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A Study of Nonverbal Behaviors Used by Student Speech Clinicians

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A STUDY OF NONVERBAL BEHAVIORS USED BY STUDENT SPEECH CLINICIANS

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This thesis submitted by Anne L. Mercer in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

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ABSTRACT

The purpose of this study was to investigate the differences between high- and low-rated clinicians in the observed frequency of each of ten selected nonverbal behaviors. Student clinicians, who met certain criteria, were rated independently by two faculty members primarily responsible for supervision of clinicians. Based on these ratings, clinicians were ranked from high to low. The top thirty-three per cent and the lower thirty-three per cent of these clinicians served as the two groups of subjects for this study. The high-rated group was composed of eight clinicians and the low-rated group was composed of six clinicians for a total of fourteen subjects.

Each subject was videotaped for three randomly-selected five-minute segments of the forty-minute therapy session. The experimenter then viewed these five-minute videotapings and counted the occurrence of each of the ten nonverbal behaviors under investigation. These behaviors were: smiles, positive and negative head nods, gestures, self-manipulation, positive and negative touch, posture changes, and forward leans.

Data were analyzed using t-test and multiple correlation procedures. High-rated clinicians used significantly more of the nonverbal behaviors which serve as social reinforcers, and as signals in social interaction than did low-rated clinicians, and low-rated clinicians used more self-manipulation. Also, high correlations were

found between some of the nonverbal behaviors and the criteria used to evaluate clinicians.

CHAPTER I

INTRODUCTION AND REVIEW OF LITERATURE

Introduction

The profession of speech pathology is concerned with human interaction and communication. Clinician-client interactions focus on verbal behavior. Researchers in the field of speech pathology have gathered little data on the nonverbal dimension of the communication process within the therapy setting, leaving to be investigated the extent to which the clinician-client relationship is affected by the nonverbal behaviors of the clinician. This paper investigates some nonverbal behaviors as they relate to the judged clinical skills of student-clinicians.

In the broadest sense communication includes all of the processes by which one individual may affect another. Verbal communication, which is only one aspect of the total process, is a specific form of message transmission which uses word symbols to represent real objects and ideas. The counterpart of verbal communication is nonverbal communication. This mode of sending messages includes all forms of transmission not represented by word symbols.

> Nonverbal communication is important because of the role it plays in the total communication system, the tremendous quantity of informational cues it gives in any particular situation, and because of its use in fundamental areas of our daily life (Knapp, 1972, p. 21).

Egolf and Chester (1973, p. 511) state that "to have social contact without the transmission of nonverbal messages, in fact, is essentially impossible." In speech pathology where emphasis is on effectiveness of communication in the process of changing behavior, it is important that consideration be given to the area of nonverbal communication in the clinical setting.

In a normal conversation, according to Birdwhistell (1970), the verbal components carry less than 35 per cent of the social meaning of the situation, while more than 65 per cent is carried on the nonverbal band. Mehrabian (1970) divides the social interaction into the following percentages: 38 per cent vocal, 55 per cent facial, and only 7 per cent actual verbal communication. This breakdown was further supported by Argyle (1967) who classified the communication process into 1) body contact, 2) physical proximity, 3) gestures, 4) facial expression, 5) eye movement, 6) paralanguage, and 7) speech. Six of the categories are nonverbal behaviors, suggesting that nonverbal behavior plays an important part in the communication process.

The nonverbal process is continuous and often elaborative of verbal interaction by means of repeating, contradicting, substituting, complementing, accenting, and regulating (Argyle, 1967). It is often the nonverbal message rather than the verbal which determines the nature of an interpersonal encounter. Birdwhistell stated (1963) that when the nonverbal and verbal cues of the communicator conflict, the visual cues are attended to rather than the spoken words.

Because of the complexity of communication, it is important for the clinician and supervisor to be aware of the use of the various

forms of nonverbal communication in the therapy session. The importance of nonverbal communication in interaction situations suggests that the nonverbal behavior employed by clinicians may be related to the quality of their overall performance.

Review of the Literature

In the area of nonverbal communication, research is oriented towards both describing and evaluating the nonverbal behaviors. Much of the research cited was completed in the areas of social science. The ten nonverbal behaviors selected for this study were: smiles, positive and negative head nods, gestures, self-manipulations, positive and negative touch, posture changes, and forward leans. These nonverbal behaviors are discussed below.

Smile

A smile was defined by Birdwhistell (1970, p. 33) as "the upward bilateral extension of the lateral aspects of the lip region from a position of rest," with a pleasant connotation. Facial expression, of which smiles are only a minute part, is used in close combination with speech. A speaker accompanies his utterances with appropriate facial expressions which are used to modify or frame what is being said.

Mehrabian and Williams (1969), in a series of studies, explored the nonverbal behaviors either perceived or intended in persuasive communication. They found that rate of smiling reflected liking of the addressee. Higher rates of smiling may also indicate greater efforts of the communicator to relieve tension and discomfort.

Birdwhistell (1970) found that subjects smiled when subjected to a positive environment, but some also smiled in an aversive situation. He concluded that smiles are not always a visible means of determining the underlying physiological state. It is possible for a smile to be reinforcing, a means of expressing approval, or a means of hiding discomfort.

