A SIMPLE AND RELIABLE SUBCLASSIFICATION OF CHRONIC SCHIZOPHRENIA

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No detailed and comprehensive system of subclassification of chronic schizophrenia has been generally adopted in this country. Most psychiatrists are content to use the broad categories of simple, hebephrenic, catatonic, paranoid and undifferentiated schizophrenia. Placing a patient into one of these subgroups entails a judgment which is based upon all the information at the clinician's disposal. Such data are necessarily unstandardized; the method of collection varies from doctor to doctor and from patient to patient, and the criteria of classification are not uniformly agreed upon. No objective tests are available which would serve to check the accuracy of the decisions taken. It is inevitable, in these circumstances, that clinical systems of subclassification should not be much used for scientific purposes. The basic essential of a classifying instrument is that it should produce the same results in the hands of different investigators, and that its standards of measurement should not vary from one occasion to another. No study so far published has attempted to deal with this problem, which becomes more serious as the elaboration (and possibly the clinical usefulness) of the classification increases. Leonhard's system (1, 4, 5) for example, would gain enormously if its reliability could be demonstrated.

A method of classifying chronic schizophrenic patients which could be simply, rapidly and consistently applied would be valuable for a number of purposes, notably for describing and comparing hospital populations and for delineating subgroups for psychological and sociological study. The present work was designed to show whether a very simple classification, based on leading symptoms assessed during a brief psychiatric interview, could be used consistently by different psychiatrists, and whether chronic schizophrenic patients would need to be reclassified after a period of six months. An attempt was also made to discover whether patients in the defined subgroups showed differences in their ward behaviour, as independently observed and rated by senior nurses. The process of increasing reliability inevitably entailed restricting and standardizing the information obtained. A great deal of material which a clinician would think relevant was excluded and, for this reason, the system was not intended for clinical use on its own.

DEVELOPMENT OF SYMPTOM RATING SCALES

Four typical attributes of schizophrenic mental state were chosen, each of which could be rated on the basis of information obtained during a clinical examination of the patient. These symptoms were flatness of affect, poverty of speech, incoherence of speech and coherently expressed delusions. An attempt was made to define each symptom and to construct a 5-point scale for rating it. No behavioural items were included since insufficient information could be obtained during a short interview. The scales are presented in Appendix A.

The ratings were made on the basis of a partially-standardized interview.

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During the first ten minutes or so the patient was asked how he felt about life outside hospital, and what plans he had for returning to the community. A series of questions about life in the hospital, and about topics of general interest, followed. The same questions were asked of each patient and usually in the same order. Replies were recorded. This part of the interview provided a sample of speech about relatively neutral topics. Then certain questions referring to possible mental symptoms were always put. The patient was asked how he got on with other people, whether anyone seemed to be against him or tried to do him harm or talked about him, whether he could think clearly, whether there was any interference with his thoughts, whether he had experienced anything in the nature of hypnotism or telepathy or electricity playing on his mind, whether his thoughts were read, whether there was any reference to him on the radio or television, whether he had any special powers or abilities, whether he was specially religious, whether he heard voices or saw visions, whether events seemed strange or puzzling, and whether things looked and sounded normal. Supplementary questions were asked as necessary and such specific questions as seemed likely, from a study of the case notes, to bring out the appropriate psychopathology. The interview usually lasted from 20 to 30 minutes, depending on how much the patient was prepared to converse. It is not suggested that this constituted a full examination of mental state: only certain aspects were examined systematically. Ratings could be made on three of the four scales largely according to the recorded replies to the standard questions. Flatness of affect would mainly be rated by a subjective judgment on the part of the interviewer. The four symptoms are described in more detail below.

Flatness or Incongruity of Affect

This trait was the most difficult to define objectively. A positive rating meant that there was a gross incongruity between the content of speech and the concomitant affective reaction, or that there was a gross lack of normal emotional involvement in the interview, or that there was inappropriate giggling without warmth of affect. The various degrees of ratings are shown in Appendix A. Clearly certain patients might be rated under this heading who were grossly apathetic or indifferent for other reasons than schizophrenia. The main serious source of error was likely to have been the apathy that is said to accompany "institutionalism". If this can be severe enough to mimic schizophrenic flattening, it would be rated on the present scale. In addition, certain patients who had a moderate degree of flattening due to their illness might have been rated as showing severe flattening because of a similar effect of "institutionalism".

