Introduction to

"Autism: Intelligence and Cognition"

The background of this investigation is as following: The testing took place during the winter 75-76. The investigation which the article is based on was inspired by Oppenheim's "Effective Teaching Methods for Autistic Children" (1974) as well as "Psychotic behaviour" by Haracopos and Kelstrup (1975). The messages of these books coincided with my own experiences, as well as the theoretical knowledge that I had acquired from Else Hansen, the head of Sofieskolen, in the late sixtieth.

At that time the concepts were not as varied, the use of the language not so precise and there wasn't much research, so we were groping our way ahead. But the belief in the children, that they could learn something, was important.

The article is included in this connection as part of the historical background. Later on, there will be added comments, which can relate the investigation to the present knowledge.

At that time the children's knowledge was 'hidden', because we professionals hadn't discovered it. The article is printed as it originally was written. I had thought of some changes, but decided that historically it is most correct to leave it as it was written then. The investigation was among others an attempt to get a view of the children's linguistic understanding.

The concept *'Hidden Knowledge'* was used in Denmark at the time instead of the concept *Facilitated Communication* which is used today. The concept hidden knowledge was misleading – it would have been better to use the expression *'unused inner resources'* or '*undiscovered inner resources'*.

Today one would call 'blocking' a neurological dysfunction, as Rosemary Crossley so well points out in her response to the article.

Maureen Pilvang, September 2000.

Autism: Intelligence and Cognition

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Abstract.

An exploratory study using the Peabody Picture Vocabulary Test attempted to assess the autistic child's reported "good cognitive ability" (Kanner, 1943).

Evidence is presented which indicate that these children spontaneously display only a fraction of their knowledge, disguising their real cognitive capacity by their autistic pattern of behaviour.

The postulate of the "knowledge hiding child" is presented; then its educational and psychological implications are discussed, with reference to work that is based on this concept which is the basis of the approach to psychotic / autistic children in Denmark.

Introduction.

There continues to be conflicting evidence reported regarding the cognitive ability of the autistic child. Kanner (1943) states quite clearly that the children have good cognitive ability, Research since then has produced ambiguous results. This issue is of the utmost importance because therapeutic and educational practice with these children is based on IQ assessments. It seems likely that the autistic child generally receives an inappropriately low IQ assessment, either due to the psychological test requirements, or their administration restraints being unsuitable for these children's particular problems.

The Peabody Picture Vocabulary Test (Peabody) was administered to a group of autistic children in order to assess their IQ's and to determine their MA's. Trying to discover also why these children, known by their teachers to possess intelligence and ability, were only rated as "subnormal" or "severely subnormal" by the psychological tests.

Method.

Subjects:

Out of the full compliment of thirty five pupils resident at a school for autistic children in England thirty were chosen as more clearly satisfying the basic criteria generally accepted for the diagnosis of Early Infantile Autism (EIA). That is briefly,

> onset prior to 30 months,
> stereotyped behaviour; preoccupation with sameness,
> impairment of interpersonal relationships, and
> social behaviour,
> language impairment.
>
> (Rutter, 1978)

All the children at the school had been diagnosed as EIA by highly qualified clinicians, despite this five of them were not included in these tests as their present behavioural patterns did not agree with the diagnostic criteria. The high number present of this type of child was due to the fact that at this time it was the only boarding school in Britain for autistic children. The children were therefore drawn from the whole country and from all socio-economic backgrounds.

The children's relevant details are presented in Tables I and II.

TABLE I. DETAILS OF THE CHILDREN TESTED.

	Speech category						Approximate years at the school		
	1	2	3	4	5	6	1	4	5
MALE n = 23	2	7	9	3	2	-	3	11	9
FEMALE n = 7	-	2	2	-	-	3	1	4	2

SPEECH CATEGORIES.

1. "normal" but over complex.
2. Age immature “normal” sentence.
3. Two-four word sentence, ungrammatical beyond immediate needs.
4. Meaningful words, immediate needs.
5. A few bizarre or stereotypic words, echolalia.
6. No speech.

(Based on DeMyer et al, 1973; Lotter, 1966; Clark and Rutter, 1977, use similar but more abridged system.)

Procedure:

The American version of the Peabody (Dunn, 1965) was administered according to the manual's standardized procedure. The English version was not used because it is age restricted, i.e. 12 years. This created some elements of extra difficulty for the children. Gould (1976) points out for example that there is a cultural bias in the American version; Moss and Edmonds (1960) found variations in the "order of difficulty" for British children. Due to these factors the results reported here may represent depressed scores.

Only one child and the test administrator were present during the testing, which took place during the children's free time, in the late afternoon or early evening. Five of the older children were tested in a relatively quiet room at a nearby hostel, the rest in one of the school's residential staff-rooms. For all children, but especially for the autistic child, it is recommended that distracting stimuli are avoided during testing, e.g. a clear work table; freedom from noise, etc (Anastasi, 1968). It was impossible to reproduce these ideal conditions therefore no special conditions were adopted. No rewards, other than reassuring praise, were used in the tests, nor had ever been used by the administrator.

The test administrator was known to all the children, over a one to three year period: as special teacher to seven of them, a few others being taught occasionally, and all in a social setting during the weekend and evening activities.