Head Nods

A head nod may be either positive or negative. A positive head nod was defined as a "distinct bidirectional movement of the head on the vertical plane, or a continuous sequence of such movements" (Rosenfeld, 1966, p. 67). A negative head nod was defined as a "distinct bidirectional movement of the head on the horizontal plane or a continuous sequence of such movements" (Rosenfeld, 1966, p. 67). To distinguish a head nod from a shift of attention from stimulus materials to the client, Rosenfeld's definition was augmented in the present study with the additional qualifier, with eye position held constant. Head nods often act as reinforcers, and also play an important part in conversation in that a head nod usually gives the other conversant permission to continue speaking.

Dittman and Llewellyn (1968) investigated the occurrence of head nods in face-to-face conversations. They suggested that head nods, changes in glance, and brief smiles, seem to be important as signals in social interaction. The listener does not disturb the flow of speech by nodding, even though he has signaled his continued attention to the speaker.

Rosenfeld (1966) found that positive head nods were correlated with smiles and were assumed to operate as social reinforcers. Mehrabian and Williams (1969) found that more head nodding was associated with increased persuasiveness of the communicator.

Gesture

A gesture was defined as a movement of the arm, head, and/or finger, not in moving contact with another part of the body. Excluded were arm and hand movements directly related to specific therapy tools. Included were gestures that illustrate, define, command, or emphasize.

Argyle (1967) defined gestures as social techniques intended to communicate definite messages, or as involuntary cues which may or may not be correctly interpreted by others. Gestures may be closely coordinated with speech to supplement the verbal message or they may indicate particular emotional states.

In his study on approval-seeking behavior, Rosenfeld (1966) found gestures to be characteristic of approval-seeking subjects. Mehrabian (1968) stated that greater liking is conveyed by using gestures. For example, gestures during a greeting imply a reaching out toward the other person. Mehrabian and Williams (1969) suggested higher rates of gesturing not only were positively correlated with judged persuasiveness of the communicator but also were positively correlated with relaxation.

Self-Manipulation

Self-manipulation was defined for this study as a response that involved motion of a part of the body in contact with another part, either directly or mediated by an instrument. Self-manipulations were

expected to indicate discomfort and were found to be unrelated to approval-seeking by Rosenfeld (1966). Rate of self-manipulation was negatively correlated with the perceived persuasiveness of a communicator by Mehrabian and Williams. They also found increasing degrees of persuasive effort were judged to be associated with an increased rate of self-manipulation.

Touch

In the present study two categories of body contact were considered. The first was positive touch which was defined as bodily contact between client and clinician other than to restrain or punish. Touching could be reinforcing or instructional. The second category was negative touch which was defined as bodily contact in a manner to restrain or punish physically.

Young children gain knowledge of self and environment through tactile exploration. As the child grows, words begin to replace touching. Frank (1957) hypothesized that symbols without primary tactile validation in childhood may be less effectively established as basic codes of communication later in life. Jourard (1966, p. 229) stated that "body contact has the function of confirming one's bodily being." For children, this is an important developmental consideration.

Mehrabian (1969) studied nonverbal behaviors related to immediacy and found touching to be associated with a more positive attitude. Bardeen (1971) had subjects interact with another person under three conditions: touching only, visual only, and verbal only. The touch encounter was described by the participants as trustful, sensitive, natural, mature, serious and warm.

Knapp (1972) stated that tactile communication is probably the most basic or primitive form of communication. Attitudes toward tactile social contacts are often culturally determined. In spite of cultural differences, however, touch universally serves as a primary means of expression of a wide range of emotions and intentions.

Eye Contact

Eye contact was defined for this study as the clinician looking in the direction of the face of the client, and then away. Eye contact plays an important role in communicating interpersonal attitudes and in establishing relationships. Eye contact is used as a signal in starting encounters, in greetings, as a reinforcer, and to indicate that a point has been understood. A variety of aspects of our social behaviors and interpersonal evaluations depend on how and where we direct our gaze during interactions, and how well we detect this in others.

Exline (1963) showed mutual glances to be more prevalent between women than between men. Exline, Gray, and Schuette (1965) interviewed males and females using both embarrassing and neutral topics. Subjects looked more at the interviewer when listening than while speaking. Females showed greater eye contact with the interviewer than males; however, both looked less at the interviewer when dealing with embarrassing topics.

Mehrabian (1969) found that increasing degrees of immediacy corresponded to greater degrees of eye contact. Mehrabian and Williams (1969) in a series of studies found that increasing degrees of persuasive effort were associated with increases in eye contact with

the addressee. Ellsworth and Ludwig (1972) found that women engage in more eye contact while speaking, listening, and during silences, and depend on more visual feedback than do males.

Vine (1971) studied the reliability of observer's judgement of direction of gaze stating that much of the research on direction of gaze was unreliable. He concluded, however, that "observer judgement can be expected to be fairly adequate in studies where eye gaze versus non-eye gaze is monitored" (p. 330). Vine established inter-observer reliability at 93.8 per cent agreement and intra-observer reliability at 96.2 per cent agreement. He further concluded that his study supported the hypothesis that discrimination between eye gaze and non-eye gaze is more accurate when judging actual interaction than in the more artificial clinical situations. Ellsworth and Ludwig (1972) likewise found that observer judgment can be expected to be reliable.

It is evident from Argyle (1967) that eye contact plays a large part in the communication interaction process. Two conversants will look intermittently at each other for periods of one to ten seconds, for twenty-five to seventy-five per cent of the time. Argyle (1967) also noted that people look approximately twice as much while listening as they do while talking.

In summary, a continued exchange of glances would seem to indicate a willingness or desire to become involved, or to maintain ongoing interaction of the communicants. Avoidance of glances would seem to indicate a lack of interest in initiating a relationship, or an attempt to terminate the interaction.

