

Childhood Behaviour in Schizophrenia, Personality Disorder, Depression, and Neurosis

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SUMMARY Teachers' comments in the childhood school records (grades K-12) of 143 psychiatric patients and their matched controls were coded along 23 bipolar dimensions. Two methods of grouping these scales were compared: rational clusters and factor analysis. Factor analysis yielded more numerous and narrowly defined behavioural groupings. Schizophrenics, personality disorder patients, neurotics, and depressives were compared to their matched controls on each of the cluster and factor scores. Both schizophrenics and personality disordered patients were significantly less agreeable in childhood than their respective controls. Pre-schizophrenics also were significantly more unstable. Depressives were more independent than their controls, while neurotics did not differ significantly in any respect from normals in childhood. The data suggest that schizophrenia may have specific developmental patterns of possible aetiological or early diagnostic significance.

Introduction

Children eventually diagnosed as schizophrenic in adulthood have been reported to show emotional, cognitive and behavioural deviations long before the onset of overt psychosis (Fryer, 1974; Garmezy, 1974; Mednick and Schulsinger, 1968; Roff, Knight, and Wertheim, 1976; Rolf and Garmezy, 1974; Watt, Stolorow, Lubensky and McClelland, 1970; Watt, 1972, 1978). There is some question, however, regarding the specificity of childhood antecedents of schizophrenia; that is, it is uncertain whether childhood deviance precedes only schizophrenia, or whether it foreshadows general psychiatric difficulty (Birren, 1944; Fleming and Ricks, 1970; Pollack, Woerner, Goodman and Greenberg, 1966; Pollack, Woerner and Klein, 1970; Roff, 1967, 1970, 1974; Woerner, Pollack, Rogalski, Pollack and Klein, 1972). Some investigators have found that schizophrenics could be distinguished from personality disordered and

non-psychiatric groups by their '... striking sense of helplessness and inability to cope effectively on their own' in childhood (Fleming and Ricks, 1970, p 259). In contrast, others have failed to find significant differences between schizophrenics and various severely disturbed psychiatric comparison groups, although the psychiatric group as a whole was found to differ from non-psychiatric controls (Pollack *et al*, 1970; Roff, 1970; Woerner *et al*, 1972). It is necessary to establish specific antecedents of schizophrenia, in contrast to indices of general maladjustment, if we are to formulate adequate aetiological theories of schizophrenia and modes for preventing its occurrence. The primary goal of this study is to assess childhood behaviour, as reflected by teachers' comments found in school records, of patients with schizophrenia, personality disorder, depression, and neurosis.

Watt and his colleagues (Watt *et al*, 1970; Watt, 1972, 1978; Watt and Lubensky, 1976)

have used five behavioural clusters (Scholastic Motivation, Emotional Stability, Extraversion, Assertiveness and Disagreeableness), based on coded teachers' comments found in school records, to compare pre-schizophrenics' childhood behaviour with that of matched controls. We note, however, that Watt's procedure of grouping teachers' comments into *a priori* defined clusters reflects the investigator's conceptual structuring of childhood behaviour. One of the unique advantages of using teachers' comments is the opportunity it affords to view children through the teachers' eyes. That natural advantage may be exploited best by factor analysis. We ask therefore, as a second goal of this study, what behavioural groupings are yielded by a factor analysis of the teacher comments and how these empirical factors compare to rational clusters.

In summary, this study has two purposes: (1) to compare the groupings of teacher comments yielded by factor analysis with rationally determined clusters, and (2) to determine if schizophrenic, personality disordered, depressive and neurotic patients differ in their childhood behaviour. The study is presented in two parts: first, we consider the factor analysis of teachers' comments; second, we compare the childhood behaviour (using both empirical factors and rational clusters) of each major psychiatric group to that of its matched normal control.

Method

Subjects

The subjects in this study are described in detail elsewhere (Fryer, 1974). Briefly, the 73 male and 70 female patients in this sample included all those 15 to 34 years of age first admitted to hospital for a functional psychiatric disorder in Massachusetts during the fiscal years 1958–1964, for whom adequate school records could be obtained.