Special aspects of the test procedure:

Normally psychological testing requires a precise adherence to the minutely described standardized procedure for each test, every detail of the test situation is laid down. Tone of voice and facial expression, lightning levels and chair sizes are critical (Anastasi, 1968). The Peabody allows greater freedom and is therefore more suitable for use with autistic children. (Dunn, 1965; Gould, 1976; Haracopos and Kelstrup, 1975). The Peabody is not time limited, it allows various response actions and does not require a verbal response. It permits the questions to be repeated and the assessment of MA's are independent of chronological age.

The autistic child engages in behaviour that interferes with both his response to general stimuli and to the specific learning situation, his autistic pattern of behaviour "blocks" normal response patterns.

At the more basic level this is observed when the child runs around the room flapping or continuously screams. It is imperative to help the child to control his behaviour before any positive learning, or a required response can be obtained. Oppenheim (1974); Wing (1966).

More difficult to observe but equally important to overcome, is the child's hidden "blocking" behaviour, which affects cognitive processes. The "blocking" concept refers to the behaviour that the child exhibits to maintain his preservation of sameness or to avoid requested responses. Blocking is defined and described in the discussion section.

Because of these blocking behaviour patterns certain special methods in obtaining rapport during the tests were required, which whilst allowable in the Peabody, would invalidate most other psychological tests. In the Peabody the test administrator is able to facilitate the test requirements and elicit the child's optimum performance by adopting these methods.

The methods referred to are *intrusion* and *structuring*, and are utilized continuously when working with the autistic child.

Intrusion refers to "forcing oneself" into the child's blocking behaviour demanding his attention and response. e.g. if a child is completely withdrawn in the test situation the administrator must strenuously and continuously demand and obtain the child's attention. This can mean repetition of the stimulus words, knocking sharply on the table or calling the child's name loudly.

Structuring is forming for the child restraints, controls and a direction that he cannot, or will not, provide for himself. e.g. the autistic child will often point in an impulsive and unfocused manner at the Peabody pictures when he is given the stimulus word, it is then necessary to hold the child's hand and to remind him to stop, wait and think – giving him time to focus on the question and what is required – then when the restraint is removed the child can give a meaningful and attentive response.

Intrusion and structuring methods are required to counter blocking behaviour, the amount and effort required and their success depend upon the test administrator's ability and understanding in using them, the relationship with the child, and the knowledge of the child's individually specific blocking behaviour, plus an optimistic belief in the child's potential abilities.

These "special aspects" do not invalidate the test results obtained, they merely place the emphasis on the child and the best way to elicit his interest and by optimum rapport obtain the best results. That is, not placing the emphasis on the infallibility of the results if the test procedures are minutely observed.

Many examples are available to show the importance of the "subject – tester" relationship, and the differences that the demands made by the tester can make, even with the normal, motivated child. e.g. whether the tester is a stranger or not to the child has been shown to make a significant difference to the test scores, (Sacks, 1952; Tsudzuki, Hata and Kuze, 1957). Likewise the general manner and behaviour of the tester, e.g. smiling, nodding or making appreciative comments also have decided effects on the results. (Wickes, 1956).

If these and similar factors are important in eliciting adequate and accurate assessments with normal subjects then every effort should be made to use all the supportive, sympathetic methods available to release the hidden knowledge in these autistic children.

Results:

The scoring and analyzing of the test results were completed independently of the test administrator.

The results are presented in Table II and in Figures I and II.

TABLE II. PEABODY DERIVED IQ AND MA SCORES.

Plus assessments 2-3 years earlier

Child's number	Age Yrs. Mths.	Mental Age			Intelligence Quotient	
		Peabody derived	Previous assessment		Peabody derived	Previous assessment
1	8.4	10.2	0		118	0
2	9.3	14.6	0		139	0
3	9.5	12.3	4.2	Rc	124	0
4	9.6	11.0	3.10	Rc	110	0
5	10.2	14.10	2.7	Rc	132	0
6	10.6	12.1	3.10	Rc	104	0
7	10.8	12.11	0		112	94
8	11.7	18+	Unt.		150+	Unt.
9	12.6	14.10	2.8	Rc	107	0
10	12.7	12.11	4.4	Rc	102	75
11	13.6	18+	5.11	Rc	126	90
12	13.11	16.7	5.11	Rc	113	67
13	14.2	18+	3.0	Rc	150	0
14	14.9	14.3	6.6	Pea	97	107
15	14.11	14.6	0		99	50
16	14.11	8.11	1.4	Rex	71	0
17	15.1	18+	0		145	0
18	15.1	16.7	3.2	Rc	108	67
19	15.2	6.3	Unt.		56	Unt.
20	15.3	12.9	1.11	Pea	91	52 (Leiter)
21	15.7	18+	Unt.		116	Unt.
22	15.11	10.5	4.6	Rc	75	56
23	16.1	18+	3.1	Rc	119	45
24	16.3	8.7	2.11	Rc	65	Below 45
25	16.3	16.7	Unt.		102	Unt.
26	16.4	15.7	5.10	Pea	99	68
27	16.11	15.9	0		96	81
28	17.8	18+	Unt.		110	Unt.
29	18.8	11.4	3.6	Rc	74	80
30	18.8	11.0	Unt.		73	Unt.

