Interaction Measurements in Psychiatric Patients With Early Total Deafness

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EVALUATION of the states of illness and change in patients is a major and continuing problem in psychiatry. Since ambiguities of definition and interpretation arise unavoidably when rating scales are relied upon, a number of investigators have attempted a shift to criteria that are more objective. For an altered focus, emphasizing interview form and process rather than the content of a patient's productions, the interaction chronograph has seemed a promising method. The method purports to predict a number of characterologic qualities by interpreting from a variety of measures, including the length of a subject's replies or silences, the number of times he interrupts the interviewer's questions, etc. Stable over time in both normal persons and in chronic, untreated patients, these measures and their correlates have been found by Chapple and others to vary with changes in clinical state, medication, and number of hours of psychotherapy.¹⁻⁸

Variations of the method have been used to study the patterns of stability and difference between psychiatric interviewers. and to develop standardized interviews that reduce the time necessary to achieve stable measures of a subject's response.9-14

The measurement of process, as reflected in timed intervals of action or pause, would seem particularly applicable to the study of mental patients with early total deafness. With such individuals the interpretation of content is unusually difficult, since relatively few of the deaf develop usable speech and their acquisition of language is always retarded. The large majority of the deaf rely on manual language for communication, a gestural system of loose grammatical construction which lends itself to object-bound. concrete expression. When coupled with late or incomplete development of language, this concrete and fragmented framework of communication may be difficult to distinguish from schizophrenic thought.¹⁵ While major psychoses can be diagnosed with time and patience, the problem of communication usually poses a continuous hazard in evaluation and therapy.¹⁶ An objective measure of clinical change, therefore, would be of particular benefit for psychiatric work with this group. At the same time, such patients are well suited for the testing of such measures, for should the procedures fail to indicate changes before they are grossly discernible by other means, the clinical usefulness of the method may be open to question. This paper reports an attempt to adapt interaction measures for use with the deaf, and to test its usefulness in discriminating clinical change. The effort was tempered by the aim of finding reasonably simple procedures that

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Fig 1.--Responses in well-integrated schizophrenic patient.

could be widely applied without elaborate apparatus.

Method

Formal aspects of interview behavior were recorded for a series of patients in interviews of standard form conducted regularly over a period of several weeks. Each interview consisted of five "initiatives" by the interviewer, and the responses of the patient. Each initiative was a five-second query, framed as an open-ended and innocuous question; usually it merely inverted or extended the patient's last phrase, in a form such as, "Is that so? Tell me more about it." To be sure that each response was completed, the interviewer waited four seconds after the patient stopped his communication before presenting the next initiative; if the patient recommenced his response during this four-second pause, his statements were included as a continuation of the same response.

A response was defined as any verbal, manual, or gestural communication on the part of the patient, and began when the patient gave indications of getting ready to reply. If such indications were given but the patient did not communicate further, a fleeting response was scored nonetheless. If no response was elicited, the interviewer waited 15 seconds and then offered another initiative. Absence of response was counted as a response of "No response, 0 duration."

Length of response, latency (time elapsed between end of initiative and beginning of response), and interruptions were recorded with an instrument consisting of several button-activated styli recording on graph paper inat moves at a constant speed. By pressing the appropriate buttons, the recorder indicated when the patient was talking (signing), when he was latent (waiting to answer), and when the interviewer was speaking or was interrupted. If the interview proceeded for ten minutes it was terminated by the interviewer, even if fewer than five responses had been obtained. The recorder was situated out of sight, behind a two-way mirror. While patients were aware that some observations were being made, they were generrally completely at ease after one or two interviews. Practice interviews, not a part of the experiment, were undertaken by the recorder and the observer as a final part of their training in the technique to be used.

The raw data were scored on daily summary sheets on which the number of interruptions, average length of response, latency, and the range response of duration for each interview were also computed. Pertinent comments by interviewer and recorder were noted immediately after each interview on these same forms. A weekly clinical evaluation of each patient by his psychiatrist was also obtained, and included on impression of the patient's condition, change from the previous week, experiences in the ward which may have affected him, and any changes in medication or other aspects of treatment. The research group and clinical staff had no access to each other's data during the experiment.

Altogether, 11 patients participated in two "runs," or experiments. All patients were deaf, with deafness defined operationally as a stressproducing hearing loss from birth or early childhood rendering a person incapable of effecting meaningful and substantial auditory contact with the environment. There were three men and four women in the first run, and five men and two women in the second. The three men in the first experiment were also included in the second to continue an attempt at systematically varying their medication. The total, then, was five men and six women, with a range in age of 18 to 68. Diagnostically, the patient group was comprised of eight schizophrenics and three immature, impulsive, or passiveaggressive character disorders. In the first run there were six interviews weekly, before and after lunch on three regular days, for a total of 50 interviews in 25 days. In the second run there were two interviews weekly, before lunch on two regular days, for a total of 24 interviews. Patients were interviewed in random order throughout.

