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## VI. Cognitive Factors in Childhood Psychoses

By I. KOLVIN, M. HUMPHREY and A. McNAY

This is the sixth and final paper of a series studying various symptomatic, physical and social aspects of a sample of 47 cases of infantile psychosis (I.P.) and 33 cases of late onset psychosis (L.O.P.). They were seen at the Park Hospital for Children, Oxford, and the Newcastle Child Psychiatry Unit.

The results of routine psychological testing are shown in Table I. In older, more accessible, and brighter children the Wechsler Intelligence Scale for Children or the 1960 revision of the

scored within the normal range. But the intellectual status of these children was markedly superior to that of the I.P. group, I.Q.s of 70 and over being recorded four times as often ( $\chi^2 = 28.4$ ,  $p < .001$ ).

The functional level of the I.P. group was poor even in relation to other published series. Only 21 per cent exceeded the upper limit of educational subnormality (I.Q. 70), whereas figures of 29 per cent have been quoted by Rutter (1966a) and 39 per cent by Gittelman and Birch (1967). Many of these children were indeed totally unresponsive to verbal testing, so reliance had to be placed on the Merrill-Palmer battery with its high performance loading and allowance for refusal of items. Some of the untestable children gave evidence of learning capacity in certain respects when assessed indirectly on the Vineland Social Maturity Scale.

A possible factor in the more favourable I.Q. distribution of Gittelman and Birch's series is the failure of these authors to distinguish between early and late onset of the psychosis. If we were to ignore age of onset the overall distribution of our own series would approximate quite closely to theirs. This suggests that something is lost by pooling heterogeneous cases of childhood psychosis and that the distinction we have introduced has implications for prognosis, at least in the cognitive sphere.

From the clinical findings we have estimated the long-term educability and employability of both groups. Without a follow-up study we have no means of testing our predictions, but we believe that the L.O.P. child is more likely to be educable than employable after leaving school. Indeed, subject to various qualifications all but one of these children had already proved responsive to schooling. With appropriate treatment or educational help 12 were maintained at ordinary schools, another 8

TABLE I  
*Distribution of I.Q. in two psychotic groups*

Global I.Q.	L.O.P. no. of cases 30		I.P. no. of cases 47		Both	
	N	%	N	%	N	%
Under 50/ Untestable	1		24	51	25	33
50-69	4	13	13	27	17	22
70-89	8	26	7	15	15	20
90-110	13	43	3	6	16	21
over 110	4	13	—		4	5

Stanford-Binet (Form L-M) was used and in the other cases the Merrill-Palmer. Although figures obtained from these different instruments are not strictly comparable, it was thought legitimate to combine them within the twenty-point bands employed here. No mean I.Q. has been calculated for the I.P. group, since a high percentage of these children were untestable. Only 3 of the L.O.P. group were not available for testing but both on educational history and clinical impression these children would have achieved an I.Q. of at least 70. The other 30 of the group gave a mean I.Q. of 85.9. There is clear evidence of a downward shift amounting to almost one standard deviation even in the L.O.P. group, only half of whom

at schools for the maladjusted or their equivalent; 5 at schools for the educationally subnormal; 6 had received special schooling in the course of longish periods in institutions; and another child, after assessment in hospital, had returned home where the recommendation unfortunately could not be implemented. Thus at one time or another 32 out of 33 children in the L.O.P. group had attended either an ordinary or an E.S.N. school. In contrast only 18 (54 per cent) impressed the clinician as likely to prove capable eventually of even unskilled work.

The I.P. group presented a more complex picture. With these children the initial assessment would often lead to recommendations which could not be implemented. The number of recommendations thus exceeded the number of cases, and they do not extend beyond the nursery and infant school periods. Of the 14 children recommended for nursery school 11 were placed; of the 4 children recommended for an ordinary infant class, 3 survived there; of the 16 recommended for special schooling (principally of the Rudolf Steiner type) most ended in special units in subnormality hospitals or in E.S.N. schools; of the 5 recommended for E.S.N. schools 4 were placed there. Places were found for all 13 of the children who were recommended for either a subnormality hospital or a training centre in default of any better solution. In 4 cases no decision had been reached when the child was seen last. Finally, even when the recommendations were acted upon the child was sometimes unable to remain where he had been placed. (Not surprisingly only 6 children in this group (13 per cent) were regarded as having reasonable prospects of employment.)

#### *I.Q. and Complications*

The I.P. and L.O.P. group are considered separately in Tables II and III. The L.O.P. cases have been divided into three classes. Taking I.Q. 90 as the lower limit of normality, there is a relationship between low I.Q. and delayed milestones ( $p$  almost .05). However, though the figures are small, perinatal complications seem quite unrelated to later intellectual level, with only one patient falling below I.Q. 90. Cumulative evidence of cerebral dysfunction proved more likely to be associated with poor intellectual level, but again not to a statistically significant extent.

Milestone delays in the I.P. group were so common that no useful patterns emerged. The lower I.Q.s were more frequently associated with perinatal complications, but this fell short of statistical significance. Yet when cumulative evidence of cerebral dysfunction (see Paper V) is considered a clearer association appears. If the I.Q.s are divided into those above and those below 50 a suggestively higher proportion of the below-50 group have evidence of earlier cerebral dysfunction. This is in accord with the findings of Gittelman and Birch that perinatal complications were particularly characteristic of 'schizophrenic' children with lower intelligence and clinical evidence of neurological dysfunction.

A number of follow-up studies have demonstrated that infantile psychotics are often later reclassified as cases of primary mental deficiency (Lourie *et al.*, 1943; Eisenberg, 1957; Gittelman and Birch, 1967). Some authors have explained this in terms of deterioration or developmental failure due to the psychotic process (Lourie *et al.*), while others have argued that the mental subnormality was there from the beginning

TABLE II  
*I.Q. and complications in L.O.P. Group*

I.Q.	Total	Milestone delay	Perinatal complications	Accumulative evidence of cerebral dysfunction
Under 70	5	5	—	3
70—89	8	5	1	3
Over 90	17	6	4	4

TABLE III  
I.Q. and complications in I.P. group

I.Q.	A = B = perinatal total complications		C = accumulative evidence of cerebral dysfunction	
	N	%	N	%
Under 50	23	13	56	16 69
50-69	13	5	38	5 38
Over 70	10	3	30	4 40
Significance	N.S.		p = .07	

but was not recognized as such until some development had occurred (Gittelman and Birch). Our own evidence leads us to prefer the second interpretation even if the matter cannot be settled without a prospective study from birth. Often a belief in its latent intellectual abilities has prevented even the most experienced psychologists from committing themselves about a psychotic child's intellectual potential. We incline to the view of Rutter and Lockyer (1967) that if such a child reaches the age of five without becoming testable then the prognosis must be poor.

#### SUMMARY

1. The cognitive development of 80 psychotic children is reported.
2. Onset of psychosis in the first three years of life (n = 47) was associated with major intellectual deficit, while later onset (n = 33) was associated with only moderate deficit.
3. Low I.Q. tended to be associated with evidence of cumulative cerebral dysfunction in the early onset group and with delayed milestones in the late onset group.

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