Unt. – Untestable. 0 – No test recorded. Pea – Peabody.
Rc. – Reynell, coprehension Rex. – Reynell, expressive.
Previous IQ test – WISC (one Leiter); full or part scale not recorded.

FIGURE I. DERIVED MA SCORES.

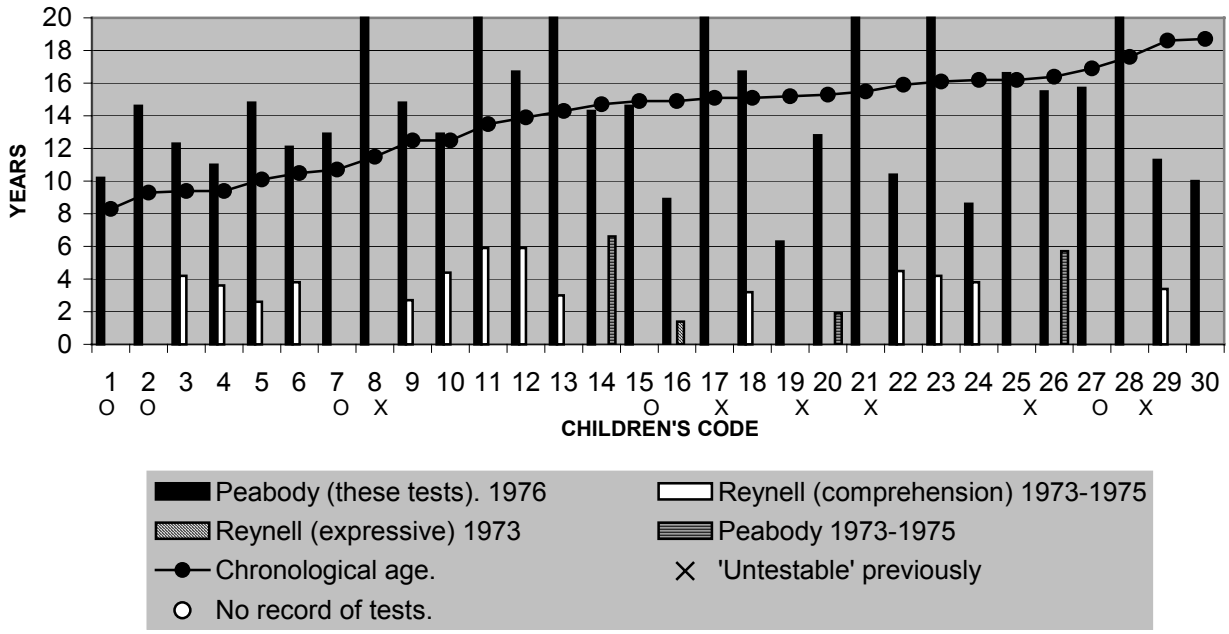
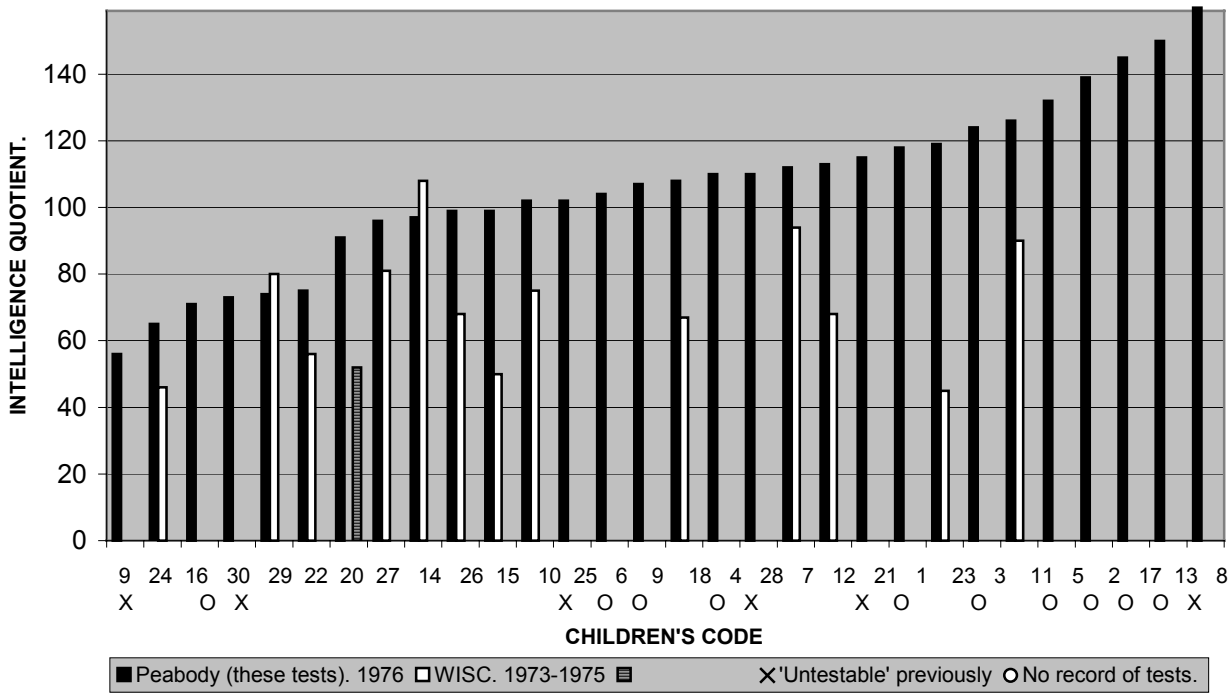