One matched control record was selected randomly from the school files of the same graduating class as the index case. These controls were matched with the index case for age, sex, race, father's occupational level and father's education. The initial criterion for regarding these controls as 'normal' was that, as

of 1964, none had been admitted to any psychiatric facility in Massachusetts. Subsequently, a direct questionnaire follow-up located two-thirds of these control subjects and confirmed that almost all had achieved an adequate social adjustment in adulthood. (Only two controls had been in hospital for psychiatric treatment, and one had been sentenced to a long prison term.) The factor analysis of teachers' comments is based on the school records of 286 subjects (143 patients and their 143 matched controls).

Measures

Following the work of D'Andrade (1965) and Conger and Miller (1966), Watt *et al* (1970) developed a coding system for categorizing the teachers' comments in terms of 23 bipolar dimensions which are combined into five rational clusters (Table I). A child's score on any

TABLE I
Rational clusters of bipolar scales

<i>Scholastic motivation</i>
careful—careless
attentive—distractible
achieving—underachieving
organized—disorganized
motivated—unmotivated
dependable—undependable
<i>Emotional stability</i>
self-controlled—emotional
calm—nervous
secure—insecure
cheerful—depressed
mature—immature
adjusted—maladjusted
<i>Extraversion</i>
much group participation—little
popular—unpopular
sociable—unsociable
talkative—quiet
<i>Assertiveness</i>
assertive—passive
leader—follower
independent—dependent
<i>Agreeableness</i>
pleasant—unpleasant
cooperative—negativistic
considerate—egocentric
well behaved—misbehaved, anti-social

given cluster is the simple sum of the scales making up that cluster. As the scales are bipolar, the cluster values may range from positive to negative (for example, scholastically motivated *vs.* scholastically unmotivated). A total of 11,835 comments were coded for all patients and controls for grades K–12. The difference between mean number of comments for patients (38.3) and controls (44.4) approached significance, $t(284) = 1.888$, $P < .10$.

A methodological issue of some concern with these data is the degree of test-retest reliability of the scales. As a rough measure of test-retest reliability, we correlated the scale scores for grades K–6 with those for grades 7–12, using those subjects having at least one year of comments in both K–6 and 7–12. These totalled 222 of the 286 subjects or 78 per cent. The Pearson product-moment correlations for the 23 scales ranged from .06 to .55, with a mean of .21 and a median of .17 ($P < .006$). Of the 23 correlations, 20 were significant at the .05 level or better. As comments by primary school teachers were recorded on different record forms from those by junior and senior high school teachers, these correlations can be taken as evidence for inter-observer reliability of measurement, as well as indicating trait stability over time.

Data analysis

We factor analysed (non-iterative, orthogonal varimax rotation) the 23 scales for the entire sample of 286 children. As sex differences in childhood behaviour have consistently been reported for parts of this sample (Watt *et al.*, 1970; Watt, 1972; Watt and Lubensky, 1976; Watt, Prentky, Lewine and Fryer, 1976), we used the square-root method to partial out the correlation between sex and the individual scales from the correlation matrix used as input for the factor analysis (Nunally, 1967). This results in a set of factors independent of sex.

The original factor analysis yielded eight factors with eigen-values greater than 1.00. In order to minimize scale redundancy among factors, we chose to retain only those scales which correlated .40 or better with a factor.¹ This procedure left two unassigned scales:

'leadership' and 'co-operation'. These two were then assigned to the factors on which they had the highest loading. The final eight factors, accounting for 58 per cent of the cumulative variance, and factor loadings for the scales are presented in Table II. Considering the scale components of each, the eight factors were labelled as follows: Conscientiousness, Security, Extraversion, Personableness, Independence, Achievement, Submissiveness, and Consideration.

