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A Study of Positive and Negative Verbal and Nonverbal Consequences

Nancy Kienzle

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A STUDY OF POSITIVE AND NEGATIVE VERBAL
AND NONVERBAL CONSEQUENCES

by
Nancy Kienzle

Bachelor of Science, University of North Dakota, 1977

A Thesis
Submitted to the Graduate Faculty
of the
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in partial fulfillment of the requirements
for the degree of
Master of Science

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1978

This thesis submitted by Nancy Kienzle in partial fulfillment of the requirements for the Degree of Master of Science 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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Permission

Title A Study of Positive and Negative Verbal and Nonverbal
Consequences

Department Speech Pathology and Audiology

Degree Master of Science

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Date July 24, 1978

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ABSTRACT

The purpose of this study was to investigate the positive and negative verbal and nonverbal consequences to client responses delivered by student clinicians in the practicum situation.

The subjects included thirty-two undergraduate and graduate female student clinicians who had completed not less than ten hours of clinical case contact.

Each student clinician was videotaped for a ten-minute segment of the regularly scheduled therapy session. The videotapes were viewed by the experimenter and the nonverbal and verbal behaviors acting as consequent events were recorded onto cassette tapes. Both the nonverbal and verbal behaviors selected for this study were counted. The verbal behaviors were: absence of a verbal response or a neutral verbal response, positive evaluation of a client response, and negative evaluation of a client response. The nonverbal behaviors included: smile, positive head nod, positive touch, positive gesture, positive brow movement, presentation of a token, frown, negative head nod, negative touch, negative gesture, and removal of a token. The mean number of occurrences for each behavior was calculated. The ratio of nonverbal to verbal consequent events was determined.

A high frequency of agreement was found to exist between the positive verbal and positive nonverbal consequent events. Positive verbal consequent events were used more often than positive nonverbal

consequent events. A high frequency of agreement existed between the negative verbal and negative nonverbal consequent events. Negative verbal consequent events were used more than negative nonverbal consequent events. Student clinicians used nonverbal consequent events in the absence of or with a neutral verbal response. Student clinicians with 120 hours or more of clinical case contact used more nonverbal consequent events than did clinicians with less hours of clinical practicum. Clinicians working with preschool clients used a greater number of positive touch, positive brow movement, presentation of a token and frown than did clinicians working with older clients. Student clinicians working with adult clients used the category absence of or neutral verbal response more than did the other clinicians working with children.

CHAPTER I

INTRODUCTION AND REVIEW OF LITERATURE

Introduction

Human society places great importance upon effective communication. Communication includes the processes by which one individual imparts knowledge and information to another. One aspect of the total communication process, verbal communication, "is a specific form of message transmission which uses word symbols to represent real objects and ideas" (Schubert and Mercer, 1975, p. 42). The counterpart of verbal communication is nonverbal communication. Nonverbal communication, in its broadest sense, is referred to as "all communication except that which is coded in words" (Eisenberg and Smith, 1971, p. 20).

Research completed in the area of nonverbal communication has revealed that nonverbal behaviors are important aspects of interpersonal relationships. Egolf and Chester (1973, p. 511) stated that, "to have social contact without the transmission of nonverbal messages, in fact, is essentially impossible." In the treatment of communication disorders, both the clinician and client transmit and receive nonverbal and verbal messages.

Three related events occur in the clinical setting. The first event, the stimulus or antecedent event, is presented to the client.

The second event is the client's response to the stimulus. The third event is the consequent event, the event that occurs after the client responds. Consequent events which follow the client's response to the stimulus may increase, maintain or decrease behavior. This study investigated nonverbal and verbal behaviors which serve as consequent events, both positive and negative.

Review of Literature

Nonverbal communication is a valuable part of sending and receiving messages in the clinical setting. "Nonverbal behavior should be viewed with heightened sensitivity and awareness by all those who are concerned with normal and pathological human interaction and communication" (Egolf and Chester, 1973, p. 511).

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).

Mehrabian (1970) described the social interaction as being: thirty-eight percent vocal, fifty-five percent facial and only seven percent verbal communication. According to Birdwhistell (1970), in a normal conversation, the verbal components carry less than thirty-five percent of the social meaning of the situation and more than sixty-five percent is carried on the nonverbal band. Nonverbal channels that can communicate information are manner of dress, body odor, physique and/or posture, body tension, facial expressions, and degree of eye contact, hand and body movements, punctuality or lack of it, body position in relation to another person, and the vocal sounds accompanying verbal messages (McCrosky, Larson, and Knapp, 1971).

Repeating, contradicting, substituting, complimenting, accenting, and regulating are means through which the nonverbal process supports the verbal process (Argyle, 1967). Birdwhistell (1963) stated that when the nonverbal and verbal cues of the communicator conflict, the visual cues are attended to rather than the spoken words.

Argyle et al. (1970) suggested that we normally use two channels of communication, verbal and nonverbal, which function simultaneously; conscious attention is focused on the verbal, while the nonverbal channel handles interpersonal matters, including feedback on what is being said.

Galloway (1966) suggested that students rely on nonverbal expressions to validate the fidelity of verbal statements, that they read meanings associated with nonverbal communication to reveal the authenticity, truth, and genuineness of a message communicated by a teacher. Keith, Tornatzky, and Pettigrew (1974) found that teacher interns emitted approving comments four times as often as smiles, yet the nonverbal signs of approval were more closely associated than their verbal counterparts with task-relevant pupil responses. The nonverbal component of communication was found to be more important than the verbal in teaching behaviors. The prevailing belief is that nonverbal channels outweigh verbal channels in determining how messages are interpreted.

Archer and Akert (1977) examined a new technique to study the process of interpretation of the relative contributions of verbal cues and full-channel (verbal-plus-nonverbal) cues. The method, the Social Interpretations Task (SIT) is a videotape consisting of twenty unposed

sequences of spontaneous behavior, which are paired with multiple-choice questions requiring interpretation. Two communication conditions existed, a verbal transcript version containing only a written record of what was actually said in each scene and a full-channel version, containing all the verbal and nonverbal behaviors that occurred in each scene. The results were that subjects in the full-channel communication condition were significantly more accurate than subjects in the verbal transcript communication condition. Subjects taking the verbal transcript version of the SIT had a mean of 5.50 correct interpretations. Subjects shown the full-channel SIT did significantly better with a mean of 8.85 correct answers. The consistency of these results supports the general perspective that in a social setting, verbal and nonverbal cues appear in concert rather than in single-channel isolation. Specific nonverbal cues appear to modify the significance of words and phrases, emphasizing some and minimizing the importance of others. Therefore, verbal cues cannot be interpreted accurately without nonverbal cues.