The statistical treatment of the data did not follow conventional techniques. It is best described as simply an attempt to dig out what information there was in the results by whatever means possible. A chart with the following data was drawn for each patient showing (a) average length of response for the five responses in each interview (or for four responses when there was no response to one of the questions) day after day, (b) range of responsetime in each interview, at the difference between the lengthiest and the shortest responses, and (c) the average latency or delay in commencement of reply, for each interview (Fig 1). These indices, and various computations based upon them, were examined in relation to diagnosis, change in medication, and the psychiatrist's weekly clinical evaluation. Interruptions were included in these charts in the first experiment, but dropped from the second when it was clear that this measure yielded no additional information.

Results

Circumscribed Schizophrenia.—Figure 1 shows the range of response and average length of response for 50 consecutive interviews of a schizophrenic woman (age 45 years, acute paranoid type). This type of record was typical for the three schizophrenics studied, who were generally well integrated except in the well-defined areas of their complex-charged ideas. All three were paranoid, but not very guarded, and they would answer direct questions about their delusional ideas readily, evincing a voluble excitement. When interviewed with openended questions, however, they usually avoided upsetting feelings-a measure, perhaps, of the intactness of their defenses. As shown in Fig 1, the range of response was narrow, reflecting neither undue excitement nor psychomotor retardation, and the average for the five daily variable responses tended to be relatively stable over time. Although no control group was studied for comparison, the general integration of these patients, their avoidance of distressing thought content, and review of the reports of other investigators suggest that normals would give a similar record. Two of these patients were subsequently discharged. The record of the third was indistinguishable from those of the other two, but she gave clear and recurrent evidence of her inability to adapt to any situation less structured than hospital confinement. Another patient, a chronic simple schizophrenic who was outwardly placid but notably disintegrated, showed a similar record.

Changes With Medication.—The upper part of Fig 2 summarizes responses for interviews of an extremely unstable schizophrenic patient, first after administration of perphenazine (Trilafon) and then after no medication. The lower part of Fig 2 reflects the dramatic changes achieved on a regimen of 2 mg of fluphenazine (Prolixin) four times daily; the wide range and variability of average daily response was modified with medication, and the record changed

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in the direction of the less overtly distrubed, circumscribed group. The lower part of the Figure also shows the return of a less stable pattern when trifluoperazine (Stelazine) hydrochloride was introduced. While still receiving medication this patient was later transferred to an institution providing social assistance and protective rather than psychiatric care, but in no way could he be considered cured or in a firm remission.

Figure 3 depicts the differential effect of medication on another excited, regressed schizophrenic patient. Judged by the records, this catatonic man was similar to the less disturbed patients while receiving 48 mg of perphenazine daily. An experimental change to reserpine (Serpasil) led clinically to a recrudescence of agitated behavior (aftFig 2.—Responses in unstable excited schizophrenic patient. Upper Panel, Results on perphenazine and unmedicated; Lower Panel, changes after fluphenazine and return to previous levels after trifluoperazine.

er the effects of perphenazine had been dissipated), which was also clearly indicated on the records of the interviews. It should be noted that at no time was there any evidence of remission of the underlying disease process in this patient. Clinically only his level of activity had changed, and he remained stereotyped and manneristic throughout, with gross evidence of disordered thinking.

Perhaps more important is the fact that in neither of these cases nor in comparable ones did the interview results foreshadow a clinical change; the altered behavior in the direction of both excitement and tranquility was reported by the clinical staff at precisely the same time as the change noted in Fig 1-7. Indeed, it was the clinical staff, guided by considerations of management, that insisted

upon a return to the original program of medication for the second patient, rather than the research group alerting them to the possibility of such a need on the basis of the interviews.

Impulsive Character Disorders.—Impulsive, often aggressive behavior has been found typical of the presenting pattern of most deaf patients with mental illness regardless of diagnosis; impulsivity may even be characteristic of normal deaf persons.¹⁷⁻²⁰ One might expect that the extent of such impulsive behavior would parallel the degree of personality disorganization. Thus, it was hoped initially that measures of interaction response might be of assistance in problems of differential diagnosis, with the measures indicating or clarifying the extent of

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Fig 3.—Responses in another unstable schizophrenic receiving various medications; m = interview missed.



Fig 4.---Responses in impulsive, emotionally unstable patient not given medication.

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self-control or social awareness. Impulsive character disorders would then be expected to fall somewhere between the disorganized, excited schizophrenic, and the better controlled patients in remission or with circumscribed illness. A comparison of Fig 4, the record of an impulsive and immature patient, with the previous Figures, would suggest that indeed this is the case. However, no arbitrary cutoff point between diagnostic **categories could be determined, and the pres**-'ent experience indicates that the interview records may perhaps confirm but in no way substitute for clinical acumen.

