An Objective Study of Communication in Psychiatric Interviews

Joseph Jaffe, M.D.

From the Department of Experimental Psychiatry, Hillside Hospital, Glen Oaks, N.Y.

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The clinical interview is the psychiatrist's primary tool for the diagnosis of psychopathology, the modification of behavior, and the collection of research data. Only in recent years, however, have the actual transactions which comprise the interview been studied objectively.

Investigators of the interview have usually employed systems of content analysis (1), which are based upon various theories of psychodynamics. Currently, there is increasing emphasis upon formal aspects of interaction such as temporal patterns of speech (14) drastic change of subject (3), physiological relationships of the participants (2), grammatical patterns of language (5, 6, 9), and speech disturbances and silences (10). These aspects, in contrast to content categories, are relatively independent of theoretical preconceptions, and are more readily quantified and studied statistically.

In many investigations of these formal variables, however, the patient's communications are abstracted from the total context of the interview. These approaches neglect the fact that the psychiatrist is a participant observer, i.e., a significant variable in the interaction (11). Others have attempted to control this variable by means of structured interviews in which the doctor's contribution is standardized according to a predetermined experimental design (6, 7, 14). These structured situations delete the very quality of living relationship that is the ultimate concern of the psychotherapist (7). We are in need of methods of verbal interaction analysis that neither preclude nor prescribe the doctor's clinical responses.

The purpose of this paper is to present a method of interview analysis which a) is objective and quantitative, b) preserves the

natural patient-therapist relationship, and c) treats the interview as an integrated system of interpersonal communication. This is accomplished by including the doctor's usual clinical behavior in the data to be studied. The raw material is not the patient's speech, but rather the total verbal output of the "two person" or "dyadic" group.

Method:

The tape recorded interview is precisely transcribed, without regard to the speaker of the words. Careful attention is given to subtle repetitions such as "I - I mean," "Well as - as I say," and to interpolated expressions such as "you know," "so to speak," "as I said," etc. These have a tendency not to be heard since they are irrelevant to the content.

The transcript is then arbitrarily divided into consecutive units of 100, 50 or 25 words depending on the discreteness of the phenomena to be investigated. Thus a unit contains contributions of words from either doctor or patient alone, or from both in varying proportions.

The measurement applied to these units of dyadic speech is the type-token-ratio (TTR). This is an index of the balance between repetition and variety of words (12). The TTR is the ratio of the number of different words (types), to the total number of words (tokens), in a sample of language. For example, in a 100 word sample the repetition of the identical word 100 times in succession would produce the lowest possible ratio of .01 (1 type/100 tokens). The highest possible ratio of 1.0 would result if every one of the 100 successive words were different (100 types/100 tokens). These extremes of stereotypy and diversity are rarely encountered, and then only in grossly pathological situations (8).

The "word-type," i.e. the numerator of the TTR, is arbitrarily defined. All words are different which are pronounced or spelled differently. Thus, "give, gives, gave, given and giving" are considered different types, as are "know" and "no." Vocalizations not clearly

identifiable as words are omitted, with the major exception of "mmhmm" which is a frequent utterance of the interviewer in our records. Contractions are retained as single words, but vulgarisms such as "I dunno" are edited to read "I don't know."

The TTR is calculated for each unit and the pattern of consecutive scores is graphically plotted, as illustrated in Figures 1 and 2. For additional precision, the units may be overlapped, e.g. 50 word units may be advanced 25 words at a time, so that each unit is composed of the last half of the preceding and the first half of the subsequent unit. This often smoothes the resultant curve. The overlapping technique is illustrated in Figure 3.

Previous studies of the TTR have dealt with the overall average in a single person's language (12). The present method studies the sequential pattern in dyadic language.

Observations:

In the last eighteen months approximately sixty recorded interviews have been investigated by this method. The material includes forty patients in all diagnostic categories. The dyadic TTR patterns have been found to be sensitive to a variety of clinical phenomena (8). This report illustrates the changes in language interaction occurring during the course of hospitalization and therapy, as well as changes in rapport and defensive operations in individual interviews.

A - Dyadic TTR Pattern in Clinical Change.

Figure 1 shows the pattern of the first 1500 words of three separate interviews during the clinical course of one patient. The doctor is the same in each. This case was selected as an unequivocal example of gross clinical change. In the first interview the patient was agitated and depressed. She refused to be seated and paced about the room, reiterating stereotyped self-recriminations, crying hysterically, with marked pressure of speech. At the time of the second interview, following a course of grand mal electroshock, the clinical picture was grossly altered. She was less agitated and more cooperative, although withdrawn and complaining of a memory deficit. On discharge two months later, she appeared alert, poised, conversational and, at times, surprisingly insightful. She had been rated clinically as "recovered."

The TTR of consecutive 25 word units of interaction, for each of the three periods described, is graphically represented in Fig. 1. Consecutive points are connected by lines so that the fluctuations in the graph reflect the difference between successive scores. The mean TTR for

the complete interview from which these samples were taken is represented by a horizontal line through each graph. The pattern of scores demonstrates a fluctuating equilibrium about the mean.

The interviews of these three successive stages show a sequence of changes. The mean level of the interaction is seen to increase as the clinical status changes from psychosis to "recovery." There is a concomitant restriction in the amplitude of the pattern, i.e. a decrease in variation about the mean.

Comment:

The sequence of change in the TTR pattern parallels the progressive improvement in interpersonal communication that was apparent clinically. This suggests an approach to the quantification of clinical change, defined as an altered pattern of verbal interaction in the interview.