Within the clinical setting, the clinician uses verbal and nonverbal cues for the purpose of modifying behavior. The goal of speech intervention is to change behavior. The modification of behavior is presented in three steps in the clinical setting. The antecedent event is any event or object that is presented to the client to elicit a response. The next event is the client response, correct or incorrect. The client's response is followed by the consequent event. Consequent events are reinforcers and punishers, and consist of both verbal and nonverbal behavior. The types of consequent

events to be discussed include positive reinforcement, negative reinforcement, and punishment. Brookshire (1967, p. 216-217) defined positive reinforcement as the "presentation of a positive reinforcer contingent upon emission of a specified response, with a resulting increase in the frequency of that response." Negative reinforcement was defined as the "removal of an aversive stimulus contingent upon a response, with a resulting increase in the frequency of that response" (Brookshire, 1967, p. 217). An "aversive stimulus is a stimulus which the organism will terminate, escape or avoid, if given a means of doing so" (Brookshire, 1967, p. 217). Punishment is of two types. Punishment I was defined by Brookshire (1967, p. 217) as the "removal of a positive reinforcer contingent upon a response with a subsequent decrement in the frequency of that response." Punishment II was defined as the "presentation of an aversive stimulus contingent upon a response, with subsequent decrement in the frequency of that response" (Brookshire, 1967, p. 217). Two of these consequences function to reinforce the behavior causing it to be strengthened or maintained. The other consequences function to punish the behavior causing it to be weakened or inhibited.

Verbal behavior is expressed in spoken words. Verbal behavior was defined by Argyle (1969, p. 114) as the "utterance which may consist of a sentence or its equivalent in informal speech." Utterances may be categorized in different ways. Argyle (1969, p. 115) stated that "utterances can be rewarding--when a person agrees, encourages, praises, etc.--or they can be punishing." This is important in the clinical situation since the client will produce either more or less of whatever behavior was reinforced or punished.

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 (or punishers), and thus aid in the modification of behavior. A wide variety of stimuli were found to be effective as secondary reinforcers by Reece and Whitman (1962). They found gesturing, smiling, nodding, and leaning forward to have the same reinforcing properties as verbalization.

Schubert and Mercer (1975) demonstrated that high-rated student clinicians majoring in speech pathology use more nonverbal behavior that is socially reinforcing in the clinical therapy setting than do their low-rated counterparts. These behaviors are: smiles, positive head nods, and eye contact.

Stevens (1976) found that advanced student clinicians used more of the nonverbal behaviors which serve as social reinforcers than did beginning clinicians. The behaviors were: smiles, positive head nods, eye contact, positive touch and forward lean.

Schubert and Gudmundson (1976) found that student clinicians involved in training sessions which utilized videotape playback viewing and instructions to attend to specific behaviors effected change in the observed frequency of the nonverbal behaviors. A significant pretest-posttest increase in the frequency of the observed nonverbal behaviors of eye contact, smile, and negative head nod resulted.

Nonverbal behaviors found to be acting as consequent events in the clinical therapy setting are: smile, frown, positive head nod, negative head nod, positive touch, negative touch, handclapping,

handshaking, shaking finger, raised eyebrows, and token reinforcers. 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." In the study by Schubert and Mercer (1975, p. 44), this definition was expanded to include "with a pleasant connotation." Mehrabian and Williams (1969) found that the rate of smiling reflected liking the addressee. Birdwhistell (1970) found that subjects smiled when subjected to both a positive environment and also to an aversive situation. A smile may be a reinforcer, a means of expressing approval, or a means of hiding discomfort.

Frown

A frown was defined by Stevens (1976, p. 3) as "the distinct drawing together and lowering of both eye brows." Ekman and Friesen (1975, p. 80) found that "impatience and irritation with a listener's failure to follow instructions or otherwise meet expectations" is usually displayed nonverbally as a frown.

Positive Head Nod

A positive head nod was defined by Rosenfeld (1966, p. 67) as "a distinct bidirectional movement of the head on the vertical plane, or a continuous sequence of such movements." Schubert and Mercer (1975) augmented this definition with the requirement of eye position being held constant. Head nods act as reinforcers and as a signal to continue

or discontinue speaking in conversation (Rosenfeld, 1966). Harrison (1974) stated that in our culture the head nod is seen as agreement, support, and affirmation. When one participant nods, the other tends to increase whatever it is he's doing.

Negative Head Nod

A negative head nod was defined by Rosenfeld (1966, p. 67) as "a distinct bidirectional movement of the head on the horizontal plane or a continuous sequence of such movements." As with positive head nod, there was a requirement for constant eye position as reported by Schubert and Mercer (1975). Rosenfeld (1966) stated that negative head nods indicate disapproval, although negative head nods could indicate agreement in some contexts.

Positive Touch

Positive touch was defined by Schubert and Mercer (1975, p. 44) as "bodily contact between clinician and client other than to restrain or punish." Mehrabian (1969) found touching to be associated with a more positive attitude. Tactile communication is the most basic form of communication. Knapp (1972) stated that touch serves as an expression of a wide range of emotions and intentions.

Negative Touch

Negative touch was defined by Schubert and Mercer (1975, p. 44) as "bodily contact between clinician and client in a manner to restrain or punish physically." Knapp (1972) found that a longer time duration existed for a negative touch than for a positive touch in a structured, clinical situation.

Positive Gesture

Positive gesture was defined for this study as movement of the arm, hand, or finger to indicate approval. Included in this study were the following behaviors: the clinician clapping her hands, and a handshake between the clinician and client. Handclapping was used to convey praise. Mehrabian (1971) stated that since a handshake involved contact between two persons, it increases immediacy. Immediacy indicates preference, positive evaluation, and liking.

Negative Gesture

Negative gesture was defined as movement of the arm, hand, or finger to indicate disapproval. Included in this study was the clinician shaking her finger at the client.

Positive Brow Movement

Positive brow movement was defined for this study as the raising of the eye brows upward to indicate approval. In every case that positive brow movement was observed as a consequent event, it indicated to the client a positive nonverbal evaluation.