Posture

In this study, posture was divided into two categories, posture change and forward lean. Posture change was defined as a "gross movement of the body trunk or a shift in the position of the hips" (Rosenfeld, 1966, p. 67). Forward lean was defined as a forward movement of the upper body of the clinician, away from the vertical plane defined by a line from the clinician's hips to the shoulder.

James (1932), using photographs, asked subjects about the attitude being expressed by differing postures. The head and trunk position were found to be the most important indicators. His categories of postures included forward and backward lean, and he found support for the hypothesis that a forward lean communicates a positive attitude, while a backward lean communicates a negative attitude.

Mehrabian (1968) found that distinctive postures were adopted for friendly, hostile, superior, and inferior attitudes, and that these were perceived reliably. Postures vary with emotional states, especially along the dimension of tense versus relaxed (Argyle and Kendon, 1967). Posture change was seen by Rosenfeld (1966) to reveal discomfort.

A series of studies by Mehrabian (1968) explored the relationships of posture and distance between communicator and addressee with attitudinal and status difference between communicators. The findings suggest that a relaxed posture, a forward lean of the trunk toward the addressee, and a smaller distance between communicator indicate a more positive attitude. Finally, relating

nonverbal cues to immediacy, Mehrabian (1969) found a forward lean to be consistently associated with a more positive attitude.

Summary

Some of the nonverbal behaviors which have been discussed as important to the communication process were: smiles, head nods, gestures, touch, eye contact, and posture. Behaviors which express approval or were seen as a means of reinforcing were smiles, head nods, gestures, touch, eye contact and forward lean. Smiles and gestures were seen to reflect approval of the addressee. Smiles, head nods, and eye contact were seen to act as signals in social interaction. Finally, frequent self-manipulation and posture change were seen to reflect discomfort.

Touch was found to be associated with a more positive attitude, and with trust and warmth. "In the clinical setting, a client's touching behaviors and his responses to touch serve as clues to many needs and problems" (Egolf and Chester, 1973, p. 512).

Male-female differences were seen particularly in the amount of eye contact used in conversation. Females were found to engage in more eye contact than males.

The nonverbal rather than the verbal message determines to a large degree the nature of an interpersonal encounter. Still unexplored is the operation of nonverbal behaviors during the unique interpersonal situation, the speech therapy session. Egolf and Chester (1973, p. 511) advocated that nonverbal behavior be viewed with "heightened sensitivity and awareness by all those who are concerned with normal and pathological human interaction and communication."

Mehrabian (1970) suggested that nonverbal behaviors could be applied to the clinical setting particularly when using the principals of instrumental learning to modify behavior. Some of the nonverbal behaviors may serve as social reinforcers, and thus aid in the modification of behavior. The research cited earlier in this study supports the validity of Mehrabian's conclusion.

It is important also to examine nonverbal behavior from the supervision standpoint. Should the area of nonverbal behavior be included in clinical skills training? Specifically, should some nonverbal behaviors be encouraged and some discouraged in the practicum setting? Should specific nonverbal behaviors be included on evaluation forms of clinical competence?

One study which has undertaken the investigation of the role of nonverbal behaviors in the speech pathology clinical setting is that of Irwin and Hall (1972). They obtained highly significant correlations (.91) between clinical competence and use of nonverbal behaviors based on a Clinician Rating Scale. No effort was made, however, to specify the role played by specific types of nonverbal behavior in the therapy session. The present study was undertaken to examine the use of individual nonverbal behaviors by speech clinicians.

Purpose and Question

The purpose of this study was to investigate the frequency and type of nonverbal behaviors which occurs in the speech pathology clinical practicum situation. It was hypothesized that student clinicians ranked highest by clinical supervisors would differ in the

use of nonverbal behaviors during the therapy session from those student clinicians ranked lowest.

The research question to be answered by the study was: is there a significant difference between high- and low-rated clinicians in the observed frequency of each of ten selected nonverbal behaviors?

CHAPTER II

PROCEDURE

Subjects

Graduate and undergraduate student clinicians who served as subjects for this study met the following criteria:

1. Subjects were majoring in Speech Pathology and Audiology at the University of North Dakota.
2. Subjects were those clinicians who were assigned to provide therapy to a client of preschool or school age at the University of North Dakota Speech and Hearing Clinic.

These clinicians were evaluated using the Criteria for Evaluating Clinicians in the Therapy Setting (Appendix A). The criteria is a modified form of the criteria for evaluating clinicians set forth by the American Speech and Hearing Association (Villarreal, 1964). The evaluation was done independently by the two faculty members primarily responsible for clinical supervision in the Clinic. Each student clinician was rated on a scale of one to seven for each of the twelve criteria. The scores on the twelve criteria were then summed to provide one total score for each clinician. Clinicians whose total scores differed by six or more points between supervisors were excluded from the study.

The student-clinicians were ranked according to their total score from high to low. The 33 per cent who ranked highest made up one group to be studied, while the 33 per cent who ranked lowest made up the second group. Each group was composed of eight students. The experimenter was given the names of the students who would serve as subjects for the study, but was not told to which of the two groups each subject belonged. Two subjects from the low-ranked group cancelled out of clinical practicum during the study. Therefore, the total number of subjects was fourteen, eight subjects in the high-rated group and six in the low-rated group.

