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III. The Family and Social Background in Childhood Psychoses

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The first paper of this sequence discussed the division of childhood psychoses into those with onset before the age of 3 (infantile psychoses, I.P.) and those with onset after the age of 5 (late onset psychoses, L.O.P.). The second paper described in detail the clinical phenomena in 80 psychotic children so classified at Oxford or Newcastle (see Table I), and showed that this division corresponded to clear-cut distinctions in the clinical pictures. The I.P. group showed gaze avoidance, abnormal pre-occupations, self-isolating patterns of behaviour, echolalia, overactivity. The L.O.P. group showed hallucinations and thought disorder. With these two groups clearly established we now look to see whether anything in their family and background also distinguishes them.

Table I shows a bimodal incidence of childhood psychoses, the majority of I.P. cases occurring before the age of 2 (as Rutter (1966) also reported), and the peak of the L.O.P. group around puberty. The intermediate cases included one with clear-cut organic features, another with a rapidly developing degenerative disorder with I.P.-like symptoms and abnormal EEG, and a third with lack of speech, obsessiveness and stereotypies who retained relatively warm contact with adults. Kanner (1958) attests to the rarity of childhood schizophrenias as

compared with infantile autism. Our survey of two hospital populations produced 47 I.P. cases and 33 L.O.P. cases and only 24 of the latter were under thirteen years, but it must be remembered that with the lack of special psychiatric services for adolescents some of the cases over thirteen may have been lost to adult psychiatry.

FINDINGS

Social class

The excess of professional parents found by Kanner (1943) in his study of autistic children was originally thought to be a referral bias. Other hospital series (Creak and Ini, 1960; Rutter and Lockyer, 1967) and an epidemiological study (Wing, O'Connor and Lotter, 1967; Lotter, 1966, 1967) have, however, shown a similar excess, slightly smaller in the last case.

In the present series there was a similar excess of professional parents in the I.P. group, but it was lower than in the other two hospital series just quoted. The different series are compared in histogram form. At the time of our survey Oxford provided the main hospital service for the industrial Midlands; and Newcastle served the North East with its rather different social class distributions. Furthermore, the

TABLE I
Age at recognition of psychosis in 83 cases

A. I.P. Group		B. Intermediate		C. L.O.P. Group	
0 — 1 years	25 cases	3 — 4·11 years	3 cases	5 — 6·11 years	1 case
1 — 2	19			7 — 8·11	9
2 — 2·11	3			9 — 10·11	4
				11 — 12·11	10
				13 — 14·11	8
				15 —	1
Total	47		3		33

TABLE II
Social class and parents

	L.O.P.		Present Series		I.P.		Rutter	Lotter	Creak	G.R.O.
	N	%	N	%	N	%	(1966) %	(1966/7) %	(1960) %	(1952) %
Class I	2	} 16	8	} 39	41	41	41	42	31	53
Class II	3		10							
Class III	12	} 37	19	} 41	20	3	13	9	29	18
Class IV	9		8							
Class V	6	} 47	1	} 20	(autistic series for comparison with I.P.)					
Other	1		1							

$\chi^2 = 8.12$ df $p < .025$

Newcastle unit was the only one for child cases on the Tyneside. However, there was a significant difference between the social classes of parents of the L.O.P. and I.P. groups.

It is unlikely that this excess of lower social class parents of L.O.P. children was a referral artefact, though this cannot be ruled out. Anthony (1962) indicated that his secondary psychoses were predominantly from social class III and IV though he did not provide figures.

Comparison with the Goldberg and Morrison study (1963) of adult schizophrenics reveals a steeper social class gradient in the parents of the L.O.P. children than in the parents of schizophrenics. The L.O.P. series was not large enough for significant differences to emerge, nor for any firm conclusions to be drawn, nor can any explanations be offered for this gradient, which appears even steeper than in the

Distribution per cent (approx.)

Class	L.O.P. Parents	Goldberg and Patients	Morrison (1963) Fathers
I+II	16	9	15
III	37	51	52
IV+V	47	40	33

adult schizophrenic cases.