Token Reinforcers

Token reinforcers were defined by Rettig (1973, p. 15) as "reinforcers such as money, points, stars, or tokens which have value in that they can be traded for a preferred object, activity, or experience." Tokens are presented to the client for performing desired behaviors, or they are taken away from the client for performing undesired behaviors.

Summary

Cited research studies in the area of communication have found that both verbal and nonverbal behaviors are important in interpersonal communication. There is general agreement that verbal expressions cannot be interpreted accurately without nonverbal expressions (Archer and Akert, 1977; Galloway, 1966; and Keith, Tornatzky and Pettigrew, 1974).

In the field of speech pathology, nonverbal communication is important in the clinical situation. Some of the nonverbal behaviors which have been discussed as important consequent events are: smiles, frowns, head nods, gestures, brow movement and tokens. Consequent events, both verbal and nonverbal, are necessary for the modification of behavior. Mowrer (1971, p. 58) stated that, "one of the major reasons why many speech clinicians fail to change speech behaviors effectively may be due to the fact that they give little attention to the systematic management of consequent events during therapy."

Because of the totality of the communication process, and the role of consequent events, it is important that the clinician and supervisor be aware of the use of various positive and negative verbal and nonverbal consequences in the clinical setting.

Purpose

The purpose of this study was to investigate the positive and negative verbal and nonverbal consequences to client responses delivered by student clinicians in the practicum situation.

It was hypothesized that there would be agreement in that both the nonverbal and verbal consequent events would be positive or both

the nonverbal and verbal consequent events would be negative, and that more nonverbal consequent events would be used in proportion to the verbal consequent events.

Research Questions

The research questions to be answered by this study were:

1. What is the frequency of agreement of and the proportion between positive nonverbal and positive verbal consequent events occurring in clinician-client interactions?
2. What is the frequency of agreement of and the proportion between negative nonverbal and negative verbal consequent events occurring in clinician-client interactions?

CHAPTER II

PROCEDURE

Subjects

Student clinicians who served as subjects for this study included thirty-two undergraduate and graduate students majoring in Speech Pathology and Audiology at the University of North Dakota. Only female subjects were used for the study due to the small number of male subjects available. The subjects met the following criteria:

1. Subjects were those clinicians who were assigned to provide treatment to a client at the University of North Dakota Speech and Hearing Clinic.
2. Subjects were enrolled in the clinical practicum as student clinicians and had completed not less than ten hours of clinical case contact.

Apparatus and Environment

The following equipment was used for the collection of data:

1. Panasonic Camera Model WV-361P
2. Panasonic Videotape Recorder Model NV-3020
3. Shibaden Monitor Model VM-903
4. Panasonic Audiotape Cassette Recorder Model RQ-309DS
5. One-half inch Scotch Videotapes
6. Sixty-minute Scotch Dynarange Cassette Tapes

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. A table and two chairs were placed in the therapy room. Each clinician was informed by a written correspondence (Appendix A) that she would not be identified and evaluated, but that she would be videotaped in order that data for a thesis could be collected. Videotaping was done during the regularly scheduled therapy time.

Explanation of System

Verbal and nonverbal behaviors which serve as reinforcers or punishers were selected for this study. Verbal behavior was defined as the utterance which may consist of a sentence or its equivalent in informal speech. Verbal behavior consisted of absence of a verbal response or a neutral verbal response, a positive evaluation, or a negative evaluation after the client response. The verbal behaviors included:

1. Positive Verbal Evaluation - defined for this study as a word or phrase judged by the experimenter to express approval, agreement, or affirmation of the client response.
2. Negative Verbal Evaluation - defined for this study as a word or phrase judged by the experimenter to express disapproval of or disagreement with the client response.
3. Absence or Neutral Verbal Response - defined for this study as the lack of a verbal response or a response that was neither positive nor negative following a client response.

The nonverbal behaviors included:

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. Frown - defined as the distinct drawing together and lowering of both eye brows with an unpleasant connotation.
3. 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.
4. 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.
5. Positive Touch - defined as bodily contact between clinician and client other than to restrain or punish.
6. Negative Touch - defined as bodily contact between clinician and client in a manner to restrain or punish physically.
7. Positive Gesture - defined as movement of arm, hand, or finger to indicate approval. Included were: the clinician clapping her hands and a handshake between the clinician and client.
8. Negative Gesture - defined as movement of arm, hand, or finger to indicate disapproval. Included was the clinician shaking her finger at the client.
9. Positive Brow Movement - defined as the raising of the eye brows upward to indicate approval.

10. Presentation of Token Reinforcers - defined as the presentation of money, points, stars, or tokens which have value in that they can be traded for a preferred object, activity, or experience.
11. Removal of Token Reinforcers - defined as the taking away of money, points, stars, or tokens which the client has in his possession.

The eleven nonverbal behaviors which were selected for observation occurred regularly in pre-experimental observation and were stated in the literature as being important elements in the process of communication.

Both verbal and nonverbal behaviors acting as consequent events after a client response were tallied on the basis of frequency, the number of times each behavior occurred after a client response within the ten-minute segment of therapy that was videotaped. Behaviors which occurred for a continuing period of time, or the behaviors which extended over a period of five seconds, such as positive and negative touch, were recorded as a second behavior after five seconds, as suggested by Mehrabian (1969).

Procedures

Each clinician was videotaped for one ten-minute segment during a forty-five minute therapy session. Neither the first five minutes nor the last five minutes of a therapy session were included in the ten-minute segment of taping, based on the findings of Boone and Prescott (1972). They stated that the first five and the last five minutes of a therapy session were not representative of a typical therapy session.

While the videotape recordings were being played back, an audiotape cassette recorder was utilized by the experimenter to extract data. The audiotape cassette recorder recorded the verbal behaviors from the soundtrack of the videotape and the experimenter spoke over the soundtrack to note the verbal behaviors. The audiotape cassette recorder enabled the experimenter to concentrate on the nonverbal behaviors so the nonverbal behaviors were not missed. Each cassette tape was played through the number of times necessary to count each of the verbal and nonverbal behaviors. The verbal and nonverbal behaviors that occurred after a client response were counted. The verbal and nonverbal behaviors were observed in terms of their agreement or disagreement to each other. Each behavior was counted and recorded in order that a ratio of nonverbal behaviors to verbal behaviors could be determined.