Poverty of Speech

A rating of (5) on this scale was only made when the patient was mute throughout the interview, or spoke only two or three words. The patient whose answers were monosyllabic, often with long pauses or a failure to answer at all, was rated (4). Other patients were rated (4) because, although there was a reasonable amount of speech, the answers were so slow and hesitant, so vague and lacking in content, so repetitious and wandering, that meaningful conversation was almost impossible. A rating of (2) or (3) was more difficult to make. The patient was given the benefit of any doubt, and deficiencies of education and lack of practice in social intercourse were assumed in all cases. That is to say, poverty of speech had to be very marked before a positive rating was made.

Extracts from conversations with a patient rated (4) are given below:

Q. How long have you been here?	A. Six years.
How do you like it?	Quite nice.
Do you want to leave?	(No answer).
How about leaving hospital?	I did go on holiday.
Would you like to leave altogether?	I don't know yet.
Are you content to stay?	Yes.
Have you any relatives?	What's that?
Have you any relatives?	(No answer).

Throughout this interview the patient gazed fixedly out of the window, often failed to answer questions, and when she did answer, gave brief vague replies with very little content. Six months later she was interviewed by another psychiatrist and the interview showed exactly the same pattern. Many questions were unanswered. Replies were brief and off-putting:

Q. How long have you been here?	A. A long time.
How do you like it?	It's quite nice.
Do you want to leave?	Don't know.
Would you be content to stay?	Yes.
For ever?	Don't know.
Have you any relatives?	Which relatives?
Would they welcome you home?	Not now.
Could you support yourself?	Don't know.

These extracts give the flavour of most interviews rated (4) on this scale. A male patient rated (4) because of the vagueness, hesitancy and lack of content of his replies spoke as follows:

| "How do you like it in hospital?" | "Well, er . . . not quite the same as, er . . . don't know quite how to say it. It isn't the same, being in hospital . . . as, er . . . working. Er . . . the job isn't quite the same, er . . . very much the same but, of course, it isn't exactly the same." |

A patient who constantly murmured under his breath (e.g. Leonhard's prosectic catatonia) or who made an occasional random remark, but who made no reply to questions, was rated (5).

Incoherence and Irrelevance of Speech

Incoherence was defined as lack of logical relationship between sentences, or such abnormal construction of sentences that the meaning was unclear. It was rated on the whole interview, including replies to the questions about discharge, etc. (Patients sometimes demonstrated incoherence in answers to questions about delusions but not otherwise.) In practice, there was little difficulty in making this rating. The following is a sample of a conversation with a female patient who was rated (4). She usually began to answer to the point but very rapidly wandered off.

| How do you like it here? | I shouldn't like to stay here too long. I didn't really want to get degraded as mental . . . Of course, my surgeon was Eastern . . . I really |

wanted a doctor to sign me out on the gratifi-
cation list. Of course, there was the ensneering
list of the nation . . . My husband would come
and accuse a woman. At last it was taken up
in our way (etc. etc.).

Six months later, when interviewed by another psychiatrist, she showed the
same tendency.

Q. How do you like it?   A. Well, I'm not as settled. I want to
                                            raise myself.

Q. Do you want to leave?   A. I would like to go to my own home
                                            again.

Q. Would you be content to stay?   A. No, I wouldn't. My job in the village
                                            was to mastertall. I don't want to stay
                                            here. I'm not a name at all, really. Our
                                            belief is in the heart.

Q. What are your chances of   A. I'm a married woman. There's a man
   settling down outside?   here—he's an assistant beast.

Coherently Expressed Delusions

The questions asked routinely have been listed above. A typical patient
rated (4) would give coherent and logical answers to the questions on neutral
topics, usually with a hint somewhere of his delusions, but these would only be
definitely and fully expressed on direct questioning. A sample of conversation
with a patient rated (5) is given below. Her delusions intruded into her replies
to neutral questions, but they were expressed with clarity and coherence.

Q. How do you like it here?   A. It's nice. But I like to go out with my
                                            people. I've got my brothers and my
                                            father and mother. But I don't want to
                                            live with them. The police don't want me
                                            to mix. They want me to be single. I'm
                                            well known at Scotland Yard. Because I
                                            was crowned 23 · years ago—the sea
                                            queen of England. I was a princess. The
                                            police thought I was going to be married
                                            to a common man and they made me
                                            break it off.

Six months later, when interviewed by another psychiatrist, the interview
followed a similar pattern except that the delusions were only elicited by direct
questioning and she was rated (4).