The evidence seems to suggest that the different childhood psychoses are truly linked to social class, with the strong possibility that I.P. is common in social class I and II. When

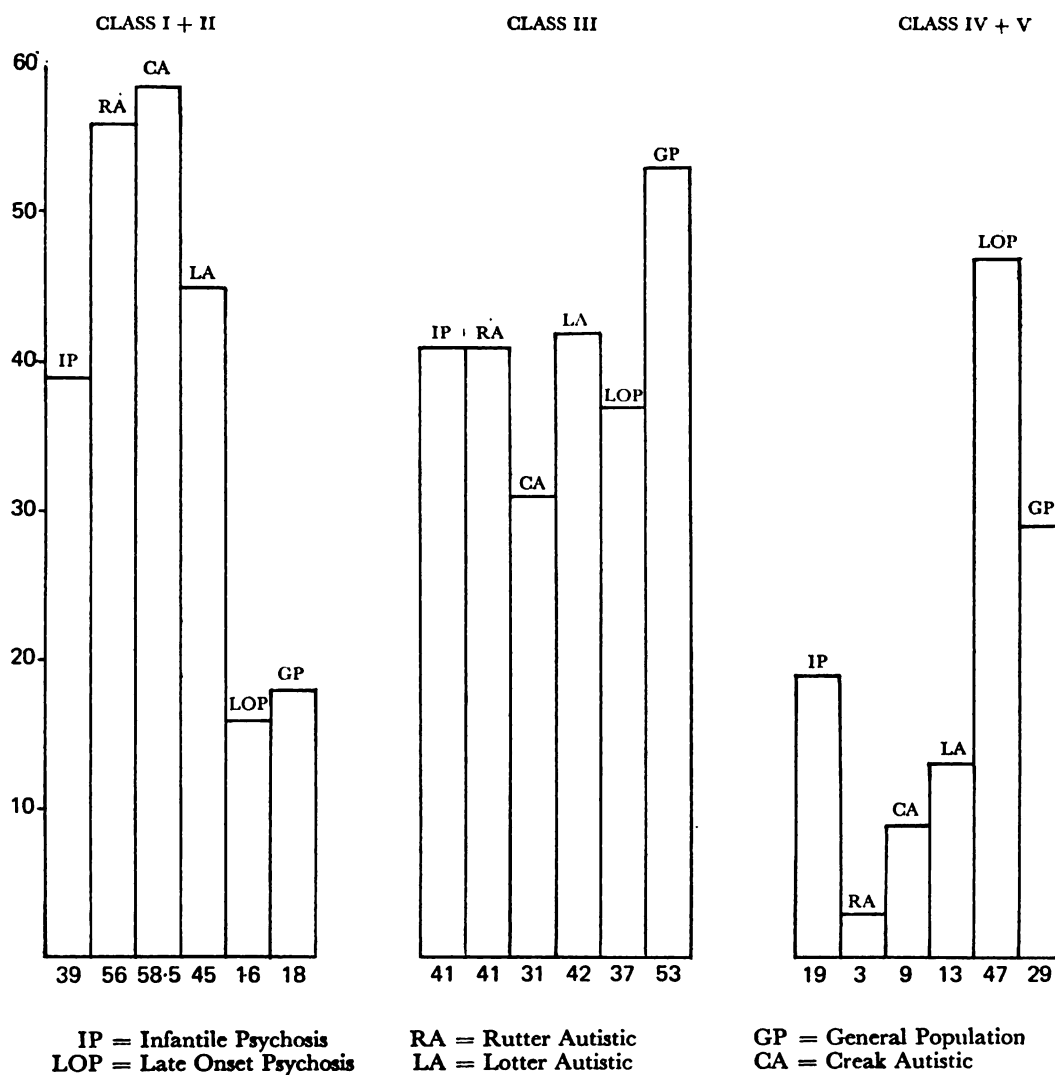
the I.P. cases were divided into 'pure' and 'complicated' groups (Kolvin *et al.*, V) some startling differences emerged. Seventy-nine per cent of the complicated group fell into social classes III to V while only 43 per cent of the pure group fell into these three classes. This again suggests the pure type is significantly tied to social class I and II.