Diagnostic considerations

The patient sample consisted of 59 schizophrenics (33 males, 26 females), 40 personality disordered patients (27 males, 13 females), 28 neurotics (9 males, 19 females), and 14 depressive psychotics (2 males, 12 females).² A sex by diagnosis chi-square analysis revealed a significant difference in the distribution of diagnoses by sex ($\chi^2_{(3)} = 20.04$, $P < .001$). Women were more often diagnosed as neurotic or depressed, but less often as personality disordered.

All diagnoses were based on the most frequently recorded primary diagnosis in the hospital record. We note, however, that the use of hospital staff and case record diagnoses in psychiatric research has been seriously questioned (Ritzler and Smith, 1976; Strauss, 1975). We therefore analysed psychiatric symptoms (as recorded in and coded from hospital records) among the four diagnostic groups. This allows us to take a step toward operationalizing the criteria by which staff made a diagnosis (Ritzler and Smith, 1976), and provides a crude clinical picture of our patients.

We were able to code reliably the presence of 70 symptoms, whose interrater reliability for 16 cases ranged from .40 to 1.00 (mean value of .82, and a median of .86) (Fryer, 1974). Over 90 per cent of the symptom items had a reliability exceeding .65. Symptoms were coded for 135 patients (53 schizophrenics, 14 depressives, 40 personality disorders, and 28 neurotics).

¹ The entire factor-scale loading matrix is available from the second author.

² Two of the 143 patients were dropped from the analyses because of insufficient hospital record data.

TABLE II
Childhood school behaviour factors
 (N = 286)

Factor	Item	Loading	Per cent variance explained
Conscientiousness	careful—careless	.807	17.1
	attentive—distractible	.681	
	dependable—undependable	.636	
Security	calm—nervous	.705	9.3
	secure—insecure	.669	
	adjusted—maladjusted	.552	
Extraversion	sociable—unsociable	.727	6.7
	talkative—quiet	.726	
	self-control—emotional	-.435	
Personableness	popular—unpopular	.716	5.5
	pleasant—unpleasant	.648	
	cheerful—depressed	.519	
	cooperative—negativistic	.369	
Independence	independent—dependent	.791	5.4
	mature—immature	.646	
	leader—follower	.356	
Achievement	achieving—underachieving	.712	4.7
	motivated—unmotivated	.668	
Submissiveness	behaved—misbehaved	.696	4.6
	assertive—passive	-.598	
	much—little group participation	-.419	
Consideration	organized—disorganized	.753	4.4
	considerate—egocentric	.548	

TABLE III
The ten most frequent reported symptoms for schizophrenics, depressives, personality disorders and neurotics

Schizophrenics (N = 53)		Depressives (N = 14)		Personality Disorders (N = 40)		Neurotics (N = 28)	
Symptom	% Showing	Symptom	% Showing	Symptom	% Showing	Symptom	% Showing
Anxiety	75	Depression	86	Anxiety	78	Anxiety	86
Depression	74	Anxiety	64	Depression	75	Depression	86
Withdrawal	68	Insomnia	43	Low self-esteem	52	Somatic complaint	61
Delusions	68	Agitation	36	Hostility	48	Low self-esteem	57
Quiet	64	Suicidal	36	Anger	40	Agitation	54
Hallucinations/ Unreality	60	Delusions	36	Quiet	40	Anger	54
Confusion	57	Withdrawal	36	Dependent/Passive	38	Hostility	46
Paranoid ideation	55	Guardedness	29	Somatic complaint	38	Dependent/Passive	46
Agitation	55	Low self-esteem	29	Drinking/Addiction	35	Weight loss	43
Suspicion	51	Resentfulness	29	Suicide attempt	35	Suicidal	36

Table III shows the ten most frequently occurring symptoms in each diagnostic group. With the exception of anxiety and depression, which are common to all of our patients, each group presents a different symptom picture consistent with its diagnostic classification, though understandably a systematic basis for differentiating neurotic from personality disordered patients is elusive. The predominance of anxiety and depression in schizophrenic inpatients has been reported by others (Wittenborn, 1977).

