Both levels of visual perspective taking demonstrated virtually unimpaired performance for autistic subjects with no significant difference between them and control groups. On the cognitive perspective-taking tasks, however, the performance of the three groups was significantly different, with the vast majority of autistic subjects unable to do even the most basic level of this task. Possible explanations and educational implications were discussed.

A search for the primary deficit in autism (Leslie & Frith, 1988) has recently centered around problems of perspective taking. Perspective taking involves being able to correctly imagine another person's viewpoint. Failure to do so was dubbed *egocentrism* by Piaget and Inhelder (1956) who explained that

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the young egocentric thinker "appears to be rooted to his own viewpoint in the narrowest and most restricted fashion so that he cannot imagine any perspective but his own" (p. 242). A variety of tasks have recently been developed to chart the transition from egocentrism to skilled perspective taking in normal children. Some of these entail what is known as *perceptual* (Cox, 1980) or *visual* (Flavell, Everett, Croft, & Flavell, 1981) perspective taking, or the ability to imagine what another person can see when looking at a scene from a contrasting vantage point. Others entail cognitive perspective taking, or the ability to assess such aspects of another person's mental state as knowledge, ignorance, or belief.

The development of perspective taking in autistic children is of special interest because (following Piaget) it is thought to reflect the development of important cognitive abilities and because of the clear link between this ability and the individual's functioning in social situations. Hobson (1984) described the Piagetian perspective thus:

> Suppose it is the case that autistic children cannot infer another person's perspective . . . As Piaget argued for normal children, this kind of difficulty might on the one hand reflect some more fundamental disturbance in the operations of their thought, and on the other be reflected in (or at least contribute to) the disability that they manifest in their social relations" (p. 87).

It has been suggested that the "fundamental disturbance" of thought in autism may be an inability to deal with metarepresentation (Baron-Cohen, 1988; Baron-Cohen, Leslie, & Frith, 1985).

Baron-Cohen (1988) defined metarepresentations as "second-order representations" (p. 393) or "our beliefs about other people's mental states." In other words, the ability to form second-order representations, metarepresentations, is the ability to operate representationally upon simple conceptual representations or to go beyond the immediate and concrete and consider thoughts themselves as concepts to be represented. Some would describe this as evidence of employing a "theory of mind" (Baron-Cohen, 1988, p. 394) Baron-Cohen et al. (1985) were careful to distinguish between *conceptual* perspective taking and *perceptual,* or visual, perspective taking. Both clearly involve being aware of the other's point of view. However, this can be done either at a concrete primary level or at the level of metarepresentation. Thus, for example, deciding whether the other can see an object requires only that subjects ascertain that the object is within the other's field of vision, whereas conceptual perspective taking requires inferences about other people's mental states entailing second-order representation. According to Baron-Cohen (1988), "perceptual role taking can be performed using a strategy of mental rotation on primary representations" (p. 394). But conceptual perspective taking, even in a basic task like knowing that another person knows or believes something, demands second-order representation,

that is, metarepresentation, or a theory of mind. Baron-Cohen (1988) therefore suggested that autistic subjects should succeed on visual perspective tasks while failing on cognitive perspective tasks. An additional reason for comparing these tasks is that although they differ in their requirements for metarepresentation, they are otherwise similar in their requiring basic perspective taking, language skills, some social interaction, and attention to a sequential task. Therefore, difficulty with any of these factors should produce failure in both tasks equally and comparing the two tasks reduces the likelihood that any of these incidental factors is responsible for selective failure on conceptual tasks (e.g., Baron-Cohen's et al., 1985). On the other hand, difficulty with abstraction or metarepresentation should produce failure on only one task: conceptual perspective taking. Therefore a comparison of the two tasks should help make clear whether autistic individuals' deficits are specific to the theory-of-mind domain.

