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Videotape Feedback and Its Effects on Two Communicational Modalities

John Joseph Benda

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VIDEOTAPE FEEDBACK AND ITS EFFECTS

ON TWO COMMUNICATIONAL MODALITIES

(TITLE)

BY

JOHN JOSEPH BENDA

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

Master of Arts in Psychology

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

1977

YEAR

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VIDEOTAPE FEEDBACK AND ITS EFFECTS
ON TWO COMMUNICATIONAL MODALITIES

BY

JOHN JOSEPH BENDA

B.S. in Psychology, Madison College, 1976

ABSTRACT OF A THESIS

Submitted in Partial Fulfillment of the Requirements
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Abstract

The present study was concerned with the applicability of various videotape feedback procedures on two communication modalities. The communication modalities studied dealt with the visual and auditory orientation of 80 college students.

The vast and, for the most part, positive findings associated with videotape feedback have fascinated therapists for the last couple of years. However, for the most part, videotape feedback has been used with individuals without taking into consideration the different ways these individuals communicate and/or learn. The purpose of the present experiment was to analyze the various aspects in which individuals communicate. Once their communicational modality was established it was hypothesized that a videotape feedback procedure which corresponded to their primary modality would facilitate self-awareness and by implication, communication between themselves and others.

In the current study, three experimenters and 80 students were involved in the procedure. The 80 students were randomly divided into eight groups of 10 each and each group was given a different type of videotape feedback: 1) audio and video; 2) audio alone; 3) video alone; 4) neither audio nor video. The results indicated that there were no statistically significant differences between any combinations of the groups. However, a high F value was obtained that was very nearly significant. This near significance was found between the auditorily

classified students and the visually classified students.

According to the present study, it appears likely that there were differences between the auditory and visual students, primarily due to a high groups' effect. However, we are unable to draw any firm conclusions because of such factors as low inter-judgmental reliability and a lack of an objective, second classificatory device.

It appears very probable that people differ in terms of their communicational modalities. The data seemingly pointed out that people can tentatively be categorized into certain modality orientations. The implication being that rapport in psychotherapy can be enhanced through the use and knowledge of the principles discussed herein.

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A Thesis Submitted in Partial Fulfillment of the
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Psychology at the Graduate School of Eastern Illinois
University.

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Introduction

Videotape feedback (VTR) in psychotherapy has recently been and continues to be intensively researched. This type of objective feedback has been shown to be beneficial in therapeutic as well as in several other situations. The sixties saw a multitude of activity in the use of videotape feedback during therapy while the present decade has seen a great increase in VTR research as related to psychotherapy (Mayadas and O'Brien, 1973).

The vast and, for the most part, positive findings associated with videotape feedback have fascinated therapists for the last couple of years. However, in a review of the literature, it was found that videotape feedback has been used with individuals without taking into consideration the different ways these individuals communicate and/or learn. Individuals learn in various manners, some are auditory learners, visual learners or kinesthetic learners (Harris and Smith, 1972). Furthermore, as pertains to psychotherapy, Grinder and Bandler (1976) have developed an innovative theory dealing with the different ways in which individuals communicate. They have written about three main modalities in which people communicate, such as in the auditory, visual or kinesthetic mode.

The purpose of the present experiment was to analyze the various aspects in which individuals communicate. Once their communicational modality was established it was hypothesized that a videotape feedback procedure which corresponded to their primary modality would facilitate self-awareness and by implication, communication between themselves and others.

This experiment will benefit the clinician in that it will possibly indicate that still another variable must be realized, that of communicational modality, in order to effectively establish rapport between therapist and client. Further benefit of this study could possibly be in the area of videotape feedback procedures. Knowing which type of feedback is most effective with certain individuals could possibly accelerate and even improve this form of therapeutic intervention.

Individual Videotape Research

A review of the literature has shown positive results in the ability of videotape feedback to facilitate and improve individual psychotherapy (Cornelison and Arsenian, 1960; Bailey and Sowder, 1970), teaching therapeutic skills (Walz and Johnston, 1963; Wilmer, 1967), marital therapy (Alger and Hogan, 1969; Edelson and Seidman, 1975), family therapy (Bodin, 1969; Alger and Hogan, 1969), group therapy (Czajkoski, 1968; Rogers, 1968; Stoller, 1969; Robinson and Jacobs, 1970; Hogan and Alger, 1969; Danet, 1969; Alger, 1972), behavioral therapy (Bernal, 1969), community services (Berger, Sherman, Spalding and Westlak, 1968), and many other areas.

One of the earliest experiments relating to videotape studies was performed by Cornelison and Arsenian in 1960. The experimenters showed still-photographs to psychotic patients; these photographs had been taken while the patients were interacting in their usual manner. The researchers found that when the subjects were presented with their photographs they experienced very strong emotions. Some felt very good about seeing their actual selves while others were upset at what they saw. The primary finding of the Cornelison

and Arsenian study was that it showed the powerful effect visual feedback has on one's self-awareness. Related to this experiment was an earlier study conducted by Freed (1948). He found that tape recordings of his sessions with a very narcissistic patient resulted in the patient's being more objective about himself.

A new technique was developed in 1963, (Kagan, Krathwhol and Miller), which emphasized the objective measurement of videotape feedback; it was called Interpersonal Process Recall (IPR). Kagan, et. al. praised it as an innovative new technique in psychiatric treatment. Furthermore, Moore, Chevell, and West (1965) showed hospital patients videotaped playback of themselves; the experimenters found significant improvement in their actions as opposed to another group who did not receive videotape feedback. They hypothesized that the videotape experience did, indeed, alter the perceptions of the patients and led to quite pronounced improvements. Moreover, Moore, et. al. (1965, pg. 219) found an interesting side effect of their experiment; the interviewers, who were psychiatrists, realized that they were changing in their interview techniques as the experiment progressed. They concluded that videotape feedback "is truly a new and often unsettling experience for all the various people who watched themselves on videotape."