Finally, the patient groups were compared in three areas relevant to diagnosis: socio-economic status, adult pre-morbid competence, and psychiatric outcome. Table IV gives the inter-group comparisons for socio-economic status (both of the patient's father and of the patient at hospital admission), scores on the Phillips six-factor index of social competence (Phillips and Ziegler, 1961), and three measures of psychiatric outcome (a global pathology rating, total days in hospital, and days in hospital at first admission) at a six-year follow-up. Details of all these measures are available elsewhere

(Fryer, 1974; Prentky, Watt, Lewine, and Fryer, 1977; Watt, Prentky, Lewine and Fryer, 1976).

A two (sex) by four (diagnosis) analysis of variance for each of the measures yielded the following results. Neither social class of origin (as measured by the father's occupation) nor patient's socio-economic status (Hollingshead-Redlich two-factor index) differed significantly among the four groups. There was a significant main effect of diagnosis on the pre-morbid social competence scores, $F(3/137) = 9.83$, $P < .0001$. Both the schizophrenic and the personality disorder groups had significantly lower adult pre-morbid competence scores than either neurotics or depressives (Duncan Multiple Range Test, $P < .01$). The schizophrenics and the personality disordered did not, however, differ significantly from one another. There was a significant main effect of diagnosis on each of the outcome measures: global rating, $F(3/137) = 13.50$, $P < .0001$; total days in hospital, $F(3/137) = 9.71$, $P < .0001$; and days in hospital at first admission, $F(3/137) = 2.67$, $P < .05$. Pairwise comparison of mean outcome

TABLE IV
Means and standard deviations for socioeconomic status, adult premorbid competence, and psychiatric outcome by major diagnosis

	Diagnostic group							
	Schizophrenics (N = 59)		Personality disorders (N = 40)		Depressives (N = 14)		Neurotics (N = 28)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Social Class								
Father's occupation*	3.52	1.80	3.30	1.83	3.64	2.34	3.11	1.81
Socioeconomic status†	76.24	18.74	77.79	23.66	61.75	20.85	73.78	22.17
Adult premorbid social competence‡	2.83	.76	3.02	.57	3.60	.82	3.60	.73
Outcome§								
Global	1.66	.68	2.35	.70	2.36	.74	2.46	.58
Total days in hospital	.08	.10	.20	.15	.18	.11	.22	.17
Days, first admission	.18	.18	.25	.15	.27	.16	.28	.18

* Scores for father's occupation range from 1 (unskilled) to 7 (professional).

† Hollingshead-Redlich Two-Factor Index; scores range from 20 ('high' SES) to 120 ('low' SES).

‡ Phillips Six Factor Index; scores range from 1 (poor premorbid competence) to 5 (good premorbid competence).

§ All outcome scores were calculated so that increasing values reflect 'better' outcome. The reciprocal of the square-root transformation was used in analysing both total days and first admission hospitalization.

scores (Duncan Multiple Range Test) indicated that schizophrenics had significantly poorer outcomes than the other three groups as reflected by global ratings ($P < .01$) and total days in hospital ($P < .01$). Schizophrenics had poorer outcomes than neurotics as measured by days at first admission ($P < .05$). There were no main sex effects or sex by diagnosis interactions on any of the measures.

Results

Both cluster and factor scores were calculated by summing the scales making up any given

cluster or factor. For example, a child's score on the *Conscientiousness* factor would be the sum of the scales: careful-careless, attentive-distractible, and dependable-undependable. A two (patient *vs.* matched control) by two (sex) analysis of variance was carried out for each of the measures, separately for each diagnostic group.