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Nowhere in this study were differences in latency, silences, or number of interruptions found to be of value in enhancing the interpretive usefulness of the raw scores. Comparisons of a variety of algebraic combinations of the data similarly failed to increase the interpretive yield, nor were any particular differences found in values obtained at different times of the day.

Comment and Conclusions

Measures of interaction response in mentally ill patients with early total deafness revealed differentiable patterns between excited, diffusely disorganized schizophrenics and quieter patients whose illness was less pervasive. The results in no way discriminated degree of illness; simple but chronic schizophrenics, or those quieted by medication but with clear signs of decompensation, had records virtually indistinguishable from the more circumscribed group. The measures, therefore, seemed to provide a measure of level of general activity rather than reflect any other aspects of personality.

The fact that the patients studied were affected by early total deafness deserves passing consideration. Mostly unable to speak, oriented towards action rather than contained intrapsychic maneuvers, and relying on gestural communication, these subjects could conceivably be less amenable to measures of interaction-response than the hearing. Perhaps the actional tendency is responsible for the fact that no differences between the sexes emerged from our data, while Wood et al, working with hearing patients, found greater silences and more frequent failures to respond in men.²¹ Clinical experience with both deaf and hearing patients does not suggest that there would be other differences in measured responses. It is also notable as a limitation of the method that the clinical staff discerned and described all changes in behavior as soon as or before the interview measures could confirm them, despite the fact that even with manual





Fig 7.-Reaction of patient in Fig 3 to perphenazine and reserpine.

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skills, the staff did not have the easy access to patient's thought content that is available with hearing cases.

More complicated treatment of the data by means of various algebraic formulas failed to yield any more useful results. It is also doubtful that increasing the number or variety of measures would have been more helpful. In this connection it should be emphasized that the method used was not the full and standardized interview of Chapple and his associates, but a modification of one section of it, after Tuason et al.14 Certain measures of the larger interview, such as tempo, activity, and changes under stress, have therefore not been obtained. It was our belief, however, that an effort to collect and deal with a daily interview with ten or more variables, and under several different interview conditions, would invite a statistical deluge of unmanageable proportions; it may well be this pitfall which has prevented earlier studies from making good their initial promises of developing a means for the evaluation of patient change. In any event, the search for a tool with wide applicability demands that the required expenditures of time and money be kept within reasonable bounds. Otherwise the procedure would be of necessity limited to sophisticated research endeavors with small populations.

One finding that does stand out in the present study is the reflection of differential patient response after receiving various medications, changes which correlated well with clinical evaluations of tranquility or agitation. The results also indicate clearly the lag in time for medication effects to wear off or for a change in drug to take hold. When objective evidence of these changes is important, this type of tool may certainly be considered useful, in all likelihood for both deaf and hearing patients. An additional advantage is that the patient serves as his own control. It should be borne in mind, however, that the changes described are in level of activity rather than in process of disease. Such changes do often bear on ease of management, but can not be considered consistently associated with alterations of underlying integration of personality.

The pattern of Fig 5, produced by a 19year-old man of emotionally unstable personality, shows an interesting contrast with the pattern produced by the well-integrated patient in Fig 1. Figure 6 was produced by a schizophrenic man, age 25. Figure 7 shows what happened when the patient in Fig 3 was given perphenazine, 12 mg three times a day for 12 days, then taken off medication for ten days, and finally given reserpine, 1 mg four times a day.

Summary

This paper reports data obtained on 11 patients in 330 regularly conducted interviews. There were two experiments, each lasting several weeks. The interviews consisted of five open-ended queries of uniform length administered in a standardized procedure. The data obtained included the length of the patients' responses, latency (time between the end of a question and the beginning of a response), and interruptions. All patients were hospitalized in New York state's inpatient service for patients with early total deafness, and included cases of schizophrenia, involutional psychosis, and impulsive unstable personality. Graphs of the data revealed differentiable patterns between excited, diffusely disorganized schizophrenics and quieter patients whose illness was less pervasive. Changes after medication, and the extent to which such changes persist when the schedule of medication is manipulated, were also clearly defined. The changes appeared to relate clinically to level of activity rather than to the quality of underlying pathology, and the records did not discriminate accurately between different diagnostic groups. Problems and limitations of method in the measurement of interactions are noted.

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Jean Badanes conducted all the interviews on the second run and most interviews on the first run. Gloria Czubowicz and Willet Moore contributed to this study as interviewer and recorder, respectively.

Generic and Trade Names of Drugs

Perphenazine—Trilafon. Fluphenazine hydrochloride—Permitil, Prolixin.

Trifluoperazine (hydrochloride) - Stelazine Hy-drochloride.

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