Geertsma and Reivich (1965) were among the first to report controlled, objective experiments dealing with videotape feedback. They utilized nurses' ratings and a personality inventory. The experimenters found that their subject was more self-objective and more active in the therapeutic session after she viewed herself on videotape. However, the authors pointed out that the therapist should be considered as the most important aspect of therapy and

videotape feedback by itself is of no real value in this situation. In other words, videotape feedback, per se, is not as effective as feedback plus therapeutic direction and/or integration. However, Holzman (1969) did not totally agree with Geerstma and Reivich's finding on the unimportance of videotape feedback by itself. He found that most people experience a slight uneasiness when hearing their own voices. The method of experimentation consisted of recording all subjects' voices and then measuring their responses. Holzman measured this disturbance and/or uneasiness by means of electrodermal measures (GSR), plethysmographic responses and frontal EMG's. By these means, the author discovered that people are aroused physiologically when they hear their own voices.

Group Videotape Research

A wide range of research has been done in utilizing videotape feedback in group therapy. Stoller (1965; pg.1) has stated that:

The most significant aspect of the process is that the actual behavior of the individuals in interaction with others is recorded in the group session. Thus, there is the unique opportunity to see oneself away, painting a particular picture of oneself, listening, being superior, pleading, being angry, or being annoyed. Only under these circumstances can one actually see oneself as seen by others: he literally confronts himself.

In the area of group videotape feedback, Hogan and Alger (1969) have done extensive investigations. In one study, they presented some typical reactions that occurred in group sessions via videotape. They recorded fifteen minutes of a group therapy session and immediately replayed it

to the group members. Any member could stop or review the tape whenever he or she wished; the observations, conflicts, etc. were "rehashed" by the group members. These authors believed there was a great deal of promise in utilizing the videotape method in group therapy. For example, they state that VTR provided patients with the opportunity to objectively view themselves as they appeared to others. They also emphasized the fact that because of the reviewing session the patient felt he was part of the therapeutic process; thus, a democratically-oriented therapeutic relationship developed. After only one videotape session, patients often experienced an insight that had previously escaped from their grasp; this occurred after months and even years of verbal interaction with their therapists and other group members. People actually seemed to be quite interested in how they appeared to others.

To read something may bring intellectual insight. To be told something may produce a similar and possibly a more active consequence. To be shown something has even more impact. But mentally to do something oneself makes it possible to experience it more fully, and hence makes it possible to integrate it more completely into one's behavior. The use of videotape in group psychotherapy gives promise of enhancing the development of this kind of insight (Hogan and Alger, 1969, pg. 163).

The group therapy situation provides an ideal environment for eliciting behavior from the subjects that they would use in their everyday lives. For instance, if a patient were a shy, withdrawn individual in group therapy, there would be a strong likelihood that he would interact in a similar manner in his other activities. Onder (1970, pg. 31) felt that, ". . . one of the most effective uses of video feedback may well be in the area of

group therapy." Further work with groups and videotape feedback has been done by Robinson and Jacobs (1970). They designed an experiment in which three experimental groups received immediate videotaped feedback after each session; three control groups did not receive the same feedback. Their results indicated that the subjects in the experimental groups (VTR) exhibited significantly more adaptive behavior than did subjects in the control group.

A very informative article about the facilitating effect of videotaped feedback in group situations has recently been written by Mayadas and O'Brien (1973, pg. 108). For example, they stated that, ". . . the facility of feedback is enhanced when the processes of group therapy are further accelerated by videotaped feedback." In a group situation using videotaped feedback the individual patient was made more aware of his self-perception as well as how others perceived him.

It has been reported that videotaped feedback is extremely important in allowing the patient to see and hear objective information about interaction with others in his environment (Alger and Hogan, 1969). The researchers suggested that if an individual observed his own behavior without it being outlined for him, he would be more willing to accept these observations. Furthermore, Alger and Hogan (1969, pg. 93) have written:

Not only does it (VTR) make immediately available more objective data concerning the therapeutic process, but it also

encourages a more intense emotional involvement in the process of therapy itself. The use of the playback also serves to clarify complex behavior patterns and sequences in the actual context of their occurrence, and is especially useful in relating verbal and nonverbal levels and channels of communication within these contexts.

Onder (1970, pg. 23), for the most part, agreed with the work of Alger and Hogan in that he believed the individual, when receiving VTR, ". . . receives a clear picture of how he behaves and how he must look to others." One of the most important objectives of psychotherapy is for the therapist to give the patient as objective a formulation as possible of his problems and their relation to his interpersonal interactions. The therapist's job is to show the patient his relationship to others and to aid him in adjusting maladaptive behaviors. What better way to show individuals their unnecessary behaviors than through objective, videotaped feedback of themselves. The individual can not reject the therapist's formulations if the proof is there on a television screen.

Many researchers have concerned themselves with the possibility of the camera interfering with the normal functioning of the individual in the therapy session. However, Wilmer (1967, pg. 123) stated, "I maintain that it is possible to obtain reliable videotape records with the use of "open" cameras." In other words, the camera need not be disguised. Wilmer and many other experimenters, (Alger, 1969; Holzman, 1969; and Canter, 1969) have argued that subjects soon become accustomed to the camera and its visibility does not deter

from the session in any manner. Furthermore, Czajkoski (1968, pg. 523)

stated that, "playbacks should ordinarily not be longer than fifteen minutes, and post-playback discussions need not be long nor, in many instances, need they occur at all." Wilmer (1967) agreed with Czajkoski on the importance of short playback because more extensive feedback has a tendency to overwhelm the Ss with information.

An individual is largely perceived by others because of a particular style of communication. In most cases, though, the individual is unaware of his unique communicational style and, therefore, does not always realize the effect he has on others. There develops a discrepancy between what the individual thinks he is projecting as his self-image and what others are perceiving. "Visual feedback helps to provide a patient with a way of resolving the discrepancy between the interpersonal message he would like to give and the one he actually does give" (Onder, 1970, pg. 24).

Audiotape Research

Although videotaped feedback is by and large the most often used feedback procedure, there have been a number of significant studies on audiotape feedback. One of the earliest of these studies, or wire-recording as it was referred to then, was conducted by Bierer and Strom-Olsen in 1948. They incorporated wire-recording playback in their individual therapy sessions. Their patients' increased rate of recovery as a result of the wire-recording encouraged the experimenters. In a later study it was found that tape recordings were beneficial in that the patient could not deny what he had previously said during therapy (Gill, Newman, and Redlich, 1954). Furthermore, Geocarlis (1960) conducted a study which involved tape recorded in-

interviews followed by a replay of these interviews to the interviewees. He found that the procedure was effective with his six subjects, especially to four of his subjects who had personality disorders. Moreover, audiotape feedback in group psychotherapy was found to be successful in facilitating greater verbal interaction and more effective in group sessions with six juvenile delinquents (Kidorf, 1963).