However, while theoretically compelling, empirical support for the notion that cognitive perspective taking is inherently more difficult than visual perspective taking for autistic subjects is problematical. There are at least three reasons for this. First, most previously published studies of autistic subjects have assessed either visual or cognitive perspective taking but not both together (e.g., Baron-Cohen et al., 1985; Hobson, 1984). This means that relative success rates on the two types of tasks must be inferred by comparing data across different studies with the consequent hazard of confounding between sample differences in age, level of autism, educational experiences, and so on, with effects due purely to the modality in which perspective taking was assessed. A second problem is failure to test multiple levels of perspective taking difficulty in the visual and cognitive domains. It is important to test higher, as well as lower, levels of perspective-taking skill in order to get an accurate assessment of subjects' true developmental level and also for comparing performance across domains. According to Flavell et al. (1981) visual perspective taking can be subdivided into two classes: Level 1 problems that simply require a child to recognize that "the other person currently sees an object that the child does not see or vice versa" (p. 99) and a more difficult Level 2 requiring "the additional insight that an object seen by both may still present a different appearance to both if they see it from opposite sides" (p. 99). Cognitive perspective-taking problems have likewise been subdivided (Hogrefe, Wimmer, & Perner, 1986) into two levels on the basis of a similar distinction between knowing/not knowing versus more abstract inferences about others' more complex thought processes (e.g., false belief).

One previous study (Leslie & Frith, 1988) overcame the problem of inference across samples by administering a Level 1 visual perspective taking problem and Level 1 cognitive perspective taking problems to the same small group of autistic children. Unfortunately, failure to include a Level 2 visual

task did not enable comparison with the Level 2 cognitive problem also included in this study. Nevertheless, the results were important as they failed to lend strong support to Baron-Cohen's (1988) cognitive deficit model. In fact, a substantial majority (61%) of these autistic subjects unexpectedly succeeded on a supposedly problematic cognitive Level 1 task. However, due to its possible inflation by chance guessing, Leslie and Frith (1988) themselves recommended that this particular response pattern be considered cautiously. Indeed, the opportunity for distortion by guessing is still the third source of methodological difficulty for many previous studies of cognitive perspective taking by autistic subjects.

The main aim of the present study was therefore to address these methodological problems while conducting a further test of the proposition that autistic subjects have greater difficulty in surmounting Piagetian egocentrism in the cognitive than in the visual domain due to a selective deficit for metarepresentation (Baron-Cohen, 1988). To enable a direct comparison of the two types of skill in the same individuals, we used a within-subjects design measuring both Level 1 and Level 2 visual and cognitive perspective taking. In addition to providing new information on Level 2 visual perspective taking among autistic subjects, this allows for a comparison between Level 2 cognitive and Level 2 visual tasks not previously tested in published research. We were likewise able to test the replicability of Leslie and Frith's (1988) cross-modal comparison at Level 1. Finally, we incorporated stringent controls for chance responding. Normal and mentally retarded control groups were also included to help clarify the basis for any deficits that might be found among autistic subjects. Our hypotheses, based on Baron-Cohen et al.'s (1985; Baron-Cohen, 1988) were that autistic subjects would show (a) more egocentric responding to cognitive than to visual perspective-taking problems at each of Levels 1 and 2, respectively, and (b) relatively poorer performance than either normal or retarded controls on the cognitive (metarepresentational) tasks, coupled with comparable performance to these control groups on the visual measures.

METHOD

Subjects

A total of 39 subjects participated in this study: 13 were autistic, 13 intellectually handicapped, and 13 normal. The autistic subjects had been diagnosed by a psychologist, psychiatrist, or pediatrician as conforming to the accepted criteria for autism in DSM III (American Psychiatric Association, 1980). Mindful of Prior's (1979) recommendation to avoid confounding retardation with autism, only those autistic subjects with normal or

near-normal scores on performance IQ measures (Ravens Progressive Matrices, WISC, or WAIS) were included in the design. Efforts were made to test every such autistic pupil in the two major educating bodies in the state of Western Australia. The verbal IQs of most of the autistic subjects were below normal, as indicated in Table I. There were 11 male and 2 female autistic subjects.

The normal control group was selected from day care centers and government schools in lower middle-class and working-class suburbs to match each autistic subject's verbal mental age. Normal subjects' IQs were assumed to be approximately equivalent to their chronological ages. Unfortunately, this assumption could not be tested empirically due to parental and institutional refusal to permit intelligence testing. Normal children compared with autistic subjects in studies such as this are sometimes above average in ability. However, in this study, the following considerations rendered this unlikely: (a) the schools and day care centers used did not include a university day care or similar center which might be expected to include particularly privileged children (in fact, we included one center that catered largely to people receiving unemployment benefit and supporting parents benefit), (b) teachers were asked to point out children who seemed unusually advanced or slow in mental development and these children were not tested, (c) after testing, any child who had appeared especially advanced or retarded to the tester was discussed with the teacher and, if she confirmed an impression of atypicality, this child was replaced.