Thus most of these ratings were based on what the patient said during a
clinical interview (they are, therefore, behavioural ratings). If he said nothing,
or denied delusions when they were in fact present, no correction could be
made. Moreover, the ratings represented a cross-section of a process occurring,
and sometimes fluctuating, in time. A complete description would call for
frankness on the part of the patient, a reasonable sample of conversation, and
a longitudinal series of ratings.

PRINCIPLES OF CLASSIFICATION

It was found in preliminary work that severe flatness of affect could co-exist
with any combination of ratings on the other three symptoms. It was not,

therefore, of much help in classifying patients, except in one respect which will be mentioned later. There are two natural methods of dividing the ratings of poverty of speech, incoherence of speech and coherent delusions. One is according to severity of the verbal disorder shown. Patients rated (1) on each of the three scales have no evident disorder during the interview. Those rated (2) show no disorder during the interview but may have symptoms at other times. Those rated (3) or less on all three scales may be said to be only moderately disturbed in speech. Patients with ratings of (4) or (5) can be said to be severely, or very severely, disordered. The other natural method of classification is according to which type of verbal symptom is predominant.

The two methods may conveniently be combined to give five subgroups which are fairly easily recognizable clinically, as follows:

Subgroup 1.   Patient with only moderate disturbance of speech (i.e. those rated (3), (2) or (1) on all three scales).
Subgroup 2.   Patients with coherent delusions as the predominant verbal symptom (i.e. a rating of (4) or (5) on coherent delusions).
Subgroup 3.   Patients with incoherence of speech as the predominant verbal symptom (i.e. a rating of (4) or (5) on incoherence of speech. Such a rating takes precedence if, as rarely occurs, a patient is also rated (4) on coherent delusions or poverty of speech).
Subgroup 4.   Patients with a rating of (4) on poverty of speech.
Subgroup 5.   Patients with a rating of (5) on poverty of speech (i.e. the mute, or almost mute, patients).

This simple classification gives five subgroups which are mutually exclusive and jointly exhaustive (2).

By using the rating of flatness of affect, subgroup 1 may be further divided into three sections:

Subgroup 1 (*a*)   Patients rated (1) or (2) on all four scales, i.e. those who show minimal disorder at interview.
Subgroup 1 (*b*)   Patients rated (3) on any of the four scales, i.e. those who demonstrate at least one of the symptoms in moderate degree.
Subgroup 1 (*c*)   Patients rated (4) on flatness of affect, and (3), (2) or (1) on the other three scales, i.e. a borderline group intermediate between subgroup 1 (*b*) and the more severely handicapped subgroups.

CRITERIA OF DIAGNOSIS OF PATIENTS STUDIED

All the patients studied had been in hospital for at least two years, and were under 60 years of age. Patients from three mental hospitals, in different parts of the country, were interviewed. (These hospitals will be known as hospitals A, B and C.) The case records of all patients described on the front sheet as schizophrenic were examined. Patients who had been assessed as feebleminded during their schooldays, or who had a history of epilepsy or organic cerebral disease before the onset of illness, or in whom there was clear evidence of obsessional phenomena, were excluded. The remaining records were examined for definite evidence of delusions, schizophrenic thought disorder, or catatonic motor disturbances at some time during the history. If no one of these was present, the patient was excluded. At interview, a further check was made on doubtful cases where the symptomatology was not entirely clear from the case-record. Persecutory delusions, in the absence of guilt and depression, were accepted as sufficient evidence for inclusion even when ideas of influence and control were not

present. Predominantly affective disorders were excluded. These criteria, in conjunction with the limitation that all patients had been in hospital for over two years, led to a fairly strict selection of cases for inclusion in the study.

RELIABILITY OF THE CLASSIFICATION

In order to determine the limits within which chronic schizophrenics selected in this way can be reliably classified, two separate estimations were made: one under conditions in which reliability was likely to be relatively low, and one under conditions likely to yield a relatively high reliability. On each occasion, 50 chronic schizophrenic patients who had been in Hospital A for two years or more, and who were under 60 years of age, were interviewed by the investigator and a colleague (Dr. A. Catterson).