An additional study using audiotape reported that many of the patients used as subjects enjoyed hearing themselves on tape and several were impressed and somewhat surprised by the qualities they exhibited on tape (Abell, 1963). Audiotape feedback has also been used with some success in the treatment of alcoholics (Armstrong, 1964), and in family therapy (Paul, 1966; Satir, 1964). It is especially successful in family or group therapy in that it allows members to hear themselves as they actually are through their tones and vocal inflections. For example, some people might regard themselves as being soft-spoken and pleasant; but, when they listen to recordings of themselves, they also recognize an underlying anger and hostility they had previously missed.

The above studies show that audiotape has been researched quite extensively and that researchers praise this technique for being very useful as a therapeutic procedure. However, all the studies cited were not conducted as controlled, experimental research. They lacked proper control groups, objective and operationally defined dependent measures, and a statistically minimal number of subjects. However, more recently, Bailey (1968) conducted a controlled experiment utilizing audiotape equipment. The method consisted of the random assignment of twenty-four female prison inmates to one of three

groups. One group received audiotape feedback; one received "regular" therapy without feedback; the third received neither therapy or feedback. After an analysis of the tapes, the researcher found the feedback group to be more verbally productive than was the "regular" therapy group. However, no experimentally significant result was discovered in terms of his dependent measures consisting of a Q-sort technique and an objective behavioral rating.

Bailey and Bailey (1973) have conducted more recent research involving audiotape feedback. The purpose of one study was to discover the effectiveness of audiotape playback in modifying the self-concept. The experimenters found the playback group to show significantly more positive self-concept change than did the regular or the control groups. In other words, this study produced objective evidence that audiotape playback can facilitate or change self-concepts in a positive manner.

As is obvious by the previously cited research, videotape and audiotape feedback appear to be two techniques that are and will continue to be very effective in many different areas of psychology; this is especially true in the group psychotherapy sector. Research has shown that these feedback procedures are effective in individual and group psychotherapy, in marital and family therapy, in teaching, supervision and in many other areas that are too numerous to list. Videotape feedback research still appears to be in its infancy and much more needs to be accomplished. For instance, more experimentally controlled and objective studies must be conducted; studies dealing with the why and how theories of the workings of videotape feedback are needed as well.

Communicational Modality Research

Communicational modality, a factor in the present experiment, will be defined as the interactional mode a person predominantly uses in his everyday functioning to promote his ability to communicate effectively.

Special education researchers, especially in the reading area, have known for years that there are four primary modes of learning; these are: visual, auditory, kinesthetic and multisensory.

Some youngsters learn more effectively when they see similarities and differences between stimuli (visual), others when they hear differences and similarities between stimuli (auditory). Most children are able to learn through all modes, though one is usually more efficient than the others (Harris, and Smith, 1972, pg. 42).

Every person has certain strengths and weaknesses which make one communicational modality more effective than another. When teaching children how to read it is very important to match the student with the learning mode in which he is most efficient. Teaching a child, who is predominantly an auditory learner, to read through the presentation of visual materials will be less effective than with the use of auditorily presented materials. In other words, "the youngster having a strength in the learning mode emphasized by a given instructional system can be expected to benefit more than a youngster with a different strength" (Harris and Smith, 1972, pg. 43).

It appears that the communicational modality research done on reading can be applied on an equally effective basis to the process of psychotherapy. For instance, one of the main purposes of psychotherapy is to facilitate communication between the patient and the therapist. If the therapist has a way

of knowing what the patient's preferred mode of communication and/or learning is, then the therapist need only communicate in that modality in order to improve rapport and ~~make~~ therapy more efficient and productive.

Further studies have been conducted (Hasterok, 1964; Bateman, 1968; and Beery, Barrett and Powell, 1974) which reveal the effectiveness of teaching children to read through the use of a teaching method in the modality in which the children are primarily dominant. Most of these studies used the Illinois Test of Psycholinguistic Abilities (ITPA) to measure the students' weaker channels of learning. For instance, the ITPA consists of many subtests dealing with auditory and visual dimensions of learning, such as the auditory-vocal automatic subtest which "measures the subject's ability to use grammatical structures which he has presumably heard in the language spoken in his environment" (italics mine, Bateman, 1968, pg. 10). Moreover, subtests, such as visual-motor association measure "the ability to make relationships among the meaningful visual symbols which are presented" (italics mine, Bateman, 1968, pg. 18). Consequently, the ITPA is a useful screening examination for discovering the psycholinguistic disabilities children may have and in helping to find an effective remedial curriculum (Bateman, 1968).

Further support for the contention that communication is facilitated by responding and interacting in similar communicational modalities has

been presented by Grinder and Bandler (1976). Their relatively new and innovative theory is one of the factors being investigated in the present study. The foundation of their theory is stated quite succinctly in the following statement:

Human beings live in a "real world." We do not, however, operate directly or immediately upon that world, but, rather, we operate within that world using a map or a series of maps of that world to guide our behavior within it. These maps, or representational systems, necessarily differ from the territory that they model by the three universal processes of human modeling: Generalization, Deletion and Distortion. When people come to us in therapy expressing pain and dissatisfaction, the limitations which they experience are, typically, in their representation of the world and not in the world itself (Grinder and Bandler, 1976, pg. 3).

Each map is different from every other map just as each individual is different from every other individual. Grinder and Bandler state that there are three main communicational modalities through which people receive information: the visual, the auditory and the kinesthetic. Each of these communicational modalities make up a representational system. For example, when a person is utilizing the primarily visual modality he/she will respond and interact most effectively when adjectives, verbs, images, and so on, are delivered in this mode. The visual person "sees" things more frequently than he "hears" them or "feels" them. Consequently, since the visual person primarily uses his visual sense more often than others, he also uses visual adjectives, verbs, nouns, and so on when communicating. For example, a person whose map is basically visual will utilize words such as see, saw, show, clear, image, black, blue, and so on. He will possibly respond with sentences such as:

"I want to show you something." "This looks really bright and clear to me." "That image is extremely vivid in my mind." "I've seen what you mean." A person whose map is predominantly auditory will use words such as hear, sound, say, blast, said, talk, etc. An auditory person will incorporate such phrases as: "I want you to listen carefully to what I say to you." "This sounds really good to me." "I've been talking and listen-
ing to her for hours." A person whose map is predominantly kinesthetic will utilize words such as feel, happy, sad, excited, bad, lousy, and so on. Phrases used include the following: "I feel bad today." "It's good to be alive today and I'm happy." "I've felt down in the dumps lately." "Gosh, what a horrible feeling."