Summaries of the main effects of diagnosis on the cluster and factors scores are presented in Tables V and VI, respectively. Looking first at Table V, we find only three main effects of diagnosis. Two of them are for schizophrenics

TABLE V
Significant ($P < .05$) *F* values for patient *vs.* control analyses of variance of cluster scores

Clusters	Schizophrenics <i>vs.</i> Controls	Personality disorders <i>vs.</i> Controls	Depressives <i>vs.</i> Controls	Neurotics <i>vs.</i> Controls
Scholastic motivation	—	—	—	—
Emotional stability	8.65**	—	—	—
Extraversion	—	—	—	—
Assertiveness	—	—	—	—
Agreeableness	7.08*	7.09*	—	—

Note. In all cases, the patients had a lower score than their respective controls.

* $P < .05$.

** $P < .005$.

TABLE VI
Significant ($P < .05$) *F* values for patient *vs.* control analyses of variance of factor scores

Factors	Schizophrenics <i>vs.</i> Controls	Personality disorders <i>vs.</i> Controls	Depressives <i>vs.</i> Controls	Neurotics <i>vs.</i> Controls
Conscientiousness	—	—	—	—
Security	5.40*	—	—	—
Extraversion	4.07*	—	—	—
Personableness	4.01*	6.22*	—	—
Independence	—	—	4.75*	—
Achievement	—	—	—	—
Submissiveness	5.61*	—	—	—
Consideration	8.07**	—	—	—

Note. Schizophrenics were more submissive, and depressives more independent than their respective controls; in all other cases, patients had lower scores than controls.

* $P < .05$.

** $P < .01$.

who were less emotionally stable ($-.45$) and less agreeable ($-.30$) than their normal counterparts ($-.11$ and $-.65$ for emotional stability and agreeableness, respectively). Personality disordered patients also were less agreeable ($-.23$) than their controls ($-.72$). None of the other patient versus control comparisons were significant.

We see, in Table VI, that there were seven main effects of diagnosis on factor scores, five of them reflecting differences between schizophrenics and their controls. Schizophrenics had lower scores than normals on Security ($-.29$ versus $-.11$), Extraversion ($-.34$ versus $-.14$), Personableness (.34 versus .60), and Consideration (.02 versus .23). Schizophrenics, however, had a higher score on Submissiveness ($\chi = 0$) than matched controls ($\chi = -.08$). The personality disorder group scored lower than their controls on Personableness (.35 versus .72). Finally, depressives had a higher mean score (.02) than their matched controls ($-.38$) on Independence.

Although there were several main effects of sex on cluster scores, there were no significant sex by diagnosis interactions for any of the analyses. As our primary interest in sex differences would be in their relation to the development of psychopathology, in other words the sex by diagnosis interaction, we do not report them here.

Discussion

Rational clusters vs. empirical factors

A comparison of the scales making up the clusters and the factors reveals that the factors form narrower categories than the clusters. In some cases, factors reflect the division of a cluster into finer components. The factors 'Conscientiousness' and 'Achievement', for example, are composed only of scales from the cluster 'Scholastic Motivation'. In other cases, a factor represents a new conceptual structuring of childhood behaviour. 'Personableness', for instance, is made up of scales from 'Emotional Stability', 'Extraversion', and 'Agreeableness'; 'Submissiveness' includes scales from the clusters

'Agreeableness', 'Assertiveness', and 'Extraversion'. Overall, the clusters yield a more global structuring of childhood behaviour than the factors. Both, however, are similar in their tapping of emotional, cognitive, and interpersonal spheres of childhood behaviour.

If, as we assume, the factors reflect the teachers' own organization, the results of the factor analysis indicate that teachers make fine-grained discriminations in their observations of children. In the 'Scholastic Motivation' example above, the teachers apparently made a distinction between trying to do well (Conscientiousness) and actually performing well (Achievement). These results are consistent with Beck's (cited in Conger and Miller, 1966) report that teachers are capable of making sophisticated and valuable observations regarding the psychological adjustment of their students. The factor analysis, in yielding eight factors, also is consistent with the view that the structure of childhood personality is complex (Cattell and Coan, 1957; Digman, 1963).