FIGURE II. DERIVED IQ SCORES



Notes on the figures.

a) Figure I shows that all the first group of children (number's 1-15: chronological age range 8-15 years) have comparable or advanced MA vs. CA levels. In the older group (number's 16-30: chronological age range 15-18 years) seven display very depressed MA vs.CA levels.
b) IQ (Figure II) and speech ratings.

Speech categories 4:5:6.

Child's number	2	8	13	16	18	19	20	24
Age: yr.-mth.	9.3	11.7	14.2	14.11	15.1	15.2	15.3	16.3

The three younger children (2:8:13) with little or no speech are close to top of the IQ scores and have good MA levels.

Four of the older children are at the bottom of the IQ scores and have poor MA levels.

Comments.

An explanation for these differences is required, are they due to:

a) maturational process deterioration,
b) inappropriate remedial education,
c) test artifacts,
d) blocking mechanism.

Experience has shown that the longer blocking behaviour is allowed to determine the child's behaviour and his interaction with the environment and other people, the more pervasive and entrenched it becomes, possibly leading to cognitive capacity deterioration.

The children's general test behaviour and response patterns are presented in table III.

TABLE III. PEABODY TEST: CHILDRENS BEHAVIOUR.

Example needed	One	20
	Two/Three	9
	More	1
Speed of response	Fast	10
	Average	14
	Slow	6
Attention span	Attentive	13
	Average	9
	Distractable	8
Need for praise	Little	6
	Some	4
	Much	20
Shyness	Friendly	21
	Shy	8
	Very shy	1
Guessing	When asked	10
	Resistance	7
	Prone to	8
	None	5

Effort	Good	15
	Fair	12
	Poor	3
Need to repeat stimulus	Never	2
	Seldom	16
	Often	12
Motor activity	Hyper	13
	Average	10
	Hypo	7
Sedation	None	22
	Some	5
	Heavy	3
Perseveration	None	26
	Some	1
	Frequent	0
	Don't know	3
Type of response	Verbal	1
	Pointed with own finger	23
	Pointed with teacher's finger	1
	Used both own and teacher's finger	5

NOTE.

Blocking behaviour ratings were determined based on the child's response pattern during the test, e.g.

a) refusal to respond to a stimulus word (Designated output blocking),
b) pretending not to hear the question (designated input blocking),
c) deliberately choosing the wrong answer, like pointing to all wrong answers and studiously avoiding the correct one.

A low rating is occasional and half-hearted blocking.

A high rating is stubborn resistance or continuous blocking. Seven children exhibited no blocking; 13 children low blocking; 10 children high blocking.

Further explanation of blocking behaviour is to be found in the discussion.

(We distinguish between deliberate and involuntary blocking behaviour).

Comments to the results:

The nine children designated "untestable" by skilled psychologists all completed the Peabody test. Three of these nine children, plus four others, reached the test ceiling i.e. MA 18+.

The following classification of the children is made using the "Index of brightness" scale utilized by Dunn (1965):

IQ	Learning classification	Number of children
Below 75	Very slow	5
75 – 89	Slow	1
90 – 109	Average	10
110 – 124	Rapid	8
Above 125	Very rapid	6

From thorough examination of the responses no indication was found that any child had avoided or increased his error rate on any of the content loaded pictures. These stimuli pictures included man-made objects, animals, birds, nature, scenes, musical instruments, occupations, scientific materials, parts of house, and wearing apparel. Neither was there any avoidance behaviour evident with emotional content stimuli, or human action and human form, like that found by Shipe, et al. (1964) with groups of "withdrawn, acting out and non – disturbed retardates in residential settings". No consistent errors arose due to the use of words that had different grammatical derivations, i.e. singular and collective nouns, gerunds, adjectives or verbs.

The stimulus words in the Peabody Test increase in difficulty as the test progresses. It is worth noting that most of the children tested could correctly identify – "capsule, projector, transportation". At a more difficult level a third of them were correct with – "vitreous, concentric", and five children advanced beyond – "cupola, eclipse". Many of the children became highly motivated as the test progressed, becoming more interested, exited and evidently pleased with themselves. This was in contrast with the first simple words when they often needed a great deal of encouragement and support. A few children blocked completely on the simplest examples and the test had to be restarted later at a more advanced level.

It is noticeable that the lower IQ scores are mainly associated with the adolescents in the group, this may be due to test artifacts but more likely explanations are

a) this group were those that blocked most highly during the tests and time did not allow the intrusive techniques to be effective. (These adolescents were least well known to test administrator. It could have required months of contact before trust and rapport were acquired, plus insight into their personalized blocking behaviour, thus allowing intrusive methods to be effective)
b) inappropriate remedial education and expectation levels previously adopted with the adolescents,
c) differing teaching methods in operation over the last few years with the younger group.