Reliability

Intra-observer reliability was established by viewing and counting behaviors on the first three sample sessions that were recorded. The same segments were viewed and counted again after a period of one week delay. The results from the two observations were compared and the percentage of agreement was calculated. Ninety-six percent agreement was found for intra-observer reliability.

Inter-observer reliability was determined by having a certified speech pathologist, who was familiar with the procedures, tally behaviors from the same three tapes as the experimenter. The number of behaviors counted were compared and the percentage of agreement was

calculated. The inter-observer reliability was determined to be ninety-four percent.

CHAPTER III

RESULTS AND DISCUSSION

The total number of occurrences of each verbal behavior following a client response was counted for each clinician's ten-minute segment of the therapy session. The same procedure was employed to determine the number of occurrences of each nonverbal behavior used by each clinician following a client response during the ten-minute segment of the therapy session. The mean number of occurrences for each behavior was then calculated. The ratio of nonverbal to verbal consequent events was determined.

The questions to be answered by this study were:

1. What is the frequency of agreement of and the proportion between positive nonverbal to positive verbal consequent events occurring in clinician-client interactions?
2. What is the frequency of agreement of and the proportion between negative nonverbal to negative verbal consequent events occurring in clinician-client interactions?

Table 1 shows the number of times verbal consequent events occurred for all subjects. Verbal consequent events were divided into three categories: the absence of a verbal response or a neutral verbal response following a client response; positive verbal evaluation following a client response; and negative verbal evaluation following a

client response. The number of occurrences for absence or neutral verbal response was 990 and the mean number of occurrences for each subject was 30.94. The range for the category absence or neutral verbal response was from 147 to 4. Three subjects used this category over 100 times, four subjects used this category over 50 times, six subjects used this category over 20 times and the remaining nineteen subjects used this category under 20 times. For positive verbal evaluation, the number of occurrences was 670 and the mean number of occurrences for each subject was 20.94. For this category, the range was from 50 to 3. Sixteen subjects used positive evaluation over 20 times and sixteen subjects used this category under 20 times. For negative verbal evaluation, the number of occurrences was 73 and the mean number of occurrences for each subject was 2.28. The number of occurrences for negative verbal evaluation ranged from 11 to 0.

TABLE 1
OCCURRENCE OF VERBAL CONSEQUENT EVENTS
FOR ALL SUBJECTS (N=32)

Category	Total Number of Occurrences	Mean Number of Occurrences for Each Subject
1. Absence/Neutral	990	30.94
2. Positive Evaluation	670	20.94
3. Negative Evaluation	73	2.28

Two subjects used this category over 10 times, twenty-one subjects used this category from one to five times and the remaining nine

subjects did not use negative verbal evaluation. A total of 1,733 verbal behaviors were counted.

Table 2 reports the number of occurrences and the mean number of occurrences for each subject for the positive nonverbal behaviors. Smile, positive head nod, positive touch, positive gesture, positive brow movement and the presentation of a token were the positive nonverbal categories. Smile occurred 116 times and the mean number of occurrences for each subject was 3.63. The range of scores for the number of times smile occurred was from 12 to 0. Four subjects used the category smile over ten times, seventeen subjects used this category under ten times and the remaining eleven subjects did not use the category smile. For positive head nod, the number of occurrences was 116 and the mean number of occurrences for each subject was 3.63. The range of occurrences for positive head nod was from 38 to 0. Two subjects used this category over 15 times, eighteen subjects used positive head nod between one and eight times and the remaining twelve subjects did not use positive head nod. Positive touch occurred 10 times and the mean number of occurrences for each subject was .31. The number of occurrences for the category positive touch ranged from 3 to 0. Five subjects used positive touch between one and three times and twenty-seven subjects did not use this category. For positive gesture, the number of occurrences was 13 and the mean number of occurrences for each subject was .41. The range of occurrences for positive gesture was from 4 to 0. Two subjects used positive gesture four times, five subjects used positive gesture one time, and the remainder of twenty-five subjects did not use this category. In the category, positive

brow movement, the number of occurrences was 8 and the mean number of occurrences for each subject was .25. For positive brow movement, the range was from 2 to 0. Four subjects used positive brow movement two times and twenty-eight subjects did not use this category. The presentation of a token occurred 224 times and the mean number of occurrences for each subject was 7.0. The number of occurrences for presentation of a token ranged from 58 to 0. One subject used this category 58 times, three subjects used presentation of a token between twenty and fifty times, four subjects used this category between ten and twenty times, three subjects used presentation of a token between one and ten times and the remaining twenty-one subjects did not use this category. A total of 487 positive nonverbal behaviors were revealed.

TABLE 2
OCCURRENCE OF POSITIVE NONVERBAL CONSEQUENT
EVENTS FOR ALL SUBJECTS

Category	Total Number of Occurrences	Mean Number of Occurrences for Each Subject
1. Smile	116	3.63
2. Positive Head Nod	116	3.63
3. Positive Touch	10	.31
4. Positive Gesture	13	.41
5. Positive Brow Movement	8	.25
6. Presentation of Token	224	7.00

In reference to question one, Table 1 shows the occurrence of a positive verbal evaluation. The total number of times a positive verbal evaluation followed a client response was 670. Table 2 shows the occurrence of positive nonverbal consequent events. The total number of times a positive nonverbal consequent event occurred was 487.

Table 3 shows the frequency of agreement and disagreement of positive nonverbal consequent events to positive verbal consequent events for each subject. The number of times there was agreement and disagreement between the positive nonverbal consequent event and the positive verbal consequent events was calculated for each subject. The total number of times that both a positive nonverbal consequent event and a positive verbal consequent event occurred and were in agreement was 316. Six disagreements were noted. These disagreements consisted of a smile (positive nonverbal consequent event) with a negative verbal evaluation following a client response. The disagreements occurred in only two subjects, subject 29 and subject 31.