Apparatus and Environment

The following equipment was used for the collection of data:

1. Ampex camera Model 3074
2. Ampex recorder Model VR5100
3. Shibaden monitor Model VM903
4. One inch Memorex and Scotch videotape

Two rooms were used, a therapy room and an adjacent observation room. The observation room was equipped with a one-way mirror which allowed videotape recording without interruption of the therapy session. The videotape equipment was placed in the observation room. The therapy room was equipped with one table and two chairs. Each therapist was informed that he would be videotaped, but was not given an explanation for the videotaping. Videotaping was done during the regularly scheduled therapy time.

Explanation of System

The following were the ten nonverbal behaviors which were to be counted:

1. Smile - defined as the upward bilateral extension of the lateral aspects of the lip region from a position of rest with a pleasant connotation.
2. Positive head nod - defined as a distinct bidirectional movement of the head on the vertical plane, or a continuous sequence of such movements with eye position held constant.
3. Negative head nod - defined as a distinct bidirectional movement of the head on the horizontal plane or a continuous sequence of such movements with eye position held constant.
4. Gestures - defined as movement of arm, hand, finger, not in moving contact with another part of the body. Excluded were arm and hand movements directly related to therapy tools, such as picking up a picture or handing a client a reinforcement. Included were pointing, clapping, illustrating, defining, or commanding gestures, i.e., "over there," "sit here," "see this."
5. Self-manipulation - defined as a response that involved motion of a part of the body in contact with another part of the body, either directly or mediated by an instrument.
6. Negative touch - defined as bodily contact between clinician and client in a manner to restrain or punish physically.

7. Positive touch - defined as bodily contact between clinician and client other than to restrain or punish.
8. Eye contact - defined as the clinician looking in the direction of the face of the client and then away. The client was not required to establish mutual eye contact with the clinician.
9. Postural change - defined as gross movements of the body trunk or a shift in the position of the hips, except a forward lean.
10. Forward lean - defined as forward movement of the upper body of the clinician away from the vertical plane defined by a line from the clinician's hips to the shoulder.

The ten nonverbal behaviors which were selected for observation met the following criteria:

1. They occurred regularly in pre-experimental observation.
2. They were stated in the literature to be important in the process of communication.

The behaviors were tallied on the basis of frequency, that is, the number of times each behavior occurred within the five minute segment of therapy that was videotaped. Because of the limitations of the videotape equipment, the behaviors observed were those occurring above the table, no foot or leg movements were recorded. Cyclical movements such as a lean forward and then back to the previous position were scored as one behavior. Behaviors which occurred for a continuing

period of time (included eye contact, and positive and negative touch) were recorded again after five seconds as suggested by Mehrabian (1969).

Procedures

Each clinician from the two groups was videotaped for one randomly-selected five-minute segment from each of three forty-minute therapy sessions. Randomization was accomplished by establishing all the possivle five-minute time periods within the forty-minute therapy session. These time periods were written on cards and dropped in a box. Three time periods were selected for each clinician, placing each time period card back in the box before drawing another. Each clinician was then videotaped during the three specified five-minute time periods. Based on the findings of Boone and Prescott (1972), neither of the first five minutes or the last five minutes of a therapy session were taped. They stated that the first five and the last five minutes of a therapy session were not representative of typical therapy.

The experimenter then viewed these five-minute videotapings and counted the occurrence of each of the ten nonverbal behaviors under investigation. The viewing took place in a small, quiet room. Each tape was played through the number of times necessary to count each of the nonverbal behaviors. A tally counter was used so the viewer would not have to look away from the screen while counting behaviors. The videotapings were recorded with voice, but to avoid contamination of nonverbal behaviors by verbal cues, the sound was turned off during viewing.

Reliability

Intra-observer reliability was established by viewing and counting behaviors on the first four sample sessions that were recorded. A period of twenty-four hours was allowed, and then the same segments were counted again. The results from the two observations were compared by use of the Pearson product-moment correlation coefficient and yielded an r of +1.0 for the categories of smile, self-manipulation, negative touch, positive touch, and posture change; .99 for gesture and forward lean; .95 for positive head nod; and .90 for negative head nod and eye contact. In cases where the number of behaviors differed between viewings, that behavior was recounted until agreement was reached and the agreed-upon frequency was used in the main data analysis.

Inter-observer reliability was established by having a trained graduate student tally behaviors from the same tape as the experimenter. Again the number of tallies per behavior were compared by use of the Pearson product-moment correlation coefficient and yielded an r of +1.0 for the categories of smile, negative head nod, self-manipulation, positive touch, negative touch, and forward lean; .99 for positive head nod and gesture; .95 for posture change; and .92 for eye contact. Again, if there were discrepancies between the two tallies, that behavior was recounted by both observers until agreement was reached.

CHAPTER III

RESULTS AND DISCUSSION

The total number of occurrences of each nonverbal behavior was counted for each clinician for the three different five-minute therapy sessions. The mean occurrence of the nonverbal behaviors for each clinician was established. Means were then calculated for each behavior for high- and low-rated groups of clinicians.

The question to be answered by this study was: is there a significant difference between high- and low-rated clinicians in the observed frequency of each of the ten selected nonverbal behaviors? Table 1 shows the group means of each of the nonverbal behaviors. In all behaviors except self-manipulation, the high-rated clinicians demonstrated a greater use of nonverbal behaviors. The mean of the total nonverbal behaviors for the two groups was 98 for the high-rated group and 69 for the low-rated group.

Table 1 also reports the t-test scores. The nonverbal behaviors which showed significant differences between the high- and low-rated groups were: smile and eye contact ($.05 > p > .025$), and positive head nods ($.025 > p > .01$). Total nonverbal behaviors for the two groups also showed a significant difference ($.025 > p > .01$).