According to Grinder and Bandler (1976) each person uses one or more of these representational systems as his predominant communicational map more often than others. Therefore, "we can predict that each person will have a dramatically different experience when faced with the "same" real world experience" (Grinder and Bandler, 1976, pg. 9). For example, a portrait artist, when painting or enjoying an artistic work, will be more in touch with the painting's lines, textures and contours than a person who is primarily in the auditory representational system. It is relatively easy to identify the individual's most highly valued representational system. For instance, one need only pay attention to the person's "predicates" (these are the verbs, adjectives, phrases, etc.) used by the individual in his everyday speech. When a person frequently incorporates

the phrase: "I hear what you're saying," in conversing, his most highly valued representational system is probably auditory. Moreover, if the individual uses phrases similar to "Show me what you mean," then it is quite likely that his predominant communicational system is visual.

If a person, especially a therapist, could communicate in the modality that his patient most frequently demonstrated, then the therapeutic relationship would grow and prosper at a fast and effective rate. If the therapist is able to shift his predicates so that they correspond to his patient's, then the patient would probably acknowledge the therapist's understanding and consequently trust him more readily. "By consciously selecting your predicates to match those of the person with whom you want to communicate, you will succeed in accomplishing clearer and more direct communications" (Grinder and Bandler, 1976, pg. 15).

It is most probable that many therapists have encountered a situation where rapport was not easily established with their client. They would interview their client and there would be no answer or an inappropriate one for several questions. As an example, a client might say, "I'm feeling very empty lately," and the therapist might answer, "Show me where you are empty." The client is coming from a kinesthetic system and the therapist responds from his predominantly visual system. The ultimate result is a lack of communication, poor rapport, and ineffective therapy. "A person's most highly valued system is the one in which he has the maximum number of distinctions, and usually is the one in which he will be able to cope most

effectively" (Grinder and Bandler, 1976, pg. 22). Thus, if the therapist is able to revert to the communicational system used by his client, therapy is advanced much quicker because the client is more communicationly effective in his preferred system.

All the techniques of every form of therapy are techniques which affect the processes of representation, the creation and organization of a client's model of the world. To the degree that techniques induce change in a client's modeling of the world is the degree to which they will be effective in assisting a client to change. As a client's model of the world changes, his perceptions change and so, too, does his behavior. All forms of therapy, all the techniques of the different forms of therapy- in fact, all learning - can be understood in terms of the processes of representation" (Grinder and Bandler, 1976, Epilogue).

It was contended that specific modes of feedback will significantly improve communication and/or self-awareness in some individuals more so than in others. For example, if a predominantly visual individual received "video alone" playback (V-VTR) he would probably benefit from it more as opposed to "audio alone" playback (A-VTR). Furthermore, video alone feedback will most probably be more effective with those whose most highly valued representational system is visual. Geertsma and Reivich (1969) have performed an experiment utilizing four treatment groups: 1) audio and video; 2) audio alone; 3) video alone; 4) neither audio nor video. The basic experimental procedure for each subject consisted of an interview which was recorded on videotape and then played back to the subject on the next day, following the above group classifications. Their results indicated, ". . . that self-relevant information mediated via the auditory channel was contextually richer, more effective in eliciting cognitive and affective

changes in subjects and more consonantly apprehended than information channeled visually" (Geertsma and Reivich, 1969, pg. 210). Furthermore, the authors suggested that both audio and video alone tended to increase the subjects' sensitivity feelings. The dependent measure consisted of the Multiple Affect Adjective Check List (MAACL) and a self-description, using bipolar items representing 14 personality factors from the rating domain as collated by Cattell. Therefore, in this study it seemed that auditory feedback was most effective in eliciting positive therapeutic change. These findings are all the more surprising because recent research in this area has dealt with the efficacy of videotaped feedback. Most of the findings, as indicated previously, point to the contention that videotape feedback is most effective. Thus, one finds a discrepancy between what type of feedback is most effective in eliciting change in psychotherapy.

It was hypothesized that the discrepancy stems from the fact that the researchers did not analyze the representational systems of their subjects. Thus, it is quite possible that the studies reporting significant results in the videotape feedback area utilized predominantly "visual" people or those whose most highly valued representational system was visual. On the other hand, those studies reporting significantly positive results with audiotape feedback probably utilized a predominantly "auditory" group of individuals. Therefore, in order to discover which feedback system is most effective, it is necessary to consider the individual differences among subjects. One must also account for the different representational systems that

individual's exhibit and associate them to the feedback procedure which is most relevant.

The hypotheses of the present experiment were as follows:

1. "Video alone" feedback will be more effective than "audio alone" feedback in facilitating self-awareness in individuals whose primary communicational modality is visual. However, there will be no difference between the "video alone" condition and the "audio and video" condition.
2. "Audio alone" feedback will be more effective than "video alone" feedback in facilitating self-awareness in individuals whose primary communicational modality is auditory. There will be no difference between the "audio alone" group and the "audio and video" group.
3. Feedback (video alone, audio alone, and audio and video) will be more effective than no feedback in facilitating self-awareness in all individuals used in the experiment.

The dependent variable consisted of the discrepancy score between a pre-and-post test Q-sort. Two independent variables were utilized. One variable consisted of different communicational modalities, and consisted of two levels: auditory and visual. The second independent variable was varying videotape feedback procedures. This variable had four levels: audio alone, video alone, audio and video, and neither audio nor video.