SOCIAL ISOLATION

The concept of social isolation, which has found favour over the last twenty years, is a rather nebulous one and relatively difficult to define. Moreover no figures are available for its prevalence in the general population in the United Kingdom, even without information about the effect on it of social class and cultural variation. Nevertheless, this is such an important area of psychiatry that it was thought that some attempt should be made to study it systematically.

When this study was begun no standardized methods were available for assessing social isolation. On the other hand one does not necessarily have to have norms for a test or technique when the main purpose is simply to compare two groups and not to draw inferences about the general population. A technique was therefore evolved which was partly subjective and partly quantitative. Essentially it depended on clinical assessment of the mother's degree of isolation as shown by the number of formal contacts she had with her immediate

HISTOGRAM SOCIAL CLASS AND PSYCHOSIS (%)



neighbours, her visits to neighbours, friends and relatives, and visits from these over a set period of time, with a judgement of the depth and degree of warmth associated with these interactions. It now seems it would have been better simply to have counted the number of contacts rather than to have classified the mothers as socially isolated or non-isolated.

In spite of its limitations this technique produced some surprising results. Some 19 (approximately 60 per cent) of the L.O.P. cases proved to have socially isolated mothers and only 18 (38 per cent) of the I.P. group. From Kanner's original description of the parents of autistic children as being polite, dignified, not comfortable in the company of people and disinterested in ordinary chatter one would have anticipated that the level of social isolation would have been higher in the I.P. group, whereas in this series the reverse is true but not to a statistically significant level ($\chi^2 = 2.9$ for 1 d.f.). However, in a parallel study (Kolvin, Garside and Kidd, IV) of two dimensions of personality in the parents of I.P. and L.O.P. children and of school phobics, it was found that the mothers of the L.O.P. were more introverted than mothers of both I.P. children and the general population. The possibility remains that what has been measured was high social skill and not necessarily personal warmth.

In addition, when a significant degree of social isolation was present attempts were made to ascertain whether this preceded the recognition by the parent of the presence of some serious disorder in the child. The impression obtained was that when social isolation was present in the mothers and families of infantile psychotic children it was subsequent to the onset of the disorder in the child—almost as if the presence of a damaged younger child sometimes resulted in a retreat from social relationships. Furthermore, in a small number of cases which were followed up it appeared that casework intervention of a simple and supportive variety often resulted in a diminution of the level of isolation. This suggests that the isolation here is more likely to be of a situational variety. In the L.O.P. cases the impression was that the social isolation was not in the main a pheno-

menon of recent onset but was related to more long-standing and deep-seated personality disturbances in the parents.

Language environment of the children

None of the 33 sets of parents of L.O.P. children were born outside the United Kingdom nor were there any homes in which a language other than English was spoken. Amongst the 47 sets of parents of I.P. children 6 were of either continental or Afro-Asian extraction. In these families a second language was spoken to a greater or lesser extent. In one further family the reverse applied, namely they were British-born parents who had lived abroad for a substantial part of the psychotic infant's early life, and though the parents spoke English the child had been cared for by a domestic who spoke only the local language.

It can be argued that this special group of seven I.P. cases was an accident of referral. Nevertheless, the authors think it can provide possible clues to the aetiology of infantile psychosis. It has been argued by Rutter (1965, 1966) that autism may be a disorder partly determined by developmental receptive aphasia, hence the associated speech defects; and Hermelin and O'Connor (1964) and Hermelin (1967) have demonstrated both perception abnormalities and defects not of retention but of coding and categorizing verbally presented material. If a child has a defect in the reorganization and coding of auditorily perceived data it seems reasonable to suppose that he will have greater difficulty in processing material with two completely different sets symbolic bases. Such a child, vulnerable to 'autistic retreat' secondary to sensory confusion, will particularly suffer when exposed to two completely different language systems. Since upper class families tend to expect greater verbal fluency and use of abstractions, such a defective child would be under greater strain in an upper class family, and this might help to explain the excess of I.P. cases in social class I and II, as already noted.