The Peabody tests can be criticized as only measuring one aspect of language - the size of vocabulary understood, i.e. single substantive words (Boucher, 1976), and not expressive vocabulary or the ability to use language, (Berger and Yule, 1972). Dunn (1965) however states that the Peabody is "designed to provide an estimate of the subject's verbal intelligence through measuring his hearing vocabulary" p.25. He later produces justification for this claim by reporting numerous research findings, p.34-40.

Haracopos and Kelstrup (1975) consider the Peabody (also the Leiter test) as the best type of test for the autistic child and that the results are a good indicator of overall IQ. Dunn (1965) reports that vocabulary is the best single indicator for predicting school success.

Benaroya et al (1977) using the Peabody in order to complete a comprehensive study of children with communication and related disorders expected it to offer "a measure of auditory discrimination, audio-visual integration and cognitive experimental matrix related to receptive vocabulary".

Vocabulary may be "just words" but words are not just auditory – motor associations (Johnson and Myklebust, 1967), they are "saturated with meaning" (Vygotsky, 1962). Before comprehension can occur a myriad of sensory impressions must be received and integrated, words become meaningful only when an individual has an experimental associative matrix to recognize their symbolic significance. It therefore appears that the Peabody provides a measure of, and gives insight into, the following processes:

i) Input processes – sensory. Audio-visual receptive capacities (Johnson and Myklebust, 1967); auditory discrimination (Benaroya et al., 1977); visual discrimination, (Johnson and Myklebust, 1967)
ii) Central process – association. Audio-visual integration and cognitive experimental matrix (Benaroya et al., 1977); ability to codify environmental objects and events: long term memory, (Menyuk, 1974); retrieval of codified items: recall and recognition (Williams, 1970); audio-visual-motor cross modality integration, co-ordination and organization, i.e.. inter neuro-sensory processes; the ability to learn, erect and utilize symbols.
iii) Output processes – motor. Motor response activity and feedback mechanisms (Annett, 1969); fine and gross motor association patterning.
iv) Knowledge and ability measurement. Hearing vocabulary and estimate of verbal intelligence (Dunn, 1965); vocabulary of words understood (Boucher, 1976); comprehension of the test requirements: short term memory; estimate of full scale IQ and MA scores (Wechsler, 1949; Terman and Merrill, 1937; Haracopos and Kelstrup, 1975).

It follows that individuals who achieve a moderate or high score on the Peabody must possess the above aspects of cognitive activity. Therefore from the evidence of these tests many autistic children appear to have intrinsic complex intellectual activity.

Discussion.

The above findings give some insight into the autistic child's actual or potential cognitive ability, they also have other important consequences in regards to their language problems. Language deficiencies are stated by Rutter and his associates (1966, 1970, 1971, 1972) to be the single most important prognostic factor for autistic children. Many others also regard this as a basic problem. There is evidence to suggest a primary difficulty in symbol processing according to Churchill (1972), and Rutter et al (1971); while Colby (1975) regards the autistic child as "dissymbolic". Hermelin and O'Connor (1970) state that the children have a limited vocabulary, while Frith (1976) believes that they register and store information normally but that they may be unable to recall it in the normal way. Rutter summarizes the evidence that

> "shows that autism develops on the basis of a central disorder of cognition, which involves the impairment of both comprehension of language and defects in the utilization of language or conceptual skills in thinking" Rutter (1972).

However as Kanner (1943, 1958) and Rimland (1968) point out 50% of autistic children do have some speech. The results reported here from these tests do not fit some of the findings mentioned above either.

Williams (1970) says that there are three requirements for expressive language

i) a vocabulary (the presence of words understood),
ii) retrieval processes (the ability to select an item from the store in a single moment of time),
iii) emission of words in strings or sequences (syntax).

From findings of this study it would appear that many autistic children, even those without speech, possess at least two of these three requirements, it is the final stage that the autistic child does not typically produce spontaneously. Menyuk (1974) suggests that this failure may be due to them adopting different processing strategies for linguistic and non-linguistic data, due to a possible delay in cognitive or social development. Menyuk states that the function of language go through various stages of development.

at first it is used to "communicate needs and feelings and to establish contact",

then to "codify environmental objects and events for himself",

finally to "communicate these codifications to others for description and verification".

Many authorities would say that the autistic child has not developed any of these stages, yet these results suggest that the second stage is present, and that the deficiencies in the other two stages are due to a failure on the part of the child to adequately demonstrate his needs, feelings and verification requirements. This failure is because his knowledge and needs are hidden beneath the autistic pattern of behaviour.

Benaroya et al (1977) concluded from their Peabody test that the children "encounter difficulties in information processing and in the organization of experience, thought and affect with seriously limits in interaction and communication". Their conclusions based on poor Peabody results may not be true of autistic children, whose limited interaction and communication is not due to information processing difficulties and experience organization per se, but because through their blocking behaviour they prevent and limit input as well as limiting output.