The clusters and factors did not differ substantially in their discrimination of patients. Across all diagnostic groups, three of 20 (15 per cent) cluster comparisons and 7 of 32 (21 per cent) factor comparisons yielded patient-control differences. Until there is further evidence regarding the relative strengths and weaknesses of factors and clusters, adopting one over the other seems to depend upon one's research philosophy and goals. The factors are empirical and sex-independent. The clusters group behaviour into broader categories, thereby providing somewhat more reliable scores, since more scales are used. The clusters are based upon previously demonstrated behavioural groupings (Conger and Miller, 1966; D'Andrade, 1965), and present a less complex view of childhood behaviour than the factors (Achenbach, 1966; Peterson, 1961). The greater homogeneity of grouping in the factor scores may offer a slight advantage in statistical analyses, though this may be offset somewhat by their narrower data base and their vulnerability to unique sample characteristics. Finally, the factors require cross-sample replication and validation.

Diagnostic group differences in childhood behaviour

Whether one uses clusters or factors in comparing the childhood behaviour of adult psychiatric patients to matched controls, schizophrenics clearly stand out as the deviant group. This is especially striking in the analysis of factor scores in which five of the seven significant patient-control comparisons occurred in the schizophrenic group. Children destined for schizophrenia as adults were judged to be less secure, personable and considerate of others and more introverted and submissive than a group of matched normals.

Personality disordered patients also were described by teachers as less personable in childhood than their controls. This finding is consistent with other reports of childhood interpersonal abrasiveness in adult personality disorder (Woerner *et al*, 1972), and suggests that lack of personableness (popularity, pleasant and cheerful disposition, and co-operativeness) in childhood may be a general indication of later severe psychiatric disorder.

On the basis of our findings, we are led to postulate that children eventually admitted to hospital for schizophrenia as adults, in contrast to those admitted for neurotic, depressive, and personality disorders, exhibit signs of insecurity, introversion, submissiveness, and lack of consideration for others. This is consistent with reports of helplessness and poor coping skills in pre-schizophrenics (Fleming and Ricks, 1970). Disagreeable personal traits in childhood are as common for personality disorders as for schizophrenia, but distinguish both of these groups from neurotics and depressives.

It will be correctly noted that our data do not provide any predictive validity. That is, we cannot predict which of all children who might be described as insecure, introverted, submissive, and inconsiderate will become schizophrenic as adults. That would require a prospective longitudinal study beginning with a sample selected for the behaviours described above, as well as studies in which the base rates of schizophrenia varied. The findings, at this stage, may more profitably be interpreted as contributing to the construct validity of the 'open concept' of schizophrenia (Cronbach and

Meehl, 1973; Meehl, 1962). Our results are consistent with other reports indicating that adults already identified as schizophrenic were showing signs of emotional and interpersonal deviance in childhood long before the onset of overt psychosis (Garmezy, 1974; Garmezy and Streitman, 1974). We might, therefore, expand our concept of schizophrenia to include certain emotional and interpersonal patterns of childhood. Such a trend has already been initiated by the inclusion of social and work relationships in recent diagnostic procedures for schizophrenia (Strauss, 1975; Strauss and Carpenter, 1974). A conception of schizophrenia spanning childhood and adulthood, as well as spheres of behaviour (cognitive, emotional and interpersonal) would be consistent with developmental theories of schizophrenia (Garmezy, 1970; Phillips, 1968; Sullivan, 1953). In expanding our perspective on schizophrenia, however, we should not lose sight of the distinction between the clinical expression of schizophrenia in the morbid state and pre-morbid behaviour.