In addition to the frequency of agreement or disagreement of positive nonverbal consequent events to positive verbal consequent events, the ratio of positive nonverbal to positive verbal consequent events was calculated. Table 4 depicts the ratios, the total number of times each ratio occurred for all subjects and the mean number of occurrences for each subject. For the ratio 1:1, one positive nonverbal to one positive verbal consequent event, the total number of occurrences was 269 and the mean number of occurrences for each subject was 8.41. The number of occurrences for the ratio 1:1 ranged from 45 to 0. Four subjects used the ratio 1:1 over twenty times, five

TABLE 3

FREQUENCY OF AGREEMENT OR DISAGREEMENT OF POSITIVE NONVERBAL
CONSEQUENT EVENTS TO POSITIVE VERBAL CONSEQUENT EVENTS

Subject	Number of Opportunities for Agreement to Occur	Number of Times Agreement Occurred	Percent of Agreement
1	26	26	100
2	45	45	100
3	7	7	100
4	5	5	100
5	27	27	100
6	13	13	100
7	23	23	100
8	16	16	100
9	5	5	100
10	1	1	100
11	10	10	100
12	1	1	100
13	0	0	---
14	9	9	100
15	17	17	100
16	5	5	100
17	1	1	100
18	4	4	100
19	3	3	100
20	12	12	100
21	25	25	100
22	0	0	---
23	7	7	100
24	5	5	100
25	15	15	100
26	0	0	---
27	5	5	100
28	6	6	100
29	14	11	79
30	5	5	100
31	3	0	0
32	7	7	100

subjects used this ratio between ten and twenty times, nineteen subjects used the ratio 1:1 between one and ten times and the remaining four subjects did not use the ratio 1:1. For the ratio 2:1, two positive nonverbal to one positive verbal consequent event, the number of occurrences was 43 and the mean number of occurrences for each subject was 1.34. For the ratio 2:1, the number of occurrences ranged from 8 to 0. One subject used this ratio eight times, sixteen subjects used the ratio 2:1 between one and five times and the other fifteen subjects did not use this ratio. The number of occurrences for the ratio 3:1, three positive nonverbal to one positive verbal consequent event, was 3 and the mean number of occurrences for each subject was .09. The range for the ratio 3:1 was 2 to 0. One subject used the ratio 3:1 twice, one subject used this ratio once and thirty subjects did not use the ratio 3:1. The number of occurrences for the ratio 4:1, four positive nonverbal to one positive verbal consequent event, was 1, with one subject using this ratio once and the other thirty-one subjects did not use this ratio.

TABLE 4

RATIO OF POSITIVE NONVERBAL TO POSITIVE
VERBAL CONSEQUENT EVENTS

Ratio	Total Number of Occurrences	Mean Number of Occurrences for Each Subject
1:1	269	8.41
2:1	43	1.34
3:1	3	.09
4:1	1	.03

The total number of positive verbal consequent events was 670 (Table 1) and the total number of positive nonverbal behaviors was 487 (Table 2). The total ratio of positive nonverbal to positive verbal consequent events was calculated as .73. These results were unexpected since it was hypothesized that more nonverbal consequent events would be used in proportion to verbal consequent events.

The second research question to be answered by this study was: what is the frequency of agreement of negative nonverbal to negative verbal consequent events occurring in clinician-client interactions?

Table 5 shows the total number of occurrences and the mean number of occurrences for each subject for the negative nonverbal behaviors. Frown, negative head nod, negative touch, negative gesture, and removal of a token were the negative nonverbal categories. Frown occurred 3 times and the mean number of occurrences for each subject was .09. For this category, the number of occurrences ranged from 1 to 0. Three subjects used frown once and twenty-nine subjects did not use this category. For negative head nod, the number of times it occurred was 18 and the mean number of occurrences for each subject was .56. The range for negative head nod was from 5 to 0. One subject used negative head nod five times, one subject used this category two times, eleven subjects used negative head nod once and the remaining nineteen subjects did not use negative head nod. Negative touch occurred 1 time and the mean number of occurrences for each subject was .03. Negative gesture occurred 7 times and the mean number of occurrences for each subject was .22. The number of occurrences for negative gesture ranged from 4 to 0. One subject used this category four times, one

subject used this category two times, one subject used negative gesture once and the remaining twenty-nine subjects did not use negative gesture. Removal of a token did not occur. A total of 29 negative nonverbal behaviors were counted.

TABLE 5
OCCURRENCE OF NEGATIVE NONVERBAL CONSEQUENT
EVENTS FOR ALL SUBJECTS (N=32)

	Total Number of Occurrences	Mean Number of Occurrences for Each Subject
1. Frown	3	.09
2. Negative Head Nod	18	.56
3. Negative Touch	1	.03
4. Negative Gesture	7	.22
5. Removal of Token	0	0

Table 6 shows the frequency of agreement of negative nonverbal consequent events to negative verbal consequent events for each subject. The number of times there was agreement between the negative nonverbal and negative verbal consequent event was determined for each subject. The total number of times that both a negative nonverbal consequent event and a negative verbal consequent event occurred and were in agreement was 7. No disagreements were noted.

It should be noted that zero agreement indicates that both a nonverbal and verbal behavior did not occur following a client response, not that the nonverbal and verbal were in disagreement.

TABLE 6

FREQUENCY OF AGREEMENT OF NEGATIVE NONVERBAL
TO NEGATIVE VERBAL CONSEQUENT EVENTS

Subject	Number of Opportunities for Agreement to Occur	Number of Times Agreement Occurred
1	0	0
2	1	1
3	1	1
4	0	0
5	1	1
6	0	0
7	1	1
8	0	0
9	0	0
10	0	0
11	1	1
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	1	1
22	1	1
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0

The ratio of negative nonverbal to negative verbal consequent events was calculated. Table 7 shows the ratios, the total number of times each ratio occurred for all subjects and the mean number of occurrences for each subject.

TABLE 7
RATIO OF NEGATIVE NONVERBAL TO NEGATIVE
VERBAL CONSEQUENT EVENTS (N=32)

Ratio	Total Number of Occurrences	Mean Number of Occurrences for Each Subject
1:1	7	.22
2:1	0	0
3:1	0	0
4:1	0	0

For the ratio 1:1, one negative nonverbal consequent event to one negative verbal consequent event, the total number of occurrences was 7 and the mean number of occurrences for each subject was .22. The ratios 2:1, 3:1, and 4:1 had zero occurrences.

The total number of negative verbal consequent events was 73, as shown in Table 1, and the total number of negative nonverbal consequent events was 29, as shown in Table 2. The ratio of negative nonverbal to negative verbal consequent events was calculated at .4. These results were surprising since the experimenter hypothesized that more nonverbal consequent events would be used in proportion to verbal consequent events.