These findings indicate that many autistic children may possess far greater cognitive abilities and capacity than has generally been accepted. This indicates that the knowledge they possess is hidden and they present only their very low level of general functioning, unless they are given support so they can reveal their knowledge.

The concept of the "Knowledge Hiding" child.

Following on from these conclusions the postulate presented here is that the autistic pattern of behaviour is due to

> "a dysfunction in the consistent naturally occurring spontaneous response to general and specific external and kinaesthetic stimuli".

The dysfunction – presumably biochemically based – present itself as either a drive, (a natural or instinctive tendency to achieve a goal or satisfy a need), or as habit of reaction to excitation etc. which is acquired voluntarily or involuntarily (Drever, 1966). This definition indicates that the autistic pattern of behaviour is an altered process, an undeveloped proficiency or a compensatory measure – physiological and/or psychological – developed to offset an innate or early acquired impairment or abnormality.

The idea that the autistic pattern of behaviour stems from the child's attempts to cope with a basic physiological dysfunction by the use of blocking mechanisms, forms the basis of the understanding and management of the psychotic/autistic child in Denmark. They accept the concept of the knowledge hiding child, and this is based on the belief that these children are typically and potentially of good cognitive ability, but that they do not produce their knowledge, or their capacity for learning, spontaneously.

Oppenheim (1974) is of the same opinion

> "they ..... never display spontaneously so much as one thimbleful of higher capacity and performance than one asks of them". p 96.

Or as DesLauriers and Carlson (1969) put it

> "there is evident in these children's behaviour an inhibition of response" p 160.

The reason for this phenomenon is thought to be based on the child's insistence on the preservation of sameness, and on his "fear of performance" i.e. of using himself and of revealing his knowledge and skills. (Haracopos and Kelstrup, 1975).

The child's method of avoiding demands is by blocking behaviour. Blocking is operationally defined as,

> "behaviour patterns engaged in by the child in order to prevent or limit sensory input, to evade central cognitive processing demands, as a refusal to engage in response activity".

This behaviour is also called by Haracopos and Kelstrup (1975) "sabotage" behaviour. DesLauriers and Carlson (1969) define negativistic behaviour in a similar way, i.e. a dampening and protective device used out of fear or as a defence, an internal barrier. Park (1976) found too

> "..... blocks against learning and against achievement itself." p 264.

This concept and approach would go a long way towards explaining the ambiguous findings in other relative areas of autistic research, e.g. psychological testing, negativism, and IQ and MA assessments.

Theoretical implications.

Psychological testing: Difficulties in obtaining realistic results to the standardized psychological tests have been consistently reported, Anthony 1958, 1962; Rutter's work 1967 to 1977; and others. There are also reports of the child's lack of co-operation and inconsistent performances from Kanner through to Hertzog 1977 and Roberts 1977. Alpern (1967) reports that correct and incorrect responses are often reversed on re-testing while Clark And Rutter (1977) report that two authors (Gajzago and Anthony) describe test scores as "uninterpretable". However

DeMyer and her co-workers (1971 through 1974) make the more positive claim, that autistic children are testable and that the results are reliable and valid – but this statement is qualified by saying that the tests must be of an infantile standard.

Comments.

These difficulties in obtaining adequate and replicable test results should be considered in the light of the knowledge hiding child. If the children tested are accepted as using blocking behaviour then the inadequate, fluctuation performances and results are natural consequences of such behaviour. DeMyer's infantile test levels are not an advantage because they elicit greater blocking behaviour and result in inappropriately low IQ and MA assessments. Providing that the intrusive techniques are utilized, and tests appropriate to the child's expressive problems used, then age compatible tests are suitable and advisable.

Negativism.

The whole question of compliance and resistance in autistic children has been thoroughly examined by Clark and Rutter (1977). They conclude from their own experiments that,

> "the findings indicate that negativistic behaviour, in the sense of deliberate avoidance of the correct response in a discrimination task, is not a general characteristic of autistic children with or without spoken language".

Negativism has been defined by Ekstein et al (1958) as

> "the avoidance of a requested response by substituting an alternative"

Clark and Rutter suggest that wider definition of negativism may be required that would include motivational and task involvement concepts. Then the child would be included who deliberately avoids responding at all, or who chooses any but the correct response, who randomizes his responses or merely follows some personalized ritualistic response pattern.

Comments.

It can readily be seen that this expanded concept comes close to the idea of the knowledge hiding child presented here. It is also similar to the way negativism is used by DesLauriers and Carlson (1959).

The Clark and Rutter study failed to replicate earlier findings by Cowan et al (1965); they suggest that this may be due to the fact Cowan used children from an institution while their own children came from a school - home environment. However in terms of the concepts presented in this paper a more likely explanation is that the level of intrusion, rapport, control and expectation was different. The differences in the two studies reflect how much of the child's hidden knowledge was revealed during that particular test.

The child's basic resistance and negativism comes across time and time again in the literature,

- *avoidance and temper tantrums in order to escape performing,* DeMyer (1972).
- *withdrawn from trying, resorted to resistance and negativism,* Colby (1973).
- *An unwillingness to respond correctly, "they knew the correct responses, were able to emit them, but did not do so on demand"* Cowan (1965).
- *Untestable because they did not respond,* Hertzog (1977).
- Park (1967) writes,

- *"so again and again it was as if she could but would not"* p 49.
- *"..... though she could not take the initiative she was glad when the initiative was taken"* p 93.
- *"..... content to do nothing, she was glad to be occupied"* p 95.