FAMILY MENTAL ILLNESS

In none of the authenticated series has there so far been evidence of raised incidence of

psychosis in the parents of autistic children (Kanner, 1954; Creak and Ini, 1960; Rutter and Lockyer, 1967; Lotter, 1967). For instance, Creak found two schizophrenics among the parents of 60 autistic children and Rutter and Lockyer none among the parents of 63 autistic children. In this study attempts were made to authenticate cases of schizophrenia

TABLE III
Schizophrenia

	Parents		Siblings	
	Yes	No	Yes	No
L.O.P.	6	58	1	55
I.P.	±1	91	0	68
	$\chi^2 = 6.05$ $p < .025$		$\chi^2 = \text{N.S.}$	

amongst the parents and siblings of the psychotic children by carefully checking hospital records. The low rate of schizophrenia amongst parents and siblings of I.P. children is again confirmed: only one parent had what was termed a schizoaffective disorder (± 1 in Table III), which eventually remitted after E.C.T. and phenothiazine therapy. In contradistinction to this there was a very significant level of schizophrenia in the parents of the L.O.P. group. Out of 32 couples there was evidence of schizophrenia in 6 individuals. The parental schizophrenia rate is 9.4 per cent without age correction and 11.7 per cent corrected (Weinberg's Formula). These figures closely resemble those provided by Kallmann and Roth (1956) both for the parental schizophrenia rate of pre-adolescent schizophrenia (8.8 per cent without correction and 12.5 per cent corrected) and the parents of adult schizophrenic twins (9.2 per cent and 10.3 per cent) and also for parents of adult singleton schizophrenics.

It would appear that late onset psychoses of childhood resemble adult schizophrenia at least in genetical respects, while infantile psychosis is unrelated to adult schizophrenia or to childhood psychoses of late onset.

The terms anxiety, neurosis, and depression

were used rather loosely by the parents, and as most of them were treated without hospital admission precise diagnoses and reliable details were not readily available. The diagnosis of depression was so often a false trail that attempts to obtain more information about it were eventually abandoned. It was decided instead to accept a parent as having had a depressive/neurotic disorder if he had seen a psychiatrist and/or had been treated by a general practitioner for 'nerves' with a sedative or tranquilizer. Among all parents were rather a large number who could thus be designated neurotic, and it may be that the figures were exaggerated by the current tendency to use sedatives and tranquilizers easily to combat the tensions and strains of everyday life.

TABLE IV
Depressive/neurotic disorder

	Parents		Siblings	
	Yes	No	Yes	No
L.O.P.	12	52	4	52
I.P.	13	79	3	65
	$\chi^2 = \text{N.S.}$		$\chi^2 = \text{N.S.}$	

More reliable information could be obtained for epilepsy. Three of the parents of the late onset psychotics had epilepsy and in two of these cases the index case had epilepsy as well. This suggested that there might be a familial or hereditary component here. Though none of the parents of infantile psychotics had epilepsy, in one of the other major series (Creak and Ini, 1960) 3 out of 120 parents were reported as having epilepsy.

TABLE V
Epilepsy

	Parents		Siblings	
	Yes	No	Yes	No
L.O.P.	3	61	2	54
I.P.	0	92	2	66
	$\chi^2 = 4.4$		$\chi^2 = \text{N.S.}$	

Of the 68 siblings of the I.P. children none presented with I.P., L.O.P. or schizophrenia. This low rate of psychotic disorder in the sibs of autistic patients has previously been reported by Kanner (1954), Creak and Ini (1960) and Rutter and Lockyer (1967). One out of 56 siblings of the L.O.P. group had an adult type of schizophrenia. Three out of 68 siblings of the I.P. group were found to have some kind of neurotic disorder and four out of the 56 siblings of the L.O.P. group. Similarly three other sibs of the I.P. group and three others of the L.O.P. group were either E.S.N. or sub-normal. In none of these could one infer any significant trends.