Questions that were not directly asked by this study but noted to be relevant and available from the information collected were:

- 1a. What is the number of occurrences of nonverbal consequent events occurring in the absence of or with a neutral verbal response?
- 2a. What is the mean occurrence of the verbal and nonverbal consequent events in subjects grouped according to the number of clinical hours completed in clinical practicum?
- 3a. What is the mean occurrence of the verbal and nonverbal consequent events in subjects grouped according to the age of the client?

In reference to question 1a, Table 8 reports the number of times nonverbal consequent events occurred in the absence of or with a neutral verbal response. The number of times one nonverbal consequent event occurred to the absence of or a neutral verbal response was 116. The number of times two nonverbal consequent events occurred to the absence of or a neutral verbal response was 9. Nonverbal consequent events occurred in the absence of or with a neutral verbal response for a total of 125 times.

In reference to question 2a, the thirty-two subjects were placed in four groups according to the number of clinical hours that were completed at the time of the videotaping. Group I included fourteen clinicians who had completed 10-30 hours, Group II included six clinicians who had completed 30-90 hours, Group III included seven clinicians who had completed 90-120 hours, and Group IV included five clinicians who had completed 120 hours or more.

TABLE 8

OCCURRENCE OF NONVERBAL CONSEQUENT EVENTS TO
ABSENCE OF OR NEUTRAL VERBAL RESPONSE

Subject	Number of Times One Nonverbal Behavior Occurred Without a Verbal Response	Number of Times Two Nonverbal Behaviors Occurred Without a Verbal Response
1	29	5
2	4	0
3	0	0
4	3	0
5	22	1
6	3	1
7	0	0
8	3	0
9	1	0
10	0	0
11	5	0
12	0	0
13	0	0
14	1	0
15	1	0
16	2	0
17	0	0
18	1	0
19	1	0
20	20	0
21	0	0
22	0	0
23	1	0
24	0	0
25	4	0
26	0	0
27	7	1
28	2	0
29	1	1
30	3	0
31	1	0
32	1	0

Table 9 shows the mean scores for verbal consequent events according to the subject groups. Group IV had the highest mean score for the category absence of a verbal response or a neutral verbal response (38.2) and for the category positive verbal evaluation (26.0). Group II had the highest mean score for the category negative evaluation (4.17).

TABLE 9
MEAN SCORES FOR VERBAL CONSEQUENT EVENTS
ACCORDING TO SUBJECT GROUPS

Behavior	Group I (N=14)	Group II (N=6)	Group III (N=7)	Group IV (N=5)
Absence/Neutral	29.36	27.83	31.57	38.20
Pos. Evaluation	19.14	22.33	19.71	26.00
Neg. Evaluation	1.57	4.17	2.42	1.80

Table 10 reports the mean scores for nonverbal consequent events according to subject groups. Group IV had the highest mean scores for six out of the eleven nonverbal categories. These results indicated that Group IV used the most nonverbal consequent events. The results were expected since Group IV included clinicians who had completed 120 or more clinical hours and have had more clinical experience than the other three groups. It is necessary that individual subjects be viewed as to the occurrence of the verbal and nonverbal consequent events. Appendix C shows the individual subject's occurrence of the verbal and nonverbal consequent events.

TABLE 10

MEAN SCORES FOR NONVERBAL CONSEQUENT EVENTS
ACCORDING TO SUBJECT GROUPS

Behavior	Group I (N=14)	Group II (N=6)	Group III (N=7)	Group IV (N=5)
Smile	3.21	5.00	4.29	2.20
Pos. Head Nod	2.86	1.17	2.86	9.80
Pos. Touch	.29	.50	.29	.20
Pos. Gesture	.14	0	.71	1.20
Pos. Brow Movement	.14	.33	.29	.40
Pres. of Token	5.36	4.83	9.86	10.20
Frown	.14	0	.14	0
Neg. Head Nod	.36	.83	0	1.60
Neg. Touch	0	.17	0	0
Neg. Gesture	.36	0	0	.40
Rem. of Token	0	0	0	0

In reference to question 3a, clinicians were grouped according to the age of the client. Three groups were created: preschool (0-5 years), school age (6-18 years), and adults (18 years or more). Table 11 shows the mean scores for the occurrence of verbal consequent events according to client age. In the category, absence or neutral verbal response, the adult group had the highest mean score (67.71). The adult group also had the highest mean score (22.71) for positive verbal evaluation. The preschool group had the highest mean score (3.46) for negative verbal evaluation.

TABLE 11

MEAN SCORES FOR VERBAL CONSEQUENT EVENTS
ACCORDING TO CLIENT AGE

Behavior	Preschool (N=13)	School (N=12)	Adult (N=7)
Absence/Neutral	21.92	19.25	67.71
Pos. Evaluation	19.54	21.42	22.71
Neg. Evaluation	3.46	1.83	.86

Table 12 reports the mean scores for nonverbal consequent events according to the age of the client. The preschool group had the highest mean scores for positive touch (.46), for positive brow movement (.46), for presentation of token (12.92), and for frown (.15). In the school age group, the highest mean scores were found for smile (4.58), for positive gesture (.67), and for negative touch (.08). The adult group showed the highest mean scores for positive head nod (8.29), for negative head nod (.86), and for negative gesture (.43).

Discussion

It was found that when both a positive verbal and positive nonverbal consequent event occurred following a client response, there was a high frequency of agreement between the two behaviors, ninety-eight percent. Only six disagreements of 322 opportunities were noted. The disagreements consisted of a smile (positive nonverbal consequent event) with a negative verbal evaluation. Birdwhistell (1963) stated

that when the nonverbal and verbal cues of the communicator conflict, the visual cues are attended to rather than the spoken words. The present research indicated a high frequency of agreement, ninety-eight percent, between the positive verbal and positive nonverbal consequent events.

TABLE 12
MEAN SCORES FOR NONVERBAL CONSEQUENT EVENTS
ACCORDING TO CLIENT AGE

Behavior	Preschool (N=13)	School (N=12)	Adult (N=7)
Smile	2.69	4.58	3.71
Pos. Head Nod	1.54	3.17	8.29
Pos. Touch	.46	.25	.14
Pos. Gesture	.08	.67	.57
Pos. Brow Movement	.46	.17	0
Pres. of Token	12.92	3.17	2.57
Frown	.15	.08	0
Neg. Head Nod	.62	.33	.86
Neg. Touch	0	.08	0
Neg. Gesture	.31	0	.43
Rem. of Token	0	0	0

Positive verbal consequent events were used more often than positive nonverbal consequent events. The ratio of positive nonverbal consequent events to positive verbal consequent events (.73) was

unexpected. It was hypothesized that a greater number of nonverbal consequent events would be used in proportion to verbal consequent events. According to Birdwhistell (1970), the verbal components carry less than thirty-five percent of the social meaning of the situation and more than sixty-five percent is carried on the nonverbal band. The results demonstrated that student clinicians used a limited amount of nonverbal consequent events.