B - Changes in Communication Within the Interview:

Figure 2 is an enlargement of the first of the three interactions shown in Figure 1. Here the sequence of changes within a single interview are examined rather than comparing the patterns of successive interviews. As described before, the patient was speaking continuously in a disorganized affective outburst. The lower line indicates the 25 word units in which the interviewer participated. Following the doctor's introductory remarks, units 3 - 12 represent the patient's uninterrupted speech. Wide oscillations of the pattern are prominent. From samples 13 onwards the doctor made repeated efforts to communicate with the patient. Two independent judges reviewed the transcribed protocol, and both identified three areas in which there seemed to be an understandable, rational

interchange between the participants. These periods are labelled "rapport" in the upper line. During these three periods the oscillations of the pattern are much constricted. Compare other non-rapport periods such as 23-24 and 39-41, in which the doctor's participation amplified the oscillations.

Comment:

This illustrates a method of quantifying interpersonal phenomena, such as the degree of "contact" with a severely disturbed patient. The affective pattern in this patient represents the psychotic integration, and for this reason, the occasional occurrences of conventional, rational conversation are described as periods of "rapport." The restriction in the amplitude which characterizes these periods is similar to the overall pattern at the time of "recovery."

C - Analysis of a Complete Interview.

Figure 3 demonstrates the initial dyadic TTR analysis of a complete interview. This interview is the discharge evaluation of a patient who had been hospitalized following a bizarre suicide attempt. After seven months of hospitalization, she had "improved" clinically. This took the form of a hypomanic mood and a gross denial of her severe emotional conflicts. The interview is scored by the method of successive 50 word units advancing by 25 word steps. The mean TTR for the interview is shown by the horizontal line drawn through the graph. The pattern falls into several natural segments. There are two areas in which ten consecutive points fall below the mean (areas 4 and 7). These are unusual in this interview. There are also areas of gross deviation

from the mean (such as area 2). Thus we allow the objective pattern to determine our criteria for phenomena to be studied. In general, we look for persistent changes in the TTR level, gross trends or sudden shifts.

Several of the deviant areas are described to illustrate the method. The interview begins with a hypomanic monologue in which the patient describes her successful visit home, her euphoric outlook and plans for a rosy future.

Area 2 has been delineated because of gross deviation from the mean. The beginning of this period coincides with a change of topic to her plans for going back to her job two days hence. Her optimism is interrupted by a period of confusion as she tries, with some difficulty, to recall one of the details of the job. The end of the gross fluctuation coincides with the rationalization "I don't think I'll have too much trouble."

Area 4 was delineated as one of the two sections in which 10 consecutive scores fall below the mean. Its beginning coincides with a statement about her depression on admission to the hospital. This area ends with the lowest score of the interview which, precedes by only a few words a spontaneous reference to her suicide attempt. This large deviation at the end of area 4 embodies the main characteristics of the following area.

Area 5 is characterized by large fluctuations above and below the mean. The content of this area is completely on the theme of suicide. She attempts to prove how much she now wants to live. The doctor's queries at the end of the period meet with increasing resistance. In the beginning of the next segment (area 6) she stubbornly refuses to discuss the subject of suicide further, at which point she changes the subject abruptly.

Area 7 was delineated on the basis of two criteria. It begins with a precipitous drop in the TTR, followed by 10 consecutive scores below the mean, and ends with an equally abrupt rise. Its beginning coincides with a change of subject by the doctor in the form of a question about her feelings at that moment in the interview. This content area, i.e. the "you-me" relationship, is pursued at a very repetitive level. The period ends when she abruptly changes the subject.

Area 9 is delineated because of an extremely low score enclosed by two large deviations. It coincides with a brief mention of a meeting with a young man who told her how well she looked. It ends with an embarrassed remark and her statement "I decided to get him off the topic."

These examples illustrate areas of disturbance or disequilibrium in the verbal interaction pattern. In contrast, areas 3, 6, 8 and 10 are areas of relative stability or equilibrium in the record. These stable areas are marked by a different quality of communication. They consist either of a euphoric, hypomanic monologue which avoids all stressful areas, or of evasion of the doctor's probing questions by superficial rationalization and conventional cliches.

Comment:

Recent reports of objective interview studies using other techniques (10), have noted that the interaction goes through a series of definable phases, which may correspond to periods of stressful disorganization and successful defense respectively. The phases demonstrated here, and the events that delineate them, suggest an analogous formulation. The content areas that disturbed the pattern in this final interview

also did so on the initial interview seven months earlier. We anticipate that the discussion of a subject that had resulted in disequilibrium but now no longer does so, may constitute an operational definition of "resolution of an area of conflict."

Discussion and Conclusions:

Diverse and highly personal interpretations of interview data limit the growth of psychiatry as a science. Systematic study of the actual transactions may lead to operational definitions of hitherto subjective phenomena. For example, it is likely that the patterns of verbal diversification presented here constitute part of the subliminal cues to which therapists respond when making clinical judgments of anxiety, affect, etc.

Objective investigations of the interview must encompass the behavior of both participants since the events observed are interpersonal processes. Gill, Newman & Redlich (4) define even the initial interview as "the diagnostic evaluation of an interpersonal relationship." Reusch (13) has recently stated that "observations made in social situations do not have the characteristics of a scientific procedure in which one aspect is studied in detail while all other variables are held constant."

The method presented here is an attempt to convert these concepts into practical research methodology. It permits a quantitative statement of various clinical phenomena occurring either within single interviews or in the course of therapy. Disturbances of verbal interaction are defined operationally in terms of the configuration of the TTR pattern. Applications to the definition of clinical change and transactions within the interview have been presented.

The TTR is only one of many quantifiable aspects of dyadic speech. Pace of interaction, time reference, and relative amounts of participation by doctor and patient may also be measured. Further applications of these techniques are under investigation.

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