Verbal IQ was chosen in preference to full-scale or performance IQ as the measure to be matched as this provides the most conservative estimate of mental age in an autistic sample. Other details of the sample appear in Table I.

Intelligence test scores were not available for the retarded subjects due to their schools' requirements for confidentiality. However, all of these children were sufficiently retarded to be placed in a special school reserved for serious intellectual handicap rather than mainstreamed in normal classrooms or in special classes at normal schools. As educational authorities in the state

Table I. Matching for Autistic and Control Subject

	Autistic (n = 13)			Intellectually handicapped (n = 13)	Normal (n = 13)
	Chronological age	Verbal mental age	Performance mental age	Chronological age	Chronological age
M	12;0	7;1	11;5	11;9	7;1
SD	8;0	3;6	8;3	4;1	3;5
Range	4;3–29;11	2;8–15;11	2;8–29;11	6–16	3;0–15.9

adhered to a policy of minimally restrictive placement, this implied that children in the present sample were among the most severely retarded of the state's school-aged intellectually handicapped population. Thus, most conservatively (especially given the choice of an autistic sample with near normal performance IQ) it can be assumed that this group was no higher than our autistic group in overall functional intelligence. The mean chronological age of the retarded comparison group is shown in Table I.

Experimental Measures

In order to keep procedures as similar to earlier studies as possible while improving them by means of the various controls outlined above, the following tasks were developed and presented in the order given. Measures were also chosen that required a minimum of verbal competence.

Pretest: Doll's Seeing. As Hobson (1984) and Leslie and Frith (1988) have noted, in the perspective-taking tasks used most commonly dolls' or puppets' perspectives are targeted. But in order for these tasks to provide meaningful information, a subject must accept the notion that dolls can "see." To test this, a three-part preliminary task (based on Hobson, 1984) was devised. In the first part, the experimenter handed the child a doll named Joe and requested that Joe be placed so that he could see another doll stationed at the opposite side of the table. Next, she asked that Joe be placed "so he can see me." Finally, the experimenter held the other doll so that it was facing the subject and asked "What can this doll see now?" (All subjects in each group responded correctly to each of these pretest questions.)

Visual Perspective: Level I (VP LI). This task, based on Hughes and Donaldson (1979), flowed naturally from the pretest since the subject retained the first doll, Joe, while the second doll, Sam, was introduced as Joe's brother. Two walls intersecting at right angles were placed on the table and the subject was asked to "Make Joe hide from Sam." Any placement in a cubical completely out of Sam's line of vision was scored as correct. In cases where a subject used a correct but unorthodox hiding place (e.g., inside a pocket) a repeat trial was given with the prompt, "Hide him somewhere different."

Visual Perspective: Level 2 (VP LII) This task, based on Fishbein, Lewis, and Keiffer (1972) was chosen as it fully met Flavell et al.'s (1981) Level 2 criterion of requiring inferences about the contrasting perspectives of individuals viewing the same object from different vantage points. For this task a turntable was placed on the table in front of the subject and its action demonstrated. Then an object was placed on the turntable, side-on to the experimenter. The subject was then instructed to "Turn it round so I can see the _____" The last word being "nose," "tail," "front," or "back," depending on the object presented. The items placed on the turntable were

(a) a plastic tiger, (b) a teddy bear, (c) a toy car, and (d) a plastic tow truck. Scoring was on a pass/fail basis. A pass required 100% correct responses to all four questions as a stringent control against guessing.