Birth order and family size

The patterns of the risk in relation to birth order in infantile psychosis is not clear. The excess of first-born children described by Kanner (1954) has only been confirmed in relation to 'two-child families' (Pitfield and Oppenheim, 1964; Wing, 1966; and Rutter and Lockyer, 1967). Wing, however, has also described a trend for the psychotic child in large families to appear in the second half of the sibship. Though the numbers are small a trend towards an excess of oldest children over youngest children—29 to 12—(see Rutter and Lockyer, 1967) and a smaller mean size of sibship is shown in the I.P. group. The birth order data

TABLE VI
Birth order of I.P. child by size of sibship

Birth Order	Size of Sibship				Total
	1	2	3	4+	
1	13	8	6	2	29
	<i>13</i>	<i>6</i>	<i>4</i>	<i>2.5</i>	
2		4	2	2	8
		<i>6</i>	<i>4</i>	<i>2.5</i>	
3			4	2	6
			<i>4</i>	<i>2.5</i>	
4+				4	4
				<i>2.5</i>	
Total	13	12	12	10	47

Italicized figures are expected totals in each cell.

have also been analysed using Slater's (1962) method. Although the mean ordinal position of neither group departs significantly from expectation there is a trend for the L.O.P. to have a higher mean birth order than the I.P. (.54 and .44 respectively).

TABLE VII
Birth order of L.O.P. child by size of sibship

Birth Order	Size of Sibship				Total
	1	2	3	4+	
1	6	6	2	2	16
	<i>6</i>	<i>5</i>	<i>3.3</i>	<i>1.75</i>	
2		4	3	1	8
		<i>5</i>	<i>3.3</i>	<i>1.75</i>	
3			5	1	6
			<i>3.3</i>	<i>1.75</i>	
4+				3	3
				<i>1.75</i>	
Total	6	10	10	7	33

Italicized figures are expected totals in each cell.

TABLE VIII
Birth order comparisons

	I.P.		Rutter (1967) L.O.P.		Autistic	
	N	%	N	%	N	%
First and first and only	29	62	38	60	16	48
Intermediate ..	6	13	11	17	5	15
Last	12	26	14	22	12	36
Mean size of sibship	2.45		2.37		2.69	

Various explanations for the finding of an association of illness and birth rank are discussed elsewhere (Wing, 1966). A plausible explanation for the finding here is that the parents of infantile psychotic children have limited their family after recognition of the disorder, whereas in late onset psychosis it is too late to limit the family. It might also reflect the tendency of social class I and II families to have fewer children.

Sex ratio

A high male/female ratio among I.P. or autistic children has been reported as follows—Kanner (1954) 4:1, Creak and Ini (1960) 3·6:1, Lotter (1966 and 1967) 2·8:1, Rutter and Lockyer (1967) 4·25:1. In our study it is 36:11 or approximately 3·3:1. There are fewer figures available for preadolescent or L.O.P., but Loew (1966) found in chronic undifferentiated schizophrenia 2·7:1, Kallmann and Roth (1956) in undifferentiated schizophrenia 2·8:1, and we find a similar ratio, 24·9 or 2·66:1. Similar sex distributions have been found in other disorders in childhood. For instance there is a great excess of boys manifesting delinquency, and in children attending out-patient child psychiatric clinics a 3:1 ratio is usually found (Shaw 1966).

DISCUSSION

The available evidence in terms of family and social background broadly appears to invalidate the hypothesis that infantile psychosis is a childhood equivalent of adult schizophrenia. On the other hand there is highly suggestive evidence of a genetic link between late onset psychosis and adult schizophrenia. Further studies are needed to validate these findings about the heterogeneity of childhood psychoses, but it is interesting that division of the cases by age of onset brings out not only clinical distinctions but also differences of family background in the different groups. Lack of classification in the past has simply led to the submerging of important differences. The two possible sources of error in method

which could have produced these findings—the choice of diagnostic criteria and the possibility of referral artefacts are discussed in the 1st and Vth papers of this series.

SUMMARY

1. More parents of children with infantile psychosis belonged to social classes I and II and more parents of children with late onset psychosis to social classes IV and V.

2. A trend was demonstrated in the mothers of L.O.P. children towards a degree of social isolation. This was attributed to their personalities, whereas any social isolation in the mothers of I.P. children was thought to be a withdrawal secondary to the illness of their children.

3. Parents of the I.P. group had a low rate of schizophrenia, parents of the L.O.P. group a significantly high rate, suggesting a genetic connection between L.O.P. of childhood and adult schizophrenia.

4. Boys were more often psychotic than girls; there was some suggestion of a greater risk to the first born in the I.P. group only.

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NOTE

In papers III to V Yates' correction has not been applied to χ^2 analyses, but exact probabilities have been calculated when $N < 50$.

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