In the first instance, the investigator rated 50 female patients in March, 1960, and they were re-rated 6 months later by Dr. Catterson. At that time the second rater had not used the scales before, and he was given no more explanation than is printed in the Appendix. He had been working on the female side of Hospital A for one year and had a much closer knowledge of the patients in the sample than had the investigator. Dr. Catterson received his psychiatric training in Canada. Thus the patients might well have changed in symptomatology during the six months between ratings, and the interpretations of the verbal material recorded at the standard interview, as well as the technique of interviewing, might well have been different. In this way, conditions were created in which agreement on classification was likely to be minimal. The correlation coefficients between the two interviewers' ratings on the four scales were indeed low ($r=0.56, 0.55, 0.71$ and 0.49). The degree of concordance in classification is shown in Table I. The two raters agreed on 72 per cent. of cases. When subgroups 1 and 2, and subgroups 4 and 5, are combined, $\chi^2=67.7$, $p=<.001$. The contingency coefficient is 0.76 (the maximum value of this coefficient for a 3×3 table is 0.82).

TABLE I

Five-part Classification of 50 Chronic Schizophrenic Women Based on Ratings made by Two Psychiatrists, with an Interval of Six Months between Ratings

First Rater's Classification	Second Rater's Classification				
	1	2	3	4	5
1. Moderately ill	16	–	–	–	–
2. Coherent delusions	4	3	–	–	–
3. Incoherence of speech	–	–	9	–	–
4. Poverty of speech	4	2	2	5	–
5. Muteness	–	–	1	1	3

During this exercise, the second interviewer obtained considerable experience in carrying out the standard interview and using the scales. In addition, the protocols of all interviews about which there was disagreement were discussed in detail and a mutually acceptable assessment decided upon. A further series of 50 chronic schizophrenic patients from Hospital A (25 men and 25 women) were then seen by both raters together, each conducting the interview alternately. The danger of contamination through leading questions (suggesting which rating the interviewer was going to make) was recognized. Such questions would in any case be difficult to devise in the context of a standard interview, but a deliberate effort was made to avoid them. The ratings were made immediately at the conclusion of each interview before any verbal exchange was made between raters.

Under these conditions, the reliability coefficients on the four scales were 0·78, 0·86, 0·93 and 0·85. The degree of concordance in classification is shown in Table II. Eighty-four per cent. of the cases were classified in the same way by the two raters.

TABLE II

Five-part Classification of 50 Chronic Schizophrenic Men and Women Based on Ratings made by Two Psychiatrists at the Same Interview

First Rater's Classification	Second Rater's Classification				
	1	2	3	4	5
1. Moderately ill	18	1	–	3	–
2. Coherent delusions	2	6	–	–	–
3. Incoherence of speech	–	–	3	–	–
4. Poverty of speech	2	–	–	10	–
5. Muteness	–	–	–	–	5

VALIDITY OF THE CLASSIFICATION

The validity of the classification can be determined in a number of ways» depending on the use to which it will be put. One important method is to measure independently the ward behaviour of the patients classified, in order to show that the different subgroups behave in significantly different ways. A behaviour rating schedule (form 1) had previously been constructed for the purpose of measuring change in the behaviour of moderately handicapped male chronic schizophrenic patients during courses of rehabilitation. When the statistical relationships between the items were investigated by means of factor analysis, in two separate samples of chronic schizophrenic men, it was clear that two subtotals could be used. One subtotal represented "Social Withdrawal" and the other "Socially Embarrassing Behaviour". Both were consistent and reliable. These scores differentiated significantly between three clinical subgroups of patients (8). For the present study, a simpler 12-item scale (form 2) was constructed which would be suitable for all grades of patient and which could be administered on a large scale. The items are presented in Appendix B. One hundred schizophrenic women, randomly selected from all those in Hospital C who had been resident for more than two years and who were aged 59 or under, were rated on these items by their ward sisters. The matrix of inter-correlations between the ratings on 11 of the items was calculated and a principal components analysis carried out. Item 3 was omitted because of infrequency of rating. Five components were extracted of which the first three are shown in Table III.

TABLE III

Principal Components Analysis of Behaviour Rating Scale

Direction of Scoring	Factor I	Factor II	Factor III
1. Slow	·800	·020	— ·293
2. Underactive	·856	·008	— ·191
3. Overactive*	—	—	—
4. Lack of conversation	·805	— ·207	— ·066
5. Social withdrawal	·740	·095	·020
6. Indifference	·810	— ·107	— ·101
7. Talking to self	·122	·775	·395
8. Mannerisms	·483	·571	— ·435
9. Threats of violence	·387	·687	·226
10. Poor personal hygiene	·778	— ·166	·062
11. Careless of appearance	·782	— ·128	·334
12. Poor mealtime behaviour	·626	— ·395	·452

* Item 3 omitted because of infrequency of rating.