Cognitive Perspective Taking: Level I (CP LI) This task was modeled on Baron-Cohen et al.'s (1985) marble-hiding problem which tests subjects' awareness that a hiding place known to themselves will not be known to a protagonist who did not see the object being hidden. It has been described in Baron-Cohen et al. (1985) so will not be described in full here, however Leslie and Frith (1988) summarize it thus: "Sally hides a marble in her basket. She then goes out for a walk. Meanwhile, Anne transfers Sally's marble from the basket to a box. When Sally returns from her walk she wants her marble—but where will she look for it? We know where—in the basket—because we take account of Sally's mental state, and we are undeterred by the physical presence of the marble elsewhere" (p. 316). The present procedure involved four trials, two of which were identical to Baron-Cohen et al.'s and two of which were similar but used puppets (a clown and a dog) rather than dolls. The critical Level I question "Does (Sally/the clown) known (I/he) moved the marble?" was asked on each of four trials after subjects had passed Baron-Cohen et al.'s "reality" and "memory" questions ("Where is the marble now?" and "Where was the marble before?"). All subjects answered these two questions correctly on every trial. As a control for chance guessing, a subject was only deemed to succeed on the CPLI task when three out of four questions were answered correctly.

Cognitive Perspective Taking: Level 2 (CPL II) This task involved the same four trial scenario as CP LI. But to assess the more abstract Level 2 conceptual notion of false belief, the critical questions after the marble was moved were: "Where will (Sally/the clown) look for the marble?" and "Where does (Sally/the clown) think the marble is?" As in Baron-Cohen et al.'s (1985) study, the first trial of each set involved only two possible hiding places (a box and a basket) while the second trial involved three (box, basket, and experimenter's pocket) to reduce the likelihood of subjects' getting a correct answer through random guessing. As a further precaution against guessing, the number of trials was increased from two (doll only) in Baron-Cohen's (1985) study, to four (doll plus puppet) in the present study. In order to pick up any clear sign of ability at this theoretically most difficult of all our tasks, while avoiding the possibility of inflating results with chance responses, subjects were deemed to have passed the task if they passed both the two-location and the three-location version of at least one problem set (doll or puppet).

RESULTS

The results indicate a uniformly high level of performance by all subjects on visual perspective problems at both levels. In fact, only one autistic

subject and no subject from the other groups made any errors at all on either task. Pairwise comparisons by Fisher's Exact Test indicated no significant differences between any of the groups, $p > .20$.

However, a significant difference did emerge between the three groups' rates of success on CPLI, $\chi^2(1) = 10.196$, $p < .05$. Separate comparisons revealed that significantly fewer autistic subjects succeeded on this task than either normal children, $p = .0023$, Fisher's Exact Test, or intellectually handicapped controls, $\chi^2(1) = 3.94$, $p < .05$. However, there was no significant difference between the proportions of normal and intellectually handicapped subjects who succeeded, $p = .15$, Fisher's Exact Test, suggesting that the autistic group's poorer performance could not be attributed simply to low verbal intelligence. A comparison between the present autistic group's 23% rate of success on CPLI and Leslie and Frith's autistic sample's 61% success rate on a similar Level II cognitive perspective taking task is also of interest. A Fisher's Exact Test revealed a significant difference between these groups, $p = .03$, indicating that fewer of the present autistic sample succeeded than in the earlier study.

On CPLII only 15% of the present autistic sample succeeded, as compared with 92% of the same autistic group on the first level of visual perspective taking. This difference was statistically significant, $p = .0005$, Fisher's Exact Test, lending further support to Baron-Cohen's hypothesis that cognitive perspective taking poses special difficulties for autistic people. A comparison of the three groups on CPLII demonstrated a significant difference in performance, $\chi^2(1) = 13.03$, $p < .001$. In addition, the performance of the normal and the autistic groups on this task was significantly different, $p = .0003$, Fisher's Exact Test, as was that of the autistic and intellectually handicapped groups, $p = .019$ Fisher's Exact Test. Again, no significant difference between normal and intellectually handicapped groups emerged, $p = .34$, Fisher's Exact Test, indicating that the significantly lower success rate in the autistic group was not simply attributable to retardation.

To explore Baron-Cohen's (1988; Baron-Cohen et al., 1985) hypothesis at an individual level, the performance of each autistic subject across all four perspective-taking tasks was also examined (Table II). All autistic subjects but one succeeded on both VPLI and VPLII, and this one subject likewise failed all remaining tasks. Of the 12 autistic subjects who passed both Level 1 and Level 2 visual tasks, only 3 succeeded on CPLI. Of these, only 1 succeeded at CPLII. However, 1 of the autistic subjects who failed CPLI passed CPLII. Thus, individual comparisons across domains generally supported group findings outlined above, and supported Baron-Cohen's suggestion that cognitive perspective taking is much more difficult than visual perspective taking for autistic subjects.