For heuristic purposes, we present in Table VII the factors which differentiate schizophrenics from controls and the schizophrenic symptoms with which they seem to be analogous. The picture of childhood behaviour (emotional instability, insecurity, introversion, submissiveness, and inconsiderateness/egocentricity) in our sample of schizophrenics is consistent, in part, with the concept of schizoidness. Characterized by extreme sensitivity, social withdrawal, shyness, passivity, and autistic detachment, the schizoid personality is thought to be an important precursor of schizophrenia (Cadoret, 1973; Kaplan, 1972; Kolb, 1973; Salzman, 1974; Stephens, Atkinson, Kay, Roth and Garside, 1975). Unfortunately, our data cannot shed any light on the question whether the childhood behaviour shown by the schizophrenics reflects a personality type prone to schizophrenia, or whether the childhood deviations were the early manifestations of the schizophrenic process (Cadoret, 1973; Heston, 1970; Planansky, 1965). Furthermore, the schizoid personality is not a necessary condition for schizophrenia. Other personality types have been demonstrated to precede schizophrenia,

and the 'shut-in' personality has not been found to increase the risk for schizophrenia in child guidance clinic samples (Arieti, 1974; Gottesman and Shields, 1972; Kay, Roth, Atkinson, Stephens and Garside, 1975; Morris, Soroker and Burrus, 1954). Finally, we do not necessarily imply a one-to-one relationship between the childhood factors of the pre-morbid stage and the clinical symptoms and behaviour in adulthood. Clearly, we cannot make any causal inferences on the basis of our data, but wish only to point out the similarity in the behaviours and the possible longitudinal continuity in the emotional and interpersonal lives of schizophrenics.

TABLE VII
Comparison of discriminating childhood factors and schizophrenic symptoms in adulthood

Childhood Factor	Schizophrenic symptoms and associated behaviour in adulthood
Inconsiderateness (egocentricity)	Egocentricity; autism
Submissiveness	Delusions of passivity
Introversion	Social withdrawal
Insecurity	Anxiety; ontological insecurity

The failure of childhood cognitive, in contrast to emotional and interpersonal, variables to differentiate schizophrenics from their controls may be interpreted in at least three ways. First, our measures based as they are on teachers' *ad lib.* comments do not adequately assess cognitive development and deviance. Second, emotional and interpersonal deviance may be a more subtle indication than cognitive disturbance of incipient schizophrenia. Third, interpersonal and emotional problems may precede thought disorder. The last two, especially deserve further consideration in future longitudinal studies.

In contrast to the negative picture for pre-schizophrenics, children eventually admitted to hospital for depression were seen as *more* independent (independent, mature, and leader

than their matched controls. We have in this finding longitudinal evidence for the theory that depression is associated with high levels of maturity and development (Phillips, 1968).

These data, suggesting that schizophrenics are distinguishable from other psychiatric patients in childhood, contrast with some reports in the literature indicating the absence of such discrimination (Roff, 1976; Woerner *et al.*, 1972). There are methodological differences which could account for this discrepancy. Woerner *et al.* (1972) used the siblings of schizophrenics and personality disordered patients as controls, their subjects were predominantly middle class, and their rational behaviour groupings were specifically designed to tap *problem* behaviour. Our data, in contrast, indicate that emotional and interpersonal deviance, not necessarily sufficiently severe to be labelled as a problem, may presage schizophrenia. Roff's (1970) work has been based on child guidance samples, a procedure yielding a biased sample of people suffering psychiatric disorders in adulthood (Mednick and McNeil, 1968; Watt *et al.*, 1970).

In sum, we have found that teachers' perceptions of the structure of childhood behaviour is complex and discriminating. Factors and clusters offer two different ways of viewing childhood behaviour. While factor scores are somewhat more discriminating than clusters in comparisons between patients and normals, there is no firm basis for choosing one over the other. It may be wise, therefore, to use routinely both behavioural groupings in analysing teacher assessments.

In comparing the childhood behaviour of schizophrenics, personality disordered patients, depressives, and neurotics, we found evidence for a coherent pattern of childhood deviance among schizophrenics. A single trait, independence, distinguished psychotic depressives. In addition, low scores on personableness characterized both schizophrenics and personality disordered patients. Further pursuit, elaboration and refinement of these childhood patterns, especially through prospective studies, may prove to yield important advances for aetiological theory and for early diagnosis of serious adult emotional disorders.

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