The first factor has high loadings on slowness, underactivity, lack of conversation, social withdrawal, indifference, poor personal hygiene, careless appearance and poor mealtime behaviour. In the analysis of form 1 of the schedule, the first factor extracted had high loadings on almost identical items. This factor was called "Social Withdrawal". It clearly embraces a wider range of behaviour but, for convenience, the letters S.W. will be used to designate this factor.

Factor II has high loadings on talking to self, mannerisms and threats of violence. In the analysis of form 1 of the schedule these items also had high loadings on the second factor, as did overactivity and abnormal speech content. This factor was called "Socially Embarrassing Behaviour" and the letters S.E. will be used to designate it.

The remaining three components which were extracted do not lend themselves to interpretation, and the loadings are mainly negligible. This was the case with factor III in the previous work. The correlation between S.W. and S.E. in the earlier study was 0·29 and 0·19, in two different series of ratings. In the present work, it was 0·31 in a series of 273 chronic schizophrenic women from Hospitals A, B and C.

RELIABILITY OF THE BEHAVIOUR RATING SCALE

A charge nurse on one of the wards in Hospital A was asked to rate 24 severely ill male patients, whom he knew well, every week during a 14-week period. During the first 8 weeks a second charge nurse also completed the schedule, and during the final 5 weeks a third charge nurse completed it. The ratings were made independently and none of the nurses kept a record of his ratings. There was no period of preliminary training. Correlation coefficients were calculated between pairs of nurses' ratings, and between sets of ratings over time. These are set out in Table IV. The S.W. score is reliable between raters and over time, whereas the S.E. score is not always reliable between raters, and is variable over long periods of time. These findings, again, are very similar to those with form 1 of the schedule.

TABLE IV

Reliability of Social Behaviour Scores, between Raters, and Over Time

Charge Nurse(s)	Time Interval					Correlation Coefficient S.W.	Correlation Coefficient S.E.
X and Y	Same week	..	..	..	..	..	·87	·71
X and Y	Same week	..	..	..	..	..	·91	·80
X and Z	Same week	..	..	..	..	..	·77	·36
X and Z	Same week	..	..	..	..	..	·72	·51
Y and Z	3 weeks between ratings		..	..	..	·74	·74
X	1 week between ratings ..		..	..	..	·90	·93
X	14 weeks between ratings		..	..	..	·83	·16
Y	5 weeks between ratings		..	..	..	·61	·83
Z	5 weeks between ratings		..	..	..	·79	·76

RELATIONSHIP BETWEEN MENTAL STATE AND BEHAVIOUR

Data from surveys of the female chronic schizophrenic populations of three mental hospitals were used to demonstrate the relationship between mental state classification, and ward behaviour independently rated by the ward sister. In Hospitals A and B, random samples (stratified by wards), of 100 female

patients who had been in hospital for more than two years and who were aged 59 or less, were interviewed by the investigator. In Hospital C, all the 73 patients satisfying these criteria were interviewed. There was no possibility of contamination between the interviewer's and the ward sisters' ratings. The patients were divided into five clinical subgroups by the method described, and the mean score on each behavioural item was calculated for each subgroup. These results are shown in Table V.

TABLE V

Mean Score on Each Item of the Behaviour Rating Scale for Five Clinical Groups

(273 female chronic schizophrenics from 3 mental hospitals)

Item	Clinical Group				
	1	2	3	4	5
S.W. Scale:					
1. Slow	0·25	0·41	0·57	0·56	1·00
2. Underactive	0·16	0·28	0·55	0·54	1·18
4. Lack of conversation	0·26	0·31	0·55	0·80	1·53
5. Social withdrawal	0·45	0·52	1·02	1·03	1·63
6. Indifference	0·30	0·41	0·91	0·90	1·55
10. Poor personal hygiene	0·07	0·14	0·29	0·46	1·10
11. Careless of appearance	0·16	0·21	0·52	0·70	1·38
12. Poor mealtime behaviour	0·03	0·10	0·12	0·30	0·70
S.E. Scale:					
3. Overactive	0·10	0·31	0·31	0·33	0·23
7. Talking to self	0·29	0·66	1·10	0·73	0·65
8. Mannerisms	0·16	0·35	0·50	0·51	0·70
9. Threats of violence	0·22	0·38	0·43	0·37	0·43

Subgroup 1 was further divided into three sections, and the mean S.W. and S.E. scores for these, and the other four subgroups, are shown in Table VI. The two subgroups of patients who showed severe "florid" symptoms at interview (coherent delusions or incoherence of speech) are shown separately from the rest.