Method

Subjects

A total of 80 students at Eastern Illinois University participated in the experiment. These subjects were obtained from all introductory (freshman and sophomore level) psychology courses as well as two introductory art and drama classes at the university. The experimenter's assistants, both female sophomore psychology majors receiving independent study credit, were permitted by various professors to talk to students from their classes in an effort to procure subjects. The students were told that the experiment was being conducted by a graduate student in clinical psychology. Furthermore, they were told that the purpose of the study was to evaluate the different communication systems of people as well as their interaction in groups. It was pointed out that a number of them will receive some type of videotape feedback. The Ss were told that, throughout the semester, they would have to devote a minimum of four hours of their time to the experiment. All of their test results were kept confidential and no incentive was offered to them; it was on a strictly volunteer level.

The subjects ranged in age from 18 to 29; 30 were freshman and 50 were sophomores. The 30 freshman consisted of 5 males and 25 females, while the sophomores consisted of 25 males and 25 females. Each of the following groups consisted of ten Ss: (1) Control (Visual). Seven female and three male Ss, with an age range of 18-23, and a mean age of 19 years. (2) Audio (Visual). Three females and seven male Ss, with an

age range of 18-26, and a mean age of 20 years. (3) Video (Visual). Six female and four male Ss, with an age range of 18-29, and a mean age of 20 years. (4) Audio & Video (Visual). Five female and five male Ss, with an age range of 19-20, and a mean age of 19 years. (5) Control (Auditory). Seven female and three male Ss, with an age range of 18-26, and a mean age of 21 years. (6) Audio (Auditory). Seven female and three male Ss, with an age range of 18-21, and a mean age of 19 years. (7) Video (Auditory). Nine female and one male Ss, with an age range of 18-20, and a mean age of 18 years. (8) Audio & Video (Auditory). Five female and five male Ss, with an age range of 18-21, and a mean age of 19 years.

Instrumentation

A Q-sort utilizing 32 items was categorized both before and after the group session by each S. The Q-sort items were partly derived from the Kent State University Self-description Q-sort (Sakowitz, 1975) and from a study conducted by I.D. Yalom (1970). The specific items are listed in Table 1. The instructions to all Ss for the Q-sort were as follows:

We're interested in how people describe themselves in group situations. Please sort these cards to describe yourself as you perceive yourself today. There are 32 cards which you are to distribute among 7 categories with the following in mind:

- put 2 cards in Pile 7. These statements are most like you.
- put 4 cards in Pile 6. These statements are quite like you.
- put 6 cards in Pile 5. These statements are somewhat like you.
- put 8 cards in Pile 4. These statements are neutral.

put 6 cards in Pile 3. These statements are somewhat unlike you.

put 4 cards in Pile 2. These statements are quite unlike you.

put 2 cards in Pile 1. These statements are most unlike you.

Distribution sheets were presented to the subjects, each containing a 3" x 5" square and a pile number as well as additional instructions beside each square. See Table 2 for further clarification.

The tape recorder utilized in the interview session was a Sony, Model TC 110-A, cassette tape player. The videotape equipment used was a Sony U-matic videocassette recorder, Model VO-2600.

Experimental Design

The present experiment utilized eight groups, each consisting of 10 subjects. Four of the groups consisted of only "visually" oriented Ss and the other four groups consisted of only "auditory" oriented subjects. Thus, forty of the subjects were individual's whose most highly valued representational system was visual while the other forty Ss were individuals whose most highly valued representational system was auditory.

The forty visual subjects were randomly assigned (utilizing a random numbers table) to one of the four "visual" groups; the same procedure was followed for the forty auditory subjects. The random numbers table utilized was obtained from Plutchik (1974, pg. 316).

The four visually oriented groups were utilized as follows: control group I was given a pre-and-post test Q-sort but received no type of VTR feedback following the one group session. Treatment group I was given a

pre-and-post test Q-sort as well as "video alone" (V-VTR) feedback; treatment group II took a pre-and-post test Q-sort as well as "audio alone" (A-VTR) feedback after the group session; treatment group III was administered a pre-and-post test Q-sort as well as "audio and video" (AV-VTR) feedback. The four other groups whose subjects were primarily auditorily oriented were given the same treatments as described above. For further clarification see Table 3.

Procedure

Each subject came to the testing room for an initial interview with either the experimenter or one of his two undergraduate assistants. The interview was structured so that the Ss were asked to talk about how they related to others and how others related to them in order that an initial rapport was established. A sample of the questions are listed in Table 4. The session, which was tape recorded, was conducted for approximately 15 minutes. These tapes were intensively studied by the undergraduate assistants and the experimenter; from them, the S's primary communicational system was tentatively established. The assistants were given practice situations where they were to pick out the specified, relevant predicates. When they had practiced for awhile, felt competent, and reached 80% agreement with each other the training session was terminated and the experimental session began. The experimenters isolated relevant predicates from each S's tape recording; for instance, if 51% of the subject's predicates were visually oriented than the S was tentatively and randomly assigned to one of the four

Table 3Experimental Design

Group	Pre-Q-sort	Group VTR	Post-Q-sort
Control I (Visual <u>Ss</u>)	X	-----	X
Treatment I (Visual <u>Ss</u>)	X	V-VTR	X
Treatment II (Visual <u>Ss</u>)	X	A-VTR	X
Treatment III (Visual)	X	AV-VTR	X
Control II (Auditory)	X	-----	X
Treatment IV (Auditory)	X	A-VTR	X
Treatment V (Auditory)	X	V-VTR	X
Treatment VI (Auditory)	X	AV-VTR	X

visually oriented groups. For example, statements such as, "I need to see and imagine that myself," were classified as visual because of the visual orientation of the emphasized words. The same procedure was followed if the S's predicates (verbs, adjectives, phrases) were auditorily oriented. For instance, "I hear what you're saying" and "Don't talk to me in that tone or voice," are examples of sentences containing auditory predicates. However, the subject was then randomly assigned to one of the four auditorily oriented groups. Only if there was a clear tendency (51%) towards one or the other modality was the individual classified and allowed to complete the experiment.

The experimenter and at least one assistant met nightly for approximately two hours processing and transcribing relevant predicates from the subjects' tape recordings. The experimenters, prior to transcribing, agreed on the verbs, nouns, adjectives and so on that were to be included for classificatory purposes. After each session a reliability count was taken and the smaller frequency of responses was divided by the larger frequency and multiplied by 100. The mean inter-judge reliability for all subjects was approximately .70.