Because the behaviors selected for this study are not inclusive of all possible nonverbal behaviors, limited conclusions may be made about the significance of total behaviors. The three behaviors seen as

significant from the t-test analysis are those stated by Dittman and Llewellyn (1968) to act as signals in social interaction. It is evident then, that high-rated clinicians use more of these signals in their communication with a client than do low-rated clinicians.

TABLE 1

MEANS, STANDARD DEVIATIONS, AND t-TEST SCORES OF NONVERBAL BEHAVIORS FOR HIGH- AND LOW-RATED GROUPS

Category	$\bar{X}$-High	$\bar{X}$-Low	sd-High	sd-Low	t
1. Smile	7.461	2.610	4.891	3.089	1.973[a]
2. +Nod	10.584	5.388	4.351	2.752	2.375[b]
3. -Nod	2.750	0.998	2.369	1.121	1.552
4. Gesture	12.000	10.223	7.519	4.004	0.487
5. Self-Man.	3.250	5.500	3.179	6.545	-0.785
6. -Touch	0.959	0.555	1.800	0.737	0.479
7. +Touch	3.749	0.277	6.496	0.486	1.210
8. Eye Cont.	45.001	37.945	4.410	8.456	1.872[a]
9. Post. Ch.	4.042	1.223	3.709	1.214	1.658
10. For. Lean	8.584	4.113	5.164	3.431	1.702
Total	98.380	68.833	19.700	20.421	2.531[b]

[a]Significant at $.05 > p > .025$ (with 13 d.f.)
[b]Significant at $.025 > p > .01$ (with 13 d.f.)

Figure 1 is a graphic representation of the means for each of the ten nonverbal behaviors for each of the two groups. It was noted that the basic pattern of behavior for the two groups was similar; the difference was one of degree. That is, with the exception of self-manipulation, the high-rated group used more of each particular behavior in the clinical therapy setting than the low-rated group.

Nonverbal behaviors which showed a small number of occurrences were: negative head nods (2.75 and 1), and negative touch (1 and .5) for high- and low-rated clinicians respectively, and positive touch

(.27), and posture change (1) for low-rated clinicians. The most frequently occurring behaviors were eye contact (45 and 38), positive head nods (10 and 5), and gestures (12 and 10) for high- and low-rated clinicians respectively.

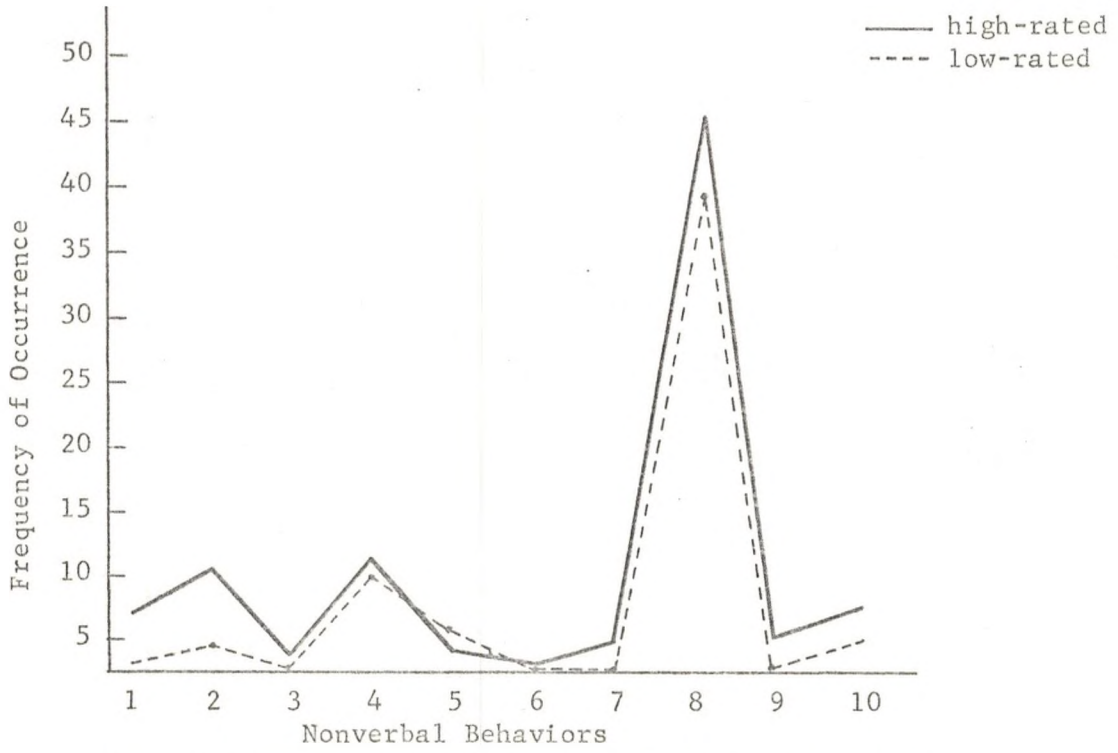

Fig. 1.--Mean number of occurrence of ten nonverbal behaviors for high- and low-rated groups.

A stepwise regression analysis was used to determine whether the deletion of a given independent variable to the regression equation showed significant drop in prediction. The results are shown in Table 2.