It was found that when both a negative verbal and negative nonverbal consequent event occurred following a cline response, 100 percent agreement between the two behaviors existed.

Negative verbal consequent events were used more often than negative nonverbal consequent events. The ratio of negative nonverbal consequent events to negative verbal consequent events (.4) was unexpected. A possible explanation would be that student clinicians do not feel comfortable to relate information to the client regarding undesirable behaviors.

It was found that nonverbal consequent events occurred 125 times in the absence of a verbal response or with a neutral verbal response. This finding could be explained as the possibility that student clinicians used nonverbal consequent events without a verbal response to convey their judgment of the client response without interrupting the pace of the therapy session with verbal comments.

Student clinicians with 120 hours or more of clinical practicum used more nonverbal consequent events than did beginning clinicians. These findings support Stevens' (1976) findings that advanced

clinicians used more of the nonverbal behaviors which serve as social reinforcers than did beginning clinicians.

It was found that student clinicians working with clients in the preschool age group used a greater number of positive touch, positive brow movement, presentation of a token and frown than did clinicians with clients in older age groups. The presentation of a token was found most often to be employed by student clinicians with clients in the preschool group, possibly because of the need of preschool clients to have token reinforcement to develop their awareness of a correct and an incorrect response. Student clinicians working with adult clients used the category absence or neutral verbal response more than did the other clinicians. This finding could be explained as the possibility that six of the seven adult clients were involved in articulation therapy at the time of the videotaping. In rapid drill, as used in articulation therapy, the adult clients read the stimulus words and were being reinforced on a schedule other than 1:1. This contributed to the increased usage of the category, absence or neutral verbal response, with adult clients.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate the positive and negative verbal and nonverbal consequences to client response delivered by student clinicians in the practicum situation.

The subjects included thirty-two undergraduate and graduate female student clinicians who had completed not less than ten hours of clinical case contact.

Each student clinician was videotaped for a ten-minute segment of the regularly scheduled therapy session. These videotapes were viewed and the nonverbal behaviors and verbal behaviors were recorded on to cassette tapes. Both the nonverbal and verbal behaviors selected for this study were counted. The mean number of occurrences for each behavior was calculated. The ratio of nonverbal to verbal consequent events was determined.

The following conclusions were drawn from the data:

1. A high frequency of agreement, ninety-eight percent, existed when both a positive verbal and positive nonverbal consequent event occurred together.
2. Positive verbal consequent events were used more than positive nonverbal consequent events. The ratio of positive nonverbal consequent events to positive verbal consequent events was .73.

3. An agreement of one hundred percent existed when both a negative verbal and a negative nonverbal consequent event occurred together.
4. Negative verbal consequent events were used more often than negative nonverbal consequent events. The ratio of negative nonverbal to negative verbal consequent events was .4.
5. Nonverbal consequent events were used in the absence of a verbal response or with a neutral verbal response 125 times.
6. Student clinicians with 120 hours or more of clinical practicum used more nonverbal consequent events than did clinicians with less hours of clinical practicum.
7. Student clinicians working with preschool clients used a greater number of positive touch, positive brow movement, presentation of token, and frown than did clinicians with clients in older age groups.
8. Student clinicians working with adult clients used the category absence of a verbal response or neutral verbal response more than did the other clinicians.

Limitations of the Study

Generalizations from this study are limited by the following factors:

1. The categories chosen for investigation were only a sample of the total possible nonverbal communication behaviors.

Other nonverbal behaviors that act as consequent events that were not investigated by this study include: eye contact and the duration of eye contact, facial expressions such as wide eyes, closed eyes, sideways looks, winks, rolled eyes and wrinkled nose, the seating arrangement between the clinician and client, which may have some effect on the type of consequent events used, leg and foot movements and vocal behavior such as the loudness of the clinician's voice and the clinician's rate of speaking.

2. Only female subjects were used for this study because of the small number of male subjects available.
3. The inadequacies of the audio system in the room used for the videotaping prevented the recording of some subtle verbal behaviors. Microphones around the necks of the clinicians and clients would have improved the audio recordings.
4. Because some clinicians were involved in highly structured intervention during the ten-minute segment of the therapy session while other clinicians were involved in a low structured situation, an equal number of client responses was not obtained for each subject. If an equal number of client responses had been obtained, differences in the type and quantity of verbal and nonverbal consequent events might have been observed.

Suggestions for Future Research

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

1. Repeat the study to investigate the types and quantities of verbal and nonverbal behaviors used by male clinicians in comparison to female clinicians.
2. Analyze sequential nonverbal behaviors which may indicate patterns of nonverbal behavior which are used as consequent events.
3. Investigate the nonverbal behaviors of the client as well as the clinicians.
4. Investigate the verbal and nonverbal consequent events dependent upon the type of therapy.
5. Investigate the verbal and nonverbal consequent events dependent upon the sex of the client.

APPENDIX A

WRITTEN CORRESPONDENCE TO SUBJECTS

Dear Student Clinicians,

This correspondence is to inform you that sometime within this month, I will be videotaping your clinical session. I wish to impress upon you that you will not be identified nor evaluated nor will this videotaping affect your grade in practicum. You will be videotaped in order that I might collect data for my thesis. Do not make any special preparations. I will be contacting you about rescheduling your clinical session in Room D or Room E in the near future.

Thank you,

Nancy Kienzle
Graduate Student

APPENDIX B

DEFINITION OF TERMS

1. Consequent Event - defined as the event that occurs after the client responds.
2. Frequency of Agreement - defined as the number of times that verbal behavior concurs with the nonverbal behavior, i.e., both positive or both negative.
3. Ratio - defined as the relation of nonverbal behavior to verbal behavior in respect to quantity.
4. Positive Verbal Evaluation - defined as a word or phrase judged by the experimenter to express approval, agreement, or affirmation of the client response.
5. Negative Verbal Evaluation - defined as a word or phrase judged by the experimenter to express disapproval of or disagreement with the client response.
6. Absence or Neutral Verbal Response - defined as the lack of a verbal response or a response that was neither positive nor negative following a client response.
7. Smile - defined as the upward bilateral extension of the lateral aspects of the lip region from a position of rest with a pleasant connotation.
8. Frown - defined as the distinct drawing together and lowering of both eye brows with an unpleasant connotation.
9. 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.
10. 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.