A Q-sort was administered to all subjects at approximately the same time each day. A specific time was set up with each S after he/she had completed the interview. Each of the 32 Q-sort items was typed on 3" x 5" index cards. The instructions were typed, double-spaced and centered with elite type, on a white piece of 11" x 8 $\frac{1}{2}$ " paper. (See instrumentation

section for further detail).

Following the completion of the Q-sort by each S, a two-week period elapsed before the subjects met with their assigned groups. Each group met for approximately two hours and had specific feedback procedures to follow (see Design section). The experimenter facilitated the groups and the assistants alternated in operating the videotape and audiotape equipment. All groups met in the graduate assistants' room in the Psychology Department at Eastern Illinois University. Videotape equipment was provided by that same department. The videotape equipment and the camera operators were visible and the operators were instructed to include all participants in the group videotape, if the conditions were applicable.

The groups were conducted for one main purpose: to facilitate each S's perception of himself and others within the group. Two exercises found to be effective in sensitivity training and encounter groups were utilized (Suinn, 1975). Initially, the group facilitator utilized an ice-breaker game called "Names Game." This exercise involved the requirement of each member in the group to state their first name; when everyone had done so, each subject was to restate every other person's name. The next exercise utilized was called the "First Impression" game. The group facilitator asked everyone, "to go around and verbalize their first reactions to one another. They were asked to only give their first impressions" (Suinn, 1975, pg. 134). There was a brief discussion following the "first

impression" game discussing each S's reaction to the impressions received from others in the group.

Six of the groups received either video alone, audio alone, or audio and video feedback at the conclusion of the group discussion (see Design section). The replays were no longer than fifteen minutes in length. The subjects were allowed to observe their specific playback; however, no attempt was made to facilitate the group's reactions. Immediately following the replay, every group member was asked to do an additional Q-sort. The items and instructions were identical to those used prior to the group session.

The two groups who received no feedback of any kind were conducted in a similar manner to the other groups. However, there was no videotape equipment or camera operators present. Following the group discussion, they were asked to sort the items of the Q-sort. The Q-sort and the instructions were identical to the ones used previously.

After all subjects had completed their categorization of the post-group Q-sort items, the attempted purpose and rationale of the study was disclosed to them. Furthermore, they were asked if any anxiety or other adverse feelings were experienced as a result of the experiment. None of the subjects expressed any negative feelings at the conclusion of the experiment. On the contrary, the majority of them found the group experience to be relatively rewarding and were glad they had volunteered.

Statistical Analysis

The dependent measure utilized in the experiment was the discrepancy

score between the pre-and-post group session Q-sort. Since the data was in ordinal form and the groups were independent, a Pearson product-moment correlation was used initially. Each subject was assigned a correlation coefficient based upon the results of his/her two Q-sorts. Each item of the Q-sort had a weighted numerical value after it had been placed into a specific pile by the S. For example, if item #1 was put into pile 5 it received a numerical value of 5; if item #14 was placed in pile 2 it obtained a weighted numerical value of 2; etc. See Table 5 for further clarification.

Guilford (1963, pg. 22) has stated that "the difficulty (in analyzing Q-sorts) is readily met by transforming the obtained scores into corresponding standard scores." Therefore, each subject's correlation coefficient was transformed into a Fischers' Z-score, (See Table 5), and multiplied by 1000 to eliminate the decimal. Since a Z-score is a standard score and interval data as well, it was necessary to perform an analysis of variance on the Z transformed Q-sort data.

A 4 x 2 Factorial Design was utilized for the analysis of variance. It was maintained that a factorial design would obtain more information from the data as opposed to a correlational study or a one-way analysis of variance.

In the present experiment, the factor, communicational modality, had two levels: visual subjects and auditory subjects. The second factor, VTR feedback, had four levels: video alone, audio alone, audio and video, and neither audio nor video.

Results

An analysis of variance of the Z transformed Q-sort data (Table 6) revealed a close, but not significant ($F = 3.76$; $df = 1/72$; $p < .10$) effect for groups, a nonsignificant treatment effect ($F = 1.65$; $df = 3/72$; $p > .05$) and a nonsignificant groups X treatment interaction effect ($F = .81$; $df = 3/72$; $p > .05$). The results shown in Table 7 did not support the hypotheses, at least not if the .05 level of significance is utilized. However, in analyzing the data it was obvious that the groups' effect ($F = 3.76$) very nearly approached significance at the .05 level. For example, in Graph 1 it can be seen that almost all of the auditory groups had higher mean values than the visual groups. The overall mean for the auditory Ss was 946.8 as opposed to 813.5 for the visual Ss; thus, the auditory Ss had higher correlations on the pre-and-post test Q-sorts.