TABLE VI

Mean Behavioural Scores of 273 Patients in Five Clinical Subgroups

Clinical Subgroup		N	%	Mean Score	
				S.W.	S.E.
Exhibiting severe florid symptoms:					
Subgroup 2	Coherent delusions	29	10·6	2·38	1·70
Subgroup 3	Incoherence of speech	42	15·4	4·53	2·34
Without severe florid symptoms:					
Subgroup 1(a)	Minimal symptoms	29	10·6	0·96	0·61
Subgroup 1(b)	Moderate symptoms	48	17·6	1·79	0·75
Subgroup 1(c)	Moderate verbal disorder but severe flatness of affect	15	5·5	3·39	1·20
Subgroup 4	Poverty of speech	70	25·6	5·29	1·94
Subgroup 5	Mute	40	14·7	10·07	2·01
Total		273	100·0	4·27	1·59

Analysis of variance discloses a significant degree of variation between the five subgroups on both the S.W. and the S.E. scores. There is an obvious gradation in both scores, in the patients without severe florid symptoms, from those in subgroup 1(a), who show minimal disorder at interview, to those in subgroup 5, who are quite mute. There is also a significant difference between the two groups showing severe florid symptomatology, on each of the behavioural scores.

The distinctions between subgroups 2 and 3, on the one hand, and subgroups 1, 4 and 5 on the other, cannot be made in terms of these two scores. However, an independent check was made by using two other published ward behaviour scales. Venables (6) has constructed an "activity-withdrawal" scale, and Venables and O'Connor (7) have designed a scale which yields a score representing the patient's position on a "Paranoid-Non-paranoid" continuum. If appropriate cut-off points are chosen (15 and below representing "Withdrawn", 5 and above representing "Paranoid"), four categories are created which can be compared with the subgroups of the present classification (combining subgroups 4 and 5). The scores of all the 57 male schizophrenic patients in Hospital A, who had been in hospital over two years, were aged 59 years or less and were not receiving medication, were made available by Dr. Venables, and an independent classification made by the investigator. The results are shown in Table VII. There is a considerable degree of concordance between the two methods of classification (C=0·74).

TABLE VII

Comparison of Two Systems of Classification

Activity-Withdrawal and Paranoid-Nonparanoid Scales	Present Classification Subgroup			
	1	2	3	4 and 5
Active, nonparanoid	9	–	2	1
Active, paranoid	1	13	2	2
Withdrawn, paranoid	1	–	10	4
Withdrawn, nonparanoid	2	1	1	8

CLINICAL INTERPRETATION OF THE SUBGROUPS

Since ratings of the four symptom scales were reasonably reliable as between two psychiatrists who had had considerable training, the ratings can be used to classify patients in other ways. During the extensive survey of chronic schizophrenic patients in three mental hospitals, which has already been referred to, an attempt was made to make a clinical classification, so that the research categorization could also be studied in descriptive clinical terms. Considerable difficulty was experienced in placing patients into discrete clinical subgroups, even using Leonhard's detailed guide (4). The exercise served to illustrate the complexity of the problems involved, and to emphasize the value of a system of rating which does not assume that symptoms are mutually exclusive.

Subgroup 1a. None of the four symptoms could be elicited at interview with 29 patients out of 273, so that no comparison with other subgroups is available. These patients would all come within Leonhard's non-systematic schizophrenias.

Subgroup 1b. Thirty-nine out of 48 patients in this category showed moderate blunting of affect with or without some poverty of speech. The remaining 9 patients also showed moderate incoherence or fragmentary delusions. Kraepelin's description of "simple weak-mindedness" (3) covers most of the defects seen in this group.

Subgroup 1c. The 15 patients in this subgroup were similar to those in subgroup 1b except that they all showed severe flattening of affect. Six also had moderate florid symptoms (incoherence of speech or coherent delusions). Most were clinically classified as shallow, silly or eccentric hebephrenics.

Subgroup 2. Twenty-two of the 29 patients in this subgroup showed coherent delusions without incoherence of speech. Indeed, their speech was often pedantically correct. They were clinically classified into Leonhard's phonemic, expansive or confabulatory paraphrenic groups. Seven patients also showed moderate incoherence of speech—these were mainly fantastic, hypochondriacal, or phonemic paraphrenics.