The resistance and the negativism are there, the spontaneity is not, so that the intrusive techniques are crucial for the child's wellbeing and progress.

Assessment levels.

The IQ and MA assessment of autistic children continues to produce confused and ambiguous findings. DeMyer and her associates (1971 through 1974) after completing extensive research describe her autistic subjects as being of "subnormal intelligence", later that they had IQ's that fall within the range of the severely mentally retarded, she presents figures that show that 73% of them all have verbal and non verbal IQ scores below 35. That 97% were below 68, while 75% were below 51. She also found that these figures remained stable on re-testing at various intervals between two and sixteen years. Rutter (1972) also states that the majority of the children are mentally retarded and autistic.

There is on the other hand persistently recurring support for Kanner's original claim that autistic children displayed "islets of intelligence and good cognitive ability". (Kanner and Lesser, 1958; Anthony, 1958; Prior et al, 1975; Haracopos and Kelstrup, 1975). Haracopos and Kelstrup believe that these children possess not "islets" but "mainland's" of intelligence. Rutter (1972) does not grant the autistic child these special abilities, while DeMyer et al (1972) say that 95% of them do not display "splinter skills".

Comments.

Contemporary findings by Rimland (1978) reveal that at least 10% of autistic children possess "extraordinary skills" in certain special fields, he has labelled this group "helpless geniuses".

The concept of the knowledge hiding child suggest that these islets of intelligence represent the potentially high general ability of these children that has been focused into one narrow area. If therefore the autistic pattern of behaviour had not been allowed to dominate the child's life style his intellectual functioning may have developed more evenly and the "mainlands of intelligence" have been revealed and activated.

The reason for DeMyer's (and others) low assessment of these children's IQ and MA levels is because of the blocking behaviour that these children adopt, the psychological tests used and the lack of intrusive methods undertaken.

Consequently the use of the wrong tests or techniques result in an inappropriately low assessment of the children. Autistic children suffer more than most children with handicaps from these assessments. Once a child is anathematized with a subnormal or mentally retarded label he is treated accordingly, expectations remain low and containment and control become substituted for remediation. For example DeMyer et al (1974) can state that if the IQ of an autistic child is less than 40 the parents should be counselled not to

> "expend too much of the family resources on treatment", if the IQ is above 50 then the treatment and education should be "geared to give them a chance of reaching borderline functioning".

Wing (1977) says that autistic children's potential should be assessed early, and

> "to find out just how long it is necessary to continue with a concentrated teaching programme before being able to decide if it is likely to be worthwhile".

Park (1967) however points out,

> "to treat so marginal a child as retarded would itself ensure that she would become so; if she were in fact retarded it would make her worse".

Therefore if far-reaching decisions are to be made on the strength of an IQ or MA assessment they must be accurate, if they have to err then it should be on the child's side, in his favour. Generally this has not been the case with these knowledge hiding children.

With most psychological tests three factors militate against the autistic child's response pattern; most are time – paced, verbal response orientated, and require tester detachment. These particular children require a high degree of tester sensitivity, flexibility and the intrusive, restraining approach advocated here. They require response variability that is not time restricted.

Some workers have recognized these aspects, Morey (1967) says

> "measure used for the prediction of the development of groups of children are not really applicable to an individual child with autism".

Oppenheim (1974) stated that

> "in no case should there be any prejudgement about the child's abilities to perform at these cognitive levels based on his low level of general functioning".

There is required a complete and optimistic assessment of the autistic child, not one based on a set of results that do not reflect the child's potential, but rather the tester's abilities, or lack of them, or that merely indicates the attractiveness of a piece of apparatus, or the test material to the child. In a telling article Humphrey (1967) suggests that the "universally reported poor prognosis in mute autistic children might be related to a failure to conceive, and hence adapt, appropriate therapeutic techniques to the specific and basic psychological process defects these children possess".

> "Poor prognosis of autistic non-speaking children, even of reasonable intelligence, may be related to the inevitable failure-inducing traditional mal-educative approach".

Based on these observations there must be an educational approach that is grounded in the belief in the child's true underlying capacities, his hidden knowledge released and real potential actualized. As Johnson and Myklebust (1967) put it

> "the problem is to ascertain the process whereby the child learns most effectively and then to assist him accordingly".

Practical implications.

The concept of the knowledge hiding child, an understanding of blocking behaviours plus a belief in the child's high cognitive potential, despite their general low level of functioning at present, requires that a strong positive line is adopted not only in their test responses but with their education and general care. There is required from the parent, teacher or tester,

a) a high test expectation,
b) a refusal to accept blocking behaviour,
c) a highly structured and controlled situation,

d) dynamic interaction, utilizing encouragement, focused attention and child - centred structuring, i.e. rapport with the child as an unique individual,
e) immediate intrusion into inattention,
f) never giving up, not allowing the child to succeed with his blocking behaviour. Requirement of some step towards a response no matter how small, that shows that the child did respond,
g) physical support where needed to achieve optimum output activity.