Table II. Number and Percentage of Subjects Succeeding on Four Perspective-Taking Tasks

Group	VPLI	VPLII	CPLI	CPLII
Autistic				
n	12	12	3	2
%	92	92	23	15
Normal				
n	13	13	11	11
%	100	100	85	85
Intellectually handicapped	13	13	8	8
%	100	100	62	62

DISCUSSION

This study explored the abilities of autistic, normal, and intellectually handicapped subjects to perform visual and cognitive perspective-taking tasks at two different levels of difficulty. The goal was to directly test Baron-Cohen's (1988) hypothesis that cognitive perspective taking is more difficult than visual perspective taking for autistic subjects using a common sample of subjects and two levels of measurement in each domain. This hypothesis was based on the idea that autistic people have particular difficulty with metarepresentation, a cognitive skill deemed necessary for cognitive perspective taking, but not visual perspective taking. In view of the many other correspondences between these two types of perspective-taking tasks, a finding that autistic subjects were able to do visual tasks while failing cognitive tasks would provide direct evidence of autistic subjects' lack of ability for metarepresentation. Results supported the hypothesis in three ways: (a) The autistic group performed significantly less well on cognitive than on visual perspective taking tasks at both levels. (b) The autistic group succeeded to the same extent as normal and intellectually handicapped controls on visual but not on cognitive tasks. (c) The individual data of all autistic subjects were consistent with a model of Level 2 visual perspective taking as easier than Level 1 cognitive perspective taking. This is consistent with Baron-Cohen's (1988) suggestion that complex visual perspective taking can be performed using mental rotation of primary representations and that autistic subjects are not selectively deficient in this latter cognitive domain.

These results differ from those of Leslie and Frith (1988) who compared autistic subjects' performance of Level 1 visual and Level 1 cognitive perspective-taking problems and found a relatively high (61%) rate of suc-

cess on the latter. The possibility that this figure may have been due partly to chance guessing is reinforced by the present finding that only 23% of autistic subjects succeeded on a similar task when stricter controls for guessing were applied.

However, the present findings are in line with Baron-Cohen et al.'s (1985) earlier study of Level 2 cognitive perspective taking. In that study, whereas 85 and 86% of normal and Down syndrome children, respectively, succeeded on the (Level 2) cognitive perspective-taking task, only 20% of the autistic children did so. Our corresponding data show 85% success for normal, 62% for the retarded, and 15% for the autistic group, respectively. These results support Baron-Cohen's (1988) hypothesis that difficulties with metarepresentation are particularly salient among autistic subjects. Leslie and Frith's results for the Level 2 task were very similar to both the present study and Baron-Cohen et al.'s (1985) study, providing additional confirmation.

Autistic subjects have significant language disabilities. This makes it difficult, in doing research, to be certain whether they are unable to do a particular task or whether they are simply unable to understand the instructions. This is not a trivial problem and must always be taken into consideration when working with this population. However, the fact that the vast majority of the present group of subjects succeeded on the visual perspective-taking tasks as well as on the control questions in the cognitive perspective-taking task makes it unlikely that their difficulty with these particular cognitive perspective-taking tasks was primarily linguistic.

Neither is there reason to attribute autistic subjects' failure on this task to negativism. Clarke and Rutter (1979) investigated alleged negativism in autistic children and found no evidence of unusual negativitism. Further, all subjects in the present study gave the strong impression of being more than willing to participate in the experimental tasks. In addition, such an attribution fails to explain why subjects would consistently fail on cognitive tasks while succeeding on their visual analogs.

A common explanation for the disabilities of autistic subjects is that they arise out of an aversion to or an inability to cope with social contact. Thus it might be argued that the autistic subjects in the present sample who failed on the cognitive perspective-taking tasks did so because they involved having to consider the behavior of dolls which represented people. However, the fact that they uniformly succeeded on the "dolls-seeing" pretest and on both visual perspective-taking tasks suggests that it is not the "socialness" of the cognitive tasks that is the major problem since the visual tasks equally require consideration of someone else's experience.