According to Table 2, the variables (nonverbal behaviors) which are significant as a group for prediction of group differences include forward lean, negative head nod, gesture, positive touch, positive head nod and smile. This group of six behaviors may be used to predict group

differences. The addition of each behavior in the regression--self-manipulation, eye contact, and posture change--adds a greater degree of predicability to the set of variables. Caution should be used in placing too much emphasis on the order of importance, however, in that only fourteen subjects have been utilized in forming the predictions. More confidence could be placed in a given order with a greatly increased sample size.

TABLE 2

ANALYSIS OF REGRESSION OF THE TEN NONVERBAL BEHAVIORS

Variable	Step	Mult. R.	R^2	F	df
None	1	.97482	.95027	5.73198	10/3
-Touch	2	.97087	.94258	7.29564[a]	9/4
Post. Ch.	3	.96332	.92798	8.05323[a]	8/5
Eye Cont.	4	.94132	.88608	6.66703[a]	7/6
Self-man.	5	.90098	.81177	5.03139[a]	6/7
Smile	6	.83790	.70208	3.77065[a]	5/8
+Nod	7	.72704	.52858	2.52285	4/9
+Touch	8	.66697	.44484	2.67098	3/10
Gesture	9	.61824	.38222	3.40281	2/11
-Nod	10	.44090	.19439	2.89553	1/12
For. Lean	11				

[a]Significant at the .05 level

It was suggested in Chapter 1 that nonverbal behaviors employed by clinicians may be related to the quality of their overall clinical performance. This overall performance was judged according to specific criteria (Appendix A).

A question that was not directly asked by this study but noted to be relevant and available from the statistical analysis was: what is the relationship between each of the ten nonverbal behaviors examined

by this study, and the specific criteria of the evaluation used to establish the high and low groups? The correlation coefficients are shown in Table 3.

The nonverbal behaviors which showed significant correlations to the evaluation criteria were: smile, positive head nod, negative head nod, self-manipulation, positive touch, and eye contact.

Smiles correlated significantly with five of the evaluation criteria: establishes rapport (.49), is confident (.54), uses appropriate communication (.48), is interested and enthusiastic (.53), and establishes appropriate goals (.45). Clinicians who are more confident and enthusiastic may express this in a higher rate of smiling. Rapport is more easily established in an atmosphere of approval and liking reflected by frequent smiles.

Positive head nods correlated significantly with: is confident (.51), controls (.52), is interested and enthusiastic (.49), establishes appropriate goals (.68), chooses appropriate therapy techniques (.45), and effectively motivates client (.48), for a total of six criteria. Again, a clinician who shows more interest and enthusiasm is using more positive head nods, important to social interaction. Serving as a means of social reinforcement positive head nods could be seen to aid in the motivation of the client.

The nonverbal behavior which correlated significantly with the largest total number of evaluating criteria was negative head nods. The eight criteria with which negative head nods correlated were: establishes rapport (.63), is confident (.47), uses appropriate communication (.45), controls (.45), is interested and enthusiastic (.50), effectively motivates (.58), modifies (.53), and evaluates

TABLE 3

CORRELATION COEFFICIENTS OF NONVERBAL BEHAVIORS
WITH CRITERIA OF EVALUATION FORM

Evaluation Criteria	Nonverbal Behaviors										
	1.Smile	2.+Nod	3.-Nod	4.Gest.	5.Self-manipul.	6.-Touch	7.+Touch	8.Eye Contact	9.Post Change	10.For. Lean	11.Total
1. Rapport	.49[a]	.44	.63[c]	.34	-.48[a]	-.02	.38	.57[b]	.24	.27	.56[b]
2. Confidence	.54[b]	.51[a]	.47[a]	.27	-.38	.07	.32	.53[b]	.35	.43	.59[b]
3. Problem	.38	.15	.33	.11	-.61[c]	.16	.18	.48[a]	.30	.11	.29
4. Communication	.48[a]	.38	.45[a]	-.15	-.16	.36	.48[a]	.10	.38	.30	.39
5. Control	.36	.52[a]	.45[a]	.10	-.28	.10	.31	.27	.38	.35	.45[a]
6. Interest	.53[b]	.49[a]	.50[a]	.17	-.35	.14	.36	.47[a]	.28	.35	.54[b]
7. Est. Goals	.45[a]	.68[d]	.32	-.08	-.04	.05	.44	.25	.29	.25	.47[a]
8. Techniques	.29	.45[a]	.13	-.12	-.04	.12	.18	.03	.44	.31	.29
9. Motivates	.29	.48[a]	.58[b]	.13	-.49[a]	-.05	.39	.31	.27	.18	.37
10. Modifies	.27	.37	.53[b]	.05	-.57[b]	-.09	.38	.32	.24	.15	.30
11. Evaluates	.18	.37	.50[a]	-.03	-.64[c]	-.13	.40	.27	.20	.03	.20
12. Ach. Goals	.18	.36	.37	-.02	-.52[a]	-.01	.20	.30	.40	-.05	.19
Total	.43	.49[a]	.52[a]	.10	-.45[a]	.06	.38	.40	.34	.27	.45[a]

[a]Significant at .05 > p > .025
[b]Significant at .025 > p > .01
[c]Significant at .01 > p > .005
[d]Significant at .005 > p > .0005

progress (.50). Because of the number of criteria with which both positive and negative head nods correlate, it is suggested that a clinician either uses both positive and negative head nods frequently, or does not use either.

Self-manipulation, the mean rate of which increased with the low-rated group, was seen to correlate negatively with six of the evaluation criteria. These criteria were: establishes rapport (-.48), recognizes problem (-.61), effectively motivates (-.49), modifies therapy (-.57), evaluates progress (-.64), and accomplishes goals (-.52). Low-rated clinicians were judged to be less confident than high-rated clinicians. It is hypothesized that this lack of confidence is expressed in high rates of self-manipulation in the low-rated clinician.