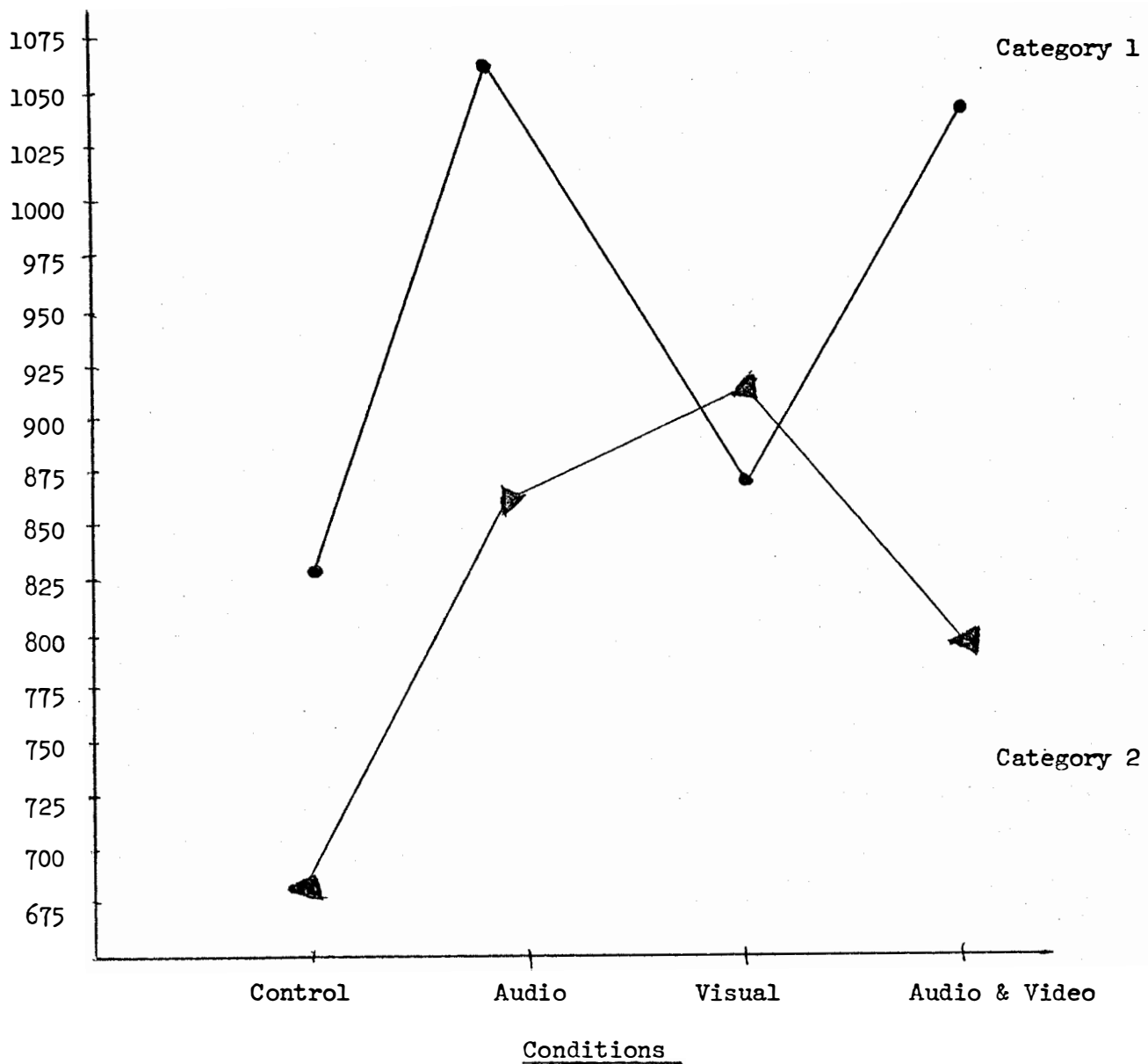
Discussion

The results of this experiment did not support its specified hypotheses; however, it would appear that Grinder and Bandler's theory of how people differ in their communicational modalities might prove plausible. Both visual and auditory Ss scored differently on the Q-sort, nearly approaching statistical significance ($p < .10$). A one in ten chance of this occurrence appears to warrant further attention and possibly investigate the reasons as to why the value was not more significant.

The auditory subjects changed their Q-sorts less than did the visual Ss. The only exception in the pattern being the video condition which resulted in a higher mean for the visual group, but by only 41.8 (See Table 7).

Table 6Analysis of Variance Table

Source	SS	df	MS	F	P
Total	7.85E+6	79	99388.7		
A (Type of feed-back)	466974.0	3	155658.0	1.65	N.S.($>.05$)
B (Category of <u>S</u>)	355378.0	1	355378.0	3.76	N.S.($<.10$)
AB Interaction	229416.0	3	76472.1	.81	N.S.($>.05$)
Within Cell	6.79E+6	72	94443.6		

Graph 1Profiles of Simple Effects For Feedback Conditions

Category 1 = Auditory Subjects

Category 2 = Visual Subjects

Table 7Mean Z-Scores for Groups

Group	n*	Subjects	
		Auditory	Visual
Control	20	825.2	682.8
Audio Only	20	1052.3	862.1
Video Only	20	871.4	913.2
Audio & Video	20	1038.1	795.7
Overall Mean	40	946.8	813.5

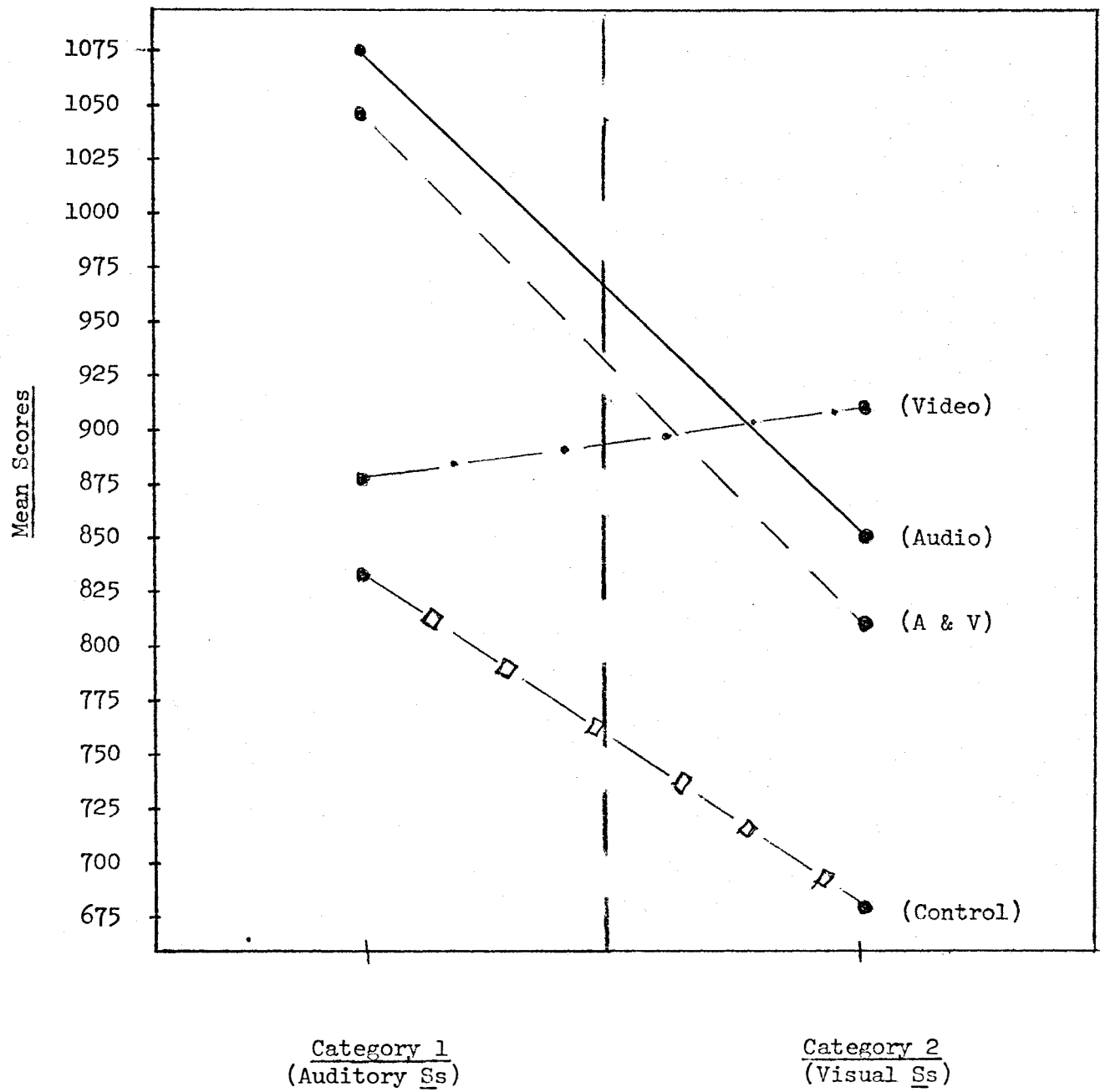
*n = number of subjects in groups
 (10 in each group)
 (80 total)