An unavoidable limitation of this study was our inability to obtain IQ test information about the control groups. Despite this, however, it does not seem likely that the present pattern of results could be due simply to lower overall intelligence in the autistic than the control groups. In particular, the

fact that the retarded comparison group in this study was drawn from a segregated special school in a state where mainstreaming and special classes are attempted before segregation for any intellectually handicapped children capable of functioning in these environments, coupled with the fact that our autistic sample deliberately excluded all those scoring below average in performance IQ, makes IQ superiority of the retarded group to our autistic group seem highly unlikely. Nevertheless, the retarded group did display significantly superior performance to the autistic group on both cognitive perspective-taking tasks. Also, in the light of the precautions taken to select "average" normal children to match the autistic sample's verbal mental ages, the difference in cognitive perspective-taking performance between these two groups is much larger than would be expected if IQ were the sole basis for the autistic group's deficiency.

On the other hand, it should be noted that the deficiencies we observed in cognitive perspective taking were neither universal nor specific to autism. Some autistic subjects succeeded on these tasks, and some normal and intellectually handicapped subjects failed them. Possibly further research will help to clarify whether level of autistic disability predicts degree of impairment on cognitive perspective-taking tasks and, if so, to test Baron-Cohen's (1988) further inference that "the small subgroup of autistic children who *do* have a theory of mind at the lowest level should be predicted to be less pragmatically impaired than the majority who show no theory of mind at all" (p. 396). While no empirical assessment of the pragmatic skills of the two autistic subjects who passed the most difficult CPLII task was possible in this study, further research exploration of this issue is clearly called for, ideally using tasks such as the present guessing-controlled CPLI and CPLII measures to identify individuals for further study in the pragmatic domain.

At a broader level, the basis for the autistic subjects' failure on the cognitive perspective-taking task may be an inability to think abstractly. Rather than this being explained by the obvious social difficulties of autistic subjects (Hobson, 1988), it may explain them. Social situations are frequently ambiguous, rarely explicit, and rarely concrete, therefore, the subject who is unable to deal with information that is either symbolic or abstract could be expected to have extreme difficulty in learning how to cope with social situations. In other words, rather than autistic subjects failing an abstract task because it is "too social," they may fail social tasks (including social interactions in everyday life) because they are too abstract.

Abstract thought, including metarepresentation, refers to the ability to manipulate one's immediate representations. That is, to go beyond simply representing objects and events to combining, comparing, altering these representations to form a wider or higher order concept or a representation of a representation. A lack of ability to manipulate one's representations means an inability to escape from the particular to the general. It can be seen

ple's difficulty, noted by Rumsey (1985), in deriving rules from context which is really a specific instance of their well-known difficulty in generalizing. In considering education, such a disability clearly amounts to a severe general learning disability. Other research also supports the view that abstract, symbolic thinking is impaired in autistic individuals. Thus Riguet, Taylor, Benaroya, and Klein (1981) and Sigman and Ungerer (1981), found that autistic children showed severe impairment in symbolic play compared with normal and with retarded children, and studies by Hammes and Langdell (1981) demonstrated that autistic subjects had difficulty manipulating their representations of what they saw. In addition, Maltz (1981) found that autistic subjects were significantly impaired in abstract "formal" discrimination compared with normal and retarded children.

It can be seen also that the pragmatic aspects of language (for example, turn taking or topic relevance) with which autistic persons have so much difficulty can be explained by an inability to derive rules from context without specific training as well as an inability to consider another person's experience of conversation. Further, the well-known literalness of autistic people's language is also explained by an inability to think abstractly.

The difficulties experienced by autistic subjects in accurate understanding of others' cognitive states in particular, and in dealing with abstraction in general, have implications for their social behavior. It has been pointed out that these disabilities may prevent autistic subjects from learning the rules of normal social interaction, which we usually expect children to "pick up" through experience and observation, and from using interpersonal cues (e.g., body language, tone of voice, hints) to modify their behavior. The obvious implication for assisting subjects to overcome, as far as possible, their social difficulties is that the most effective means may be to provide specific, concrete rules for behavior and consistent training in the application of these rules. As recognized by those working with autistic people, it is clearly unrealistic to ask them to "put themselves in another's shoes" and derive their own guidelines for appropriate social behavior.

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