Positive touch correlated significantly with only one criterion: uses appropriate communication for the age and ability of the child (.48). Touch was found to be associated with a positive attitude. A clinician who does not talk above or below the level of the client is also communicating a more positive attitude.

Eye contact correlated significantly with four of the criteria: establishes rapport (.57), is confident (.53), recognizes problem (.48), and is interested and enthusiastic (.47). Again, the clinician who is rated high on these criteria, by his frequent use of eye contact, may be expressing an interest in the client and his needs. A clinician who is less confident may use less eye contact, expressing his uneasiness.

The nonverbal behaviors which did not correlate significantly with any of the criteria were: gestures, negative touch, posture change, and forward lean. These behaviors then may not be as important to the judged overall performance of a clinician as those that do correlate significantly. There were no criteria which did not correlate significantly with at least one nonverbal behavior.

Finally, correlation coefficients were established between each of the nonverbal behaviors to test the extent to which the frequency of use of the various categories related to each other. The results are presented in Table 4.

The specific nonverbal behaviors which the literature suggests, tend to reflect a liking of the addressee, are employed as a means of expressing approval, and as a means of reinforcement are higher rates of: smile, head nod, gesture, touch, eye contact, and forward lean. One might anticipate a relatively high relationship between these categories of behavior.

Table 4 shows smiles significantly correlated with gestures (.62), eye contact (.46), and forward lean (.58). Positive head nods correlated significantly with negative head nods (.46), positive touch (.48), and eye contact (.49), but correlated negatively with negative touch (-.48). Negative head nods correlated significantly with positive touch (.91). Gestures correlated with eye contact (.62), and forward lean (.61), and eye contact correlated with forward lean (.51). Of the twenty-eight possible inter-correlations of these eight behaviors, twelve were found to be significant.

It was noted that, unlike Rosenfeld's findings (1966), this study did not find a significant correlation between smiles and positive

TABLE 4

CORRELATION COEFFICIENTS FOR NONVERBAL BEHAVIORS

Nonverbal Behaviors	2. +Nod	3. -Nod	4. Gesture	5. Self-manipul.	6. -Touch	7. +Touch	8. Eye Cont.	9. Post. Ch.	10. For. Lean	11. Total
1. Smile	.40	.36	.62[c]	-.14	.19	.30	.46[a]	-.16	.58[b]	.74[d]
2. +Nod		.46[a]	.37	.10	-.48[a]	.48[a]	.49[a]	.22	.35	.73[d]
3. -Nod			.12	-.32	-.20	.91[e]	.18	.02	-.05	.43
4. Gesture				-.12	-.28	-.10	.62[c]	-.07	.61[c]	.69[d]
5. Self-man.					.17	-.20	.01	-.09	.12	.12
6. -Touch						-.15	-.07	.08	.21	-.05
7. +Touch							.05	.04	-.07	.36
8. Eye Cont.								.15	.51[a]	.78[d]
9. Post. Ch.									.29	.22
10. For. Lean										.74[d]

[a]Significant at $.05 > p > .025$
[b]Significant at $.025 > p > .01$
[c]Significant at $.01 > p > .005$
[d]Significant at $.005 > p > .0005$
[e]Significant at $.0005 > p$

head nods. A positive correlation (.40) was found, but it did not meet the criteria for significance at the .05 level of confidence.

Specific nonverbal behaviors which were suggested in the literature to correlate with relaxed posture (Mehrabian and Williams, 1969; and Mehrabian, 1968) were higher rates of gesture and forward lean. These two behaviors were positively correlated (.61). Again, high-rated clinicians use more of these behaviors suggesting them to be more relaxed in the therapy session than those who were low-rated.

Specific nonverbal behaviors which were suggested in the literature to reflect discomfort (Rosenfeld, 1966), were high rates of self-manipulation and postural change. Self-manipulation and posture change did not correlate with any other nonverbal behaviors thus indicating them to be independent behaviors within the limits of this study. Self-manipulation is the only nonverbal behavior which the low-rated group used more than the high-rated group. It is reasonable to assume that if a clinician is doing more self-manipulating he has less time to do the more reinforcing types of nonverbal behaviors.

Posture change was seen to occur more often in the high-rated group. It was noted, however, that posture change for this group of subjects was mainly a change from seated to standing position, or from seated to leaning down to pick up new material. This differs from the turning away or constant change of position indicative of discomfort. The posture changes seen usually initiated a new activity, a stand-up game, or the introduction of new materials. Therefore, posture changes may not be seen as reflecting discomfort.

The nonverbal behaviors which correlated with the total number of nonverbal behaviors were: smile (.74), positive head nod (.73),

gesture (.69), eye contact (.78), and forward lean (.74). All correlations meet the criteria for significant at the .005 level of confidence.

Originally, there was an interest in examining the male-female differences in the number of nonverbal behaviors of the ten selected nonverbal behaviors. In that three males and eleven females made up the total number of subjects for this study, statistical tests on the male-female differences would be inappropriate. All three males fell into the low-rated group, making results highly influenced by the all-female high-rated group. While the fact that all three male subjects in this study were in the low-rated group might be indicative of a real sex difference in judged clinical competence, it might also be the result of sampling error. To test adequately for sex differences, a larger number of male clinicians should be utilized in a sample.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate the differences between high- and low-rated clinicians in the observed frequency of each of ten selected nonverbal behaviors. Student clincians were rated independently by two faculty supervisors. Based on their ratings, clinicians were ranked from high to low. The top thirty-three per cent and the lower thirty-three per cent of the clinicians served as the two groups of subjects for this study.