Subgroup 3. Twenty-two of the 42 patients in subgroup 3 were also fantastic or hypochondriacal paraphrenics who presented with severe incoherence of speech but who nevertheless showed evidence of persisting delusions. Eleven patients were closer to Leonhard's category of schizophasia. The remaining 9 patients were proskinetic catatonics who muttered on incoherently but audibly after answering a question.

Subgroup 4. There were 21 patients, out of 70 in this subgroup, who showed moderate florid symptoms—most of them proskinetic catatonics. The remaining patients restricted themselves to very brief answers and were placed into Leonhard's categories of speech-poor catatonias, or into autistic hebephrenia.

Subgroup 5. Most patients in this group were members of Leonhard's category of speech-inactive catatonia. A few could be placed into the categories of negativistic catatonia, rigid catatonia, or incoherent paraphrenia.

Thus it is clearly possible to divide subgroups 2, 3 and 4 further, according to whether the predominant symptom is shown in relatively pure form, or combined with another symptom, and new groups could be formed by combination. There is little point in such an exercise unless it can be shown that objective measurements discriminate between such subgroups. However, this rating scheme does provide opportunity for extensive re-classification.

DISCUSSION

The two assessments of the reliability of this simple 5-part classification show that it can be used consistently within a reasonable range of experimental conditions. Even when one interviewer had had no experience of the technique and there was an interval of six months between interviews, only 14 patients out of 50 were placed into different categories. This result gives support to Leonhard's contention that the leading symptom in chronic schizophrenic conditions does not show much change once the patient has been ill for 10 years or more. When both interviewers were practised in the method, and the patients were seen at the same time, the number of disagreements dropped to 8 out of 50. Reliability of this kind could be obtained only by rigorously limiting and standardizing the information obtained.

The classification is suitable for schizophrenic patients, diagnosed according to strict criteria, who have been in hospital for two years and are aged under 60. Whether it would be appropriate for other categories of patient has not been assessed—it is doubtful whether it could be usefully applied to acute schizophrenic psychoses.

The five subgroups can also be distinguished by scores derived from nurses' ratings of patients' behaviour in the ward, if a distinction is made between patients who show severe florid symptoms at interview (coherent delusions and incoherence of speech) and the rest.

None of the subgroups defined in this classification is homogeneous. The moderately ill patients may be passing through a phase of remission and may later relapse: or they may be concealing coherent delusions: or they may always have had a mild form of the illness. Patients with coherent delusions may be subdivided in a number of ways according to content. There may be a number of different forms of incoherence of speech, and patients with this symptom may sometimes speak very little so that they are classified in subgroup 4. Mute patients do not always remain mute, and they may be silent for various reasons. These objections are sufficient to preclude the use of the classification for clinical purposes, unless other information is also taken into account. Moreover, the various categories may not correspond to aetiological entities, and are likely to be supplanted by more fundamental measurements. However, as a method for comparing and describing populations and for the study of psychological and social differences between subgroups, the classification has fewer limitations than presently existing clinical systems, and there is the further advantage that the system of ratings can be classified in other ways if necessary. The utility of the distinction between moderately and severely handicapped patients has already been established in a rehabilitation experiment which showed a markedly different success rate in the two categories (9). Other uses are being determined by current experimentation.

SUMMARY

A simple classification of chronic schizophrenia, based on ratings of mental symptoms made at a standard interview, has been shown to have satisfactory reliability as between raters, and to be relatively stable over time. Scores representing different types of social behaviour provide some validity for the classification.

APPENDIX A

Scales for Rating Four Schizophrenic Symptoms

1. *Flatness and Incongruity of Affect*
    1. No evidence.
    2. Indirect evidence only (e.g. case notes, nurse's report, etc.).
    3. Occasional episode of definite flatness or incongruity, but mainly appropriate affect.
    4. Affect mostly inappropriate or flat, but occasionally appropriate.
    5. Complete flattening. No affect unless incongruous.

2. *Poverty of Speech*
    1. No evidence.
    2. Indirect evidence only (e.g. case notes, nurse's report, etc.).
    3. Definite vagueness, stereotypy, repetitiveness or wandering, but interview relatively intact.
    4. So vague, wandering, repetitive or stereotyped, that interview almost impossible.
    5. Mute or almost mute.

3. *Incoherence of Speech*
    1. No evidence.
    2. Indirect evidence only (e.g. case notes, nurse's report).
    3. Definite incoherence, but rest of interview little affected.
    4. Definite incoherence, interfering markedly with rest of interview.
    5. Practically nothing coherent.