11. Positive Touch - defined as bodily contact between clinician and client in a manner to restrain or punish.
12. Negative Touch - defined as bodily contact between clinician and client in a manner to restrain or punish physically.
13. Positive Gesture - defined as movement of the arm, hand, or finger to indicate approval. Included were: the clinician clapping her hands and a handshake between the clinician and client.
14. Negative Gesture - defined as movement of the arm, hand, or finger to indicate disapproval. Included was the clinician shaking her finger at the client.
15. Positive Brow Movement - defined as the raising of the eye brows upward to indicate approval.
16. Presentation of Token Reinforcers - defined as the presentation of money, points, stars, or tokens which have value in that they can be traded for a preferred object, activity, or experience.
17. Removal of Token Reinforcers - defined as the taking away of money, points, stars, or tokens which the client has in his possession.

APPENDIX C

INDIVIDUAL SUBJECTS OCCURRENCE OF THE VERBAL
AND NONVERBAL CONSEQUENT EVENTS
ACCORDING TO CLINICAL HOURS

TABLE 13
 OCCURRENCE OF VERBAL AND NONVERBAL CONSEQUENT EVENTS
 BY EACH SUBJECT IN GROUP I (10-30 HOURS)

Subject	Absence/ Neutral	Positive Evaluation	Negative Evaluation	Smile	Positive Head Nod	Positive Touch	Positive Gesture	Positive Brow Movement	Presentation of Token	Frown	Negative Head Nod	Negative Touch	Negative Gesture	Removal of Token
1	15	23	0	0	0	0	0	0	18	0	0	0	1	0
2	14	29	2	10	0	0	0	0	1	0	2	0	4	0
3	11	6	2	0	1	0	0	0	0	0	0	0	0	0
4	6	4	0	0	0	0	0	0	0	0	0	0	0	0
5	5	20	1	12	2	0	1	0	15	0	0	0	0	0
6	14	13	3	1	0	3	0	2	0	1	1	0	0	0
7	126	15	0	0	5	0	0	0	0	0	0	0	0	0
8	38	13	0	3	1	1	0	0	0	0	0	0	0	0
9	60	19	2	0	1	0	0	0	31	0	1	0	0	0
10	5	48	4	8	8	0	0	0	10	0	1	0	0	0

TABLE 13--Continued

Subject	Absence/ Neutral	Positive Evaluation	Negative Evaluation	Smile	Positive Head Nod	Positive Touch	Positive Gesture	Positive Brow Movement	Presentation of Token	Frown	Negative Head Nod	Negative Touch	Negative Gesture	Removal of Token
11	23	15	0	7	1	0	1	0	0	1	0	0	0	0
12	9	28	0	1	4	0	0	0	0	0	0	0	0	0
13	28	30	3	3	17	0	0	0	0	0	0	0	0	0
14	57	5	5	0	0	0	0	0	0	0	0	0	0	0
Totals	411	268	22	45	40	4	2	2	75	2	5	0	5	0

TABLE 14
 OCCURRENCE OF VERBAL AND NONVERBAL CONSEQUENT EVENTS
 BY EACH SUBJECT IN GROUP II (30-90 HOURS)

Subject	Absence/ Neutral	Positive Evaluation	Negative Evaluation	Smile	Positive Head Nod	Positive Touch	Positive Gesture	Positive Brow Movement	Presentation of Token	Frown	Negative Head Nod	Negative Touch	Negative Gesture	Removal of Token
1	10	13	5	4	1	3	0	0	6	0	1	0	0	0
2	6	24	10	4	0	0	0	0	23	0	1	0	0	0
3	6	18	2	5	0	0	0	0	0	0	1	0	0	0
4	51	17	1	0	1	0	0	0	0	0	0	0	0	0
5	57	33	2	5	0	0	0	2	0	0	1	1	0	0
6	37	29	5	12	5	0	0	0	0	0	1	0	0	0
Totals	167	134	25	30	7	3	0	2	29	0	5	1	0	0

TABLE 15
 OCCURRENCE OF VERBAL AND NONVERBAL CONSEQUENT EVENTS
 BY EACH SUBJECT IN GROUP III (90-120 HOURS)

Subject	Absence/ Neutral	Positive Evaluation	Negative Evaluation	Smile	Positive Head Nod	Positive Touch	Positive Gesture	Positive Brow Movement	Presentation of Token	Frown	Negative Head Nod	Negative Touch	Negative Gesture	Removal of Token
1	49	38	11	5	5	0	0	0	58	0	0	0	0	0
2	102	15	0	4	5	0	0	0	0	0	0	0	0	0
3	10	29	1	11	8	0	0	2	0	1	0	0	0	0
4	15	3	2	0	1	0	0	0	0	0	0	0	0	0
5	15	20	0	0	0	0	0	0	0	0	0	0	0	0
6	11	5	2	3	1	0	1	0	11	0	0	0	0	0
7	19	28	1	7	0	2	4	0	0	0	0	0	0	0
Totals	221	138	17	30	20	2	5	2	69	1	0	0	0	0

TABLE 16
 OCCURRENCE OF VERBAL AND NONVERBAL CONSEQUENT EVENTS
 BY EACH SUBJECT IN GROUP IV (120+ HOURS)

Subject	Absence/ Neutral	Positive Evaluation	Negative Evaluation	Smile	Positive Head Nod	Positive Touch	Positive Gesture	Positive Brow Movement	Presentation of Token	Frown	Negative Head Nod	Negative Touch	Negative Gesture	Removal of Token
1	25	50	3	0	0	0	0	0	49	0	1	0	0	0
2	147	36	1	6	38	0	4	0	0	0	5	0	2	0
3	9	27	0	1	7	1	1	0	2	0	1	0	0	0
4	4	7	1	0	4	0	1	2	0	0	1	0	0	0
5	6	10	4	4	0	0	0	0	0	0	0	0	0	0
Totals	191	130	9	11	49	1	6	2	51	0	8	0	2	0

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