Clinicians were videotaped during three five-minute samples of their regularly scheduled therapy. These videotapes were then viewed and the ten nonverbal behaviors selected for this study were counted. The mean number of occurrence of each of the ten nonverbal behaviors for each of the two groups of clinicians was calculated.

The following conclusions were drawn from the data:

1. High-rated and low-rated clinicians differ in the number of nonverbal behaviors they use in the clinical therapy setting.
2. High-rated clinicians use significantly more of the nonverbal behaviors which serve as social reinforcers and as signals in social interaction, than do low-rated clinicians. These behaviors are: smiles, positive head nods, and eye contact.

3. Predictions can be made as to whether a clinician is high- or low-rated based on the number of particular nonverbal behaviors he employs. Typically, the higher-rated clinician employs more nonverbal behaviors than the low-rated clinician.
4. The ratings of clinicians by supervisors may be influenced by the clinician's use of or nonuse of nonverbal behaviors. This finding is supported by the correlations between the criteria used for evaluating clinicians and some of the nonverbal behaviors.
5. Particular nonverbal behaviors occur in conjunction with one another. A clinician who uses frequent head nods uses both negative and positive head nods. Other behaviors that occur as a group are gestures, eye contact, forward lean, and smiles.
6. Low-rated clinicians use more distracting self-manipulations during a therapy session than do high-rated clinicians.

Limitations of the Study

Generalizations from this study are limited by the following factors:

1. The complexity of nonverbal communication limits the generalizations of a study which looks at only a part of the total process. The categories chosen here were only a sampling of the total possible nonverbal communication behaviors.

2. This study was limited in the number of subjects. Some trends might have become significant results if the number of subjects had been greater.
3. Because there was not a more equal representation of both males and females in each of the two groups, differences in male-female use of nonverbal behavior was attributable to differences in groups rather than differences between males and females.
4. Inherent limitations are imposed by separating verbal and nonverbal communication since they both are seen as parts of the whole communication process.

Suggestions for Further Research

The results of this study suggest the following as areas of additional investigation:

1. Repeat the study with a larger number of subjects. Behaviors which were not seen as significant in this study may become significant with a larger population.
2. Investigate the nonverbal behaviors of the client as well as the clinician. Perhaps this would indicate any cause-effect relationship that exists.
3. Analyze sequential nonverbal behaviors which may indicate patterns of nonverbal behavior. An investigation of this sort could be done on clinician alone, client alone, or a combination. It may indicate patterns of stimulus-response behaviors on the nonverbal level.

4. Investigate eye contact in terms of time rather than frequency. It was noted in this study that length of time of clinician's eye contact varied from individual to individual.
5. Analyze the nonverbal and verbal behaviors occurring simultaneously. Contradictions in the two behaviors may be seen.
6. Analyze nonverbal behaviors of the supervisor and clinician. Perhaps some supervisors communicate a more or less favorable impression with their supervisee through the use of particular nonverbal behaviors.
7. Investigate male-female differences. Research suggests there is a difference in the use of nonverbal behaviors between males and females.
8. Include leg and foot movement. "Under-the-table" behaviors may be contradictory to what is going on verbally or nonverbally "above the table."

APPENDIX A

CRITERIA FOR EVALUATING CLINICIANS IN THE THERAPY SETTING

CRITERIA FOR EVALUATING CLINICIANS
IN THE THERAPY SETTING

1. The clinician establishes rapport with client.
   1 2 3 4 5 6 7
   with difficulty with ease

2. The clinician is confident and relaxed in his interaction with the client.
   1 2 3 4 5 6 7
   lacks confidence confident

3. The clinician recognizes problems of the individual as a whole and makes appropriate referrals when necessary.
   1 2 3 4 5 6 7
   does not recognize recognizes

4. The clinician uses appropriate communication for the age and ability of the client.
   1 2 3 4 5 6 7
   inappropriate appropriate

5. The clinician controls the session.
   1 2 3 4 5 6 7
   lacks control controls

6. The clinician shows interest and enthusiasm.
   1 2 3 4 5 6 7
   lacks enthusiasm enthusiastic

7. The clinician establishes appropriate goals.
   1 2 3 4 5 6 7
   inappropriate appropriate

8. The clinician chooses appropriate therapeutic techniques and materials.
   1 2 3 4 5 6 7
   inappropriate appropriate

9. The clinician effectively motivates the client to modify his behavior.
   1 2 3 4 5 6 7
   ineffective effective

10. The clinician modifies and adapts therapy procedures in appropriate ways to meet the needs of specific clinical situations.
    1 2 3 4 5 6 7
    does not adapt adapts

11. The clinician effectively evaluates the client's progress.

1	2	3	4	5	6	7
ineffective						effective

12. The clinician accomplishes the goals set forth.

1	2	3	4	5	6	7
does not accomplish						accomplishes

APPENDIX B

RAW DATA COLLECTION SHEET

RAW DATA COLLECTION SHEET

Clinician:
Sex: M F
Clinical Prac. Level: 02 03 04 05
Client age:
Client disorder:
Group: HR LR

Nonverbal Behaviors:	Sessions: 1	2	3
Smile			
Positive head nod			
Negative head nod			
Gesticulation			
Self-Manipulation			
Negative touch			
Positive touch			
Eye contact			
Postural change			
Forward lean			

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