Physical support is only a temporary measure which must be gradually extinguished. It is often required to focus the child's attention on the task in hand, and may take the form of hand guidance, finger touching, or just the slightest contact between the child and the adult.

Oppenheim (1974) speaks of feeding in motor patterns. On questioning one boy about the purpose of the touching, he replied, "I cannot remember how to write the letters without your finger touching my skin". p 54.

The need for intrusive methods is highlighted by many workers, e.g. Wing (1966) says that it is vital that the teacher should win the struggle over the child's resistance, "..... in order to achieve a change in the child's attitude to learning which will eventually give him greater independence" p 273-274.

Rutter and Sussenwein (1971) state

> "the adult must intrude on the child in order to deliberately engage him in inter-action" p 380.

Oppenheim (1974) says that the teacher must intrude and insist on acceptable behaviour, correct performances and answers to demands,

> "confronting and overcoming this resistance literally every time it is encountered". p 92.

There must be a

> "relentless and impactful quality of stimulation"

claim DesLauriers and Carlson (1969),

and Park says,

> "we have chosen not to wait for a spontaneity which may never come" p 221.

The autistic child, whether in the test situation, in education or in social training, requires intrusive methods. The forceful breaking into the child's insistence on the preservation of sameness, his blocking behaviour and his negativism, this is the first basic requirement and a continuing need.

Therapeutic education, (plus some behaviour modification methods which follow similar principles), has proved to be the only consistently successful approach to overcoming the child's blocking behaviour. Education must supply an optimal arousing stimulation that will initiate spontaneous activity. Then through self-sustaining patterns this will arouse in the child interest, motivation, curiosity and other attentional aspects typically missing in the autistic child's repertoire. Finally this will activate the malfunctioning self arousal mechanisms or develop compensatory ones. i.e. an educational "priming" function stimulates the organism to action, overcoming the blocking mechanisms and developing a more normal self perpetuating system.

However this approach and the resulting change in behaviour, refers to those aspects of the dysfunction that are the "habit of reaction to excitation, etc", although its effects may help correct the root cause(s) of autism, that have yet to be determined.

These results then suggest, that the general resistance and disinclination to spontaneous response to stimuli, can be overcome through the use of intrusive and structuring techniques, which may lead to homeostatic mechanism involvement as well. It is highly probable that a more basic biochemical remediation approach would correct the cause of the physiological response inhibition, leaving educational techniques to correct the learning deficiencies.

Conclusion.

The results obtained in the Peabody tests reported here reveal these autistic children as having a normal or high IQ level, and being able to function at an advanced MA level. This is the manifest conclusion given the results and the empirically supported interpretation of such scores.

Previously all the children had been assessed as subnormal, or severely subnormal - some as untestable. Which set of assessments are correct? and at which level should remediation and education be provided?.

It is not claimed however that the test results obtained here are accurate, it would be expected that improved scores and higher ratings could be obtained by other skilled testers, with the more successful use of the intrusive methods with some of the children, or even with more sympathetic testing conditions.

The importance of these results is not based on which IQ or MA rating is correct (such ratings are irrelevant – provided that they are ignored.) but rather that remediation must be based on a realistic, even optimistic, expectation of the child's highest potential, and not based upon some artificial measure especially when it is inappropriately low.

The crucial points presented here are

a) that the children who performed in these tests as well as, and often better than, age matched average pupils,
b) the cognitive capacities revealed,
c) the extent of the knowledge hiding,
d) that the children's blocking behaviour can be overcome, and
e) no rewards were given or needed.

These results suggest that it is possible that typically the autistic child has good cognitive abilities and potential, that are concealed behind their autistic pattern of behaviour. Once the knowledge and ability is recognized and released, the blocking behaviour controlled and then eliminated, his full potential can begin to evolve. This evolvement will need to progress through the missed maturational levels. The older the child the greater will be the discrepancies, so much so that it may be impossible to progress far into these levels for some of the adolescents.

However if this autistic pattern of behaviour is also super-imposed upon and concealing a separate pathology, such as minimal brain damage or if indeed the child does have a poor intellectual endowment, then this will become apparent and appropriate remediation can then be provided.

Finally this paper casts doubts on previous psychological testing of the autistic children in this study, only results based on physiological measures can be relied on. No academic researcher can command the required knowledge of the individually specific autistic child to be able to extract the knowledge that the child does not voluntary reveal. Only full time workers with the child or someone who is prepared to invest months in close interaction with specific autistic children, can hope, with the utilization of intrusive techniques, to obtain anything like true assessments and measurements of their real knowledge and abilities, hidden behind their general and specific blocking behaviour. This is the reason that some parents and a few teachers have been successful with a few children, but interaction and success with all autistic children is possible, and their autistic pattern of behaviour can be overcome to a certain extent.

Parents and teachers of autistic children should maintain hope, enthusiasm and high level of expectation. The recommended reading list below represents some of the few examples where an optimistic and positive approach is maintained to the autistic child. They are also significant in being child centered and not syndrome orientated. Kaufman (1976) found that

> "the literature argued against our optimistic mood" p 15,

this remains true of most of the academic literature today.

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