4. *Coherent Delusions*
    1. No pre-occupation evident.
    2. Indirect evidence only (e.g. case notes, nurse's report, marked evasion).
    3. Some evidence of coherently expressed delusions, but these have little force now. Little active pre-occupation.
    4. Evident active pre-occupation, but can give attention to other matters.
    5. Can hardly attend to anything else.

    N.B.—Detailed transcripts of interviews with patients who were characteristic of the various subgroups are available on request.

APPENDIX B

Please consider this patient's behaviour during the past week only, even if it was not typical of his or her usual condition.

There are three items in each section. If one of the items describes behaviour which has occurred in the past week, please place a tick against it in the column on the right. There should be only one tick for each section. Please read all three items before making your choice.

Item 1: Slowness of Movement

(2) Usually extremely slow to move, e.g. took very much longer over a meal, or dressing, or walking across the ward, than other patients   ..   ..   ..   □

(1) Showed periods of extreme slowness of movement as in (2), but at other times was not slow to move   ..   ..   □

(0) Speed of movement normal   ..   ..   □

Item 2: Underactivity

(2) Stood or sat in one place all the time, with little movement. Even with encouragement was very difficult to get moving   ..   ..   □

(1) Showed periods of extreme underactivity as in (2), but at other times was not underactive ..   ..   □

(0) Showed no marked underactivity   ..   ..   □

Item 3: Overactivity

(2) Usually extremely overactive or restless, e.g. paced rapidly up and down, became excited, talked or sang loudly or wildly, etc. ..   ..   □

(1) Showed periods of extreme overactivity as in (2), but at other times was not overactive   ..   ..   □

(0) Showed no marked overactivity ..   ..   □

Item 4: Conversation

(2) Was mute or almost mute   ..   ..   □

(1) Said a few words, e.g. in reply to questions, but was usually silent ..   ..   □

(0) Ordinary conversation   ..   ..   □

Item 5: Social Withdrawal

(2) Never mixed socially with anyone, even when encouraged to do so ..   ..   □

(1) Was socially withdrawn and solitary, but would mix a little with others if encouraged to do so.   ..   ..   □

(0) Normal social mixing   ..   ..   □

Item 6: Leisure Interests

(2) Showed no interest in anything. Did not watch television, read newspapers, play games, etc., even when encouraged to do so   ..   ..   □

(1) Showed very little interest, but could be persuaded to watch television, read papers, join in games, etc., for a while ..   ..   □

(0) Showed normal spontaneous interests ..   ..   □

Item 7: Laughing and Talking to Self

(2) Frequent episodes (once a day or more often) of laughing or talking out loud —not just constant smiling   ..   ..   □

(1) Occasional episodes of laughing or talking out loud, but these did not occur every day   ..   ..   □

(0) No such episodes noted   ..   ..   □

Item 8: Posturing and Mannerisms

(2) Adopted odd or uncomfortable postures, or made bizarre movements, every day   ..   ..   □

(1) Behaved as in (2), but less often than every day   ..   ..   □

(0) No such behaviour seen ..   ..   □

Item 9: Threatening or Violent Behaviour

(2) Struck some person, or destroyed some article (e.g. clothing, window, crockery, etc.), during the week ..   ..   □

(1) Was threatening in manner, or verbally abusive, but did not strike anyone   □

(0) No such behaviour seen ..   ..   □

Item 10: Personal Hygiene

(2) Was incontinent on at least one occasion during the week ..   ..   .. ☐

(1) Needed raising at night, or escorting to lavatory during day, in case of incontinence, but was not actually incontinent when this was done ..   .. ☐

(0) Needed no escorting or raising and was not incontinent   ..   ..   .. ☐

Item 11: Personal Appearance

(2) Needed to be shaved (if male), washed or dressed fully at least once during the week .. .. ☐

(1) Could shave, dress and wash, but needed supervision with tie, buttons, etc., or would be slovenly in appearance   ..   .. ☐

(0) Needed no supervision of this kind. Maintained reasonably neat appearance without prompting ..   .. ☐

Item 12: Behaviour at Meal-Times

(2) Needed spoon-feeding at least once during the week ..   .. ☐

(1) Did not require spoon-feeding, but had to wear bib, or needed supervision because of faulty table manners ..   .. ☐

(0) Normal behaviour at meal-times ..   .. ☐

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