Further support for this contention can be seen in Graph 2 which again shows higher mean Z scores for the auditory Ss as opposed to the visual subjects, with the only exception being the video condition.

Both graphs 1 and 2 show a very definite pattern consisting of higher scores for auditory Ss to lower scores for visual Ss . Moreover, only the video alone condition for visual Ss did not follow the pattern; their scores were higher than the corresponding group of auditory Ss . If the video alone group of visual Ss had followed the pattern of the other groups the expected value would have occurred somewhere between 725-775. Furthermore, it is interesting to note that the auditory Ss ' highest mean value was in the audio alone condition and the visual Ss ' highest mean score occurred in the video alone condition. Thus another pattern arises in that the feedback procedure most similar to the predominant modality procured the highest mean scores (1052.3 for the audio alone auditory Ss and 913.2 for the video alone visual Ss).

Although not statistically significant, it appeared as though the visual subjects, as a whole, were more susceptible to the pressures of the group sessions and the feedback procedures in alteration of their self-awareness, as measured by the Q-sort. This is evident by the lower Q-sort scores obtained by the visual Ss . The lower scores are an indication of low correlations between their pre-and-post test Q-sorts. In other words, they changed their responses more than did the auditory subjects. The reasons for this occurrence are beyond the realm of the present study. However, there appeared to be very obvious characteristic differences between

Graph 2

Profiles of Simple Effects For Categories

the two groups. For instance, the auditory subjects, as a whole, were rather quiet, nervous, introverted, conservative, and rarely questioned the reasons behind the group exercises. On the other hand, the visual Ss appeared rather extroverted, loud, confident, often questioning, and they even seemed to dress more casually than the auditory Ss. The visual Ss appeared to have a care-free, "who cares" type of attitude, while the auditory Ss were more staid and wanted to make a good impression on each other.

The F value of 3.76 nearly reached significance, and it is contended that the value would have done so if not for certain weaknesses in the experimental design. For instance, possible contributors to the lower than desirable F value could have been related to low inter-judgmental reliability, lack of an objective, second classificatory device, and a criteria too low for percentage of predicates. Considering these three weaknesses and yet still achieve an F of 3.76 suggests that there is a definite difference between the auditory and visual subjects in terms of their Q-sort scores.

One factor that might have contributed to the lower F value was the lack of reliability in the mode of transcription of the initial interview tape recordings (reliability = .70). An inter-judgmental reliability of 70% does not seem adequate enough to discriminate between subjects on the basis of their predicates alone. A higher reliability percentage would have been more desirable in that more accurate distinctions could have been made.

Another reason the F value was slightly low might have been related to the fact that only one device of classification was used, that being the number of predicates. Perhaps if an additional, more objective device had been utilized, the classification system may have been more sensitive. Grinder and Bandler (1976) state that certain people will focus on different locations when asked thought-provoking questions. For instance, a visual person usually stares up and to the right and an auditory person quite often stares down and left. Perhaps, in future experiments, an objective device such as videotape equipment could be used to measure the percentage of eye movements, thus, adding a more objective measure to the existing one of designation of predicates by way of an interpreter. Furthermore, the criteria of 51% of the predicates was probably too low and consequently contributed to the low F value. A higher percentage of at least 75% should have been set as the criteria in order for a specific modality to be called predominant in an individual.

It seems plausible to conclude that if these three weaknesses in the experimental design (low inter-judgmental reliability, lack of an objective, second classificatory device, and a criteria too low for percentage of predicates) had been corrected, the F value might possibly have reached the .05 or lower level of significance. If future experiments were to correct these deficiencies it is quite probable that a statistically significant difference would occur. Clinicians, such as Grinder, Bandler and many others have theorized this; it is not up to future studies to further test these observations

in the laboratory.

The results also indicated that there was no difference between feedback procedures and communicational modalities ($F = 1.65$; $p > .05$). This finding suggested that there was probably no therapeutic value in using contrasting videotape procedures for people of different communicational orientations. The implication being that all types of videotape feedback are probably equally effective as therapeutic techniques. Although videotape playback is beneficial, it appears that audio and video alone are equally as effective in facilitating self-awareness as audio and video combined.

Grinder and Bandler (1976) do not appear to have empirical proof that people really differ along the three communicational modalities (visual, auditory, kinesthetic); however, the present experiment strongly suggests a difference exists and only requires the correct experimental procedure to discover it. The clinical experiences of Grinder and Bandler and their associates suggests that these differences do indeed exist. This is not to say that one must classify a person as either totally visual or totally auditory, only that there may be a predominance toward one or the other. Consequently, in order to effectively establish a better and faster rapport, it is beneficial to the clinician that he realize his patient's communication orientation.

Summary

Results of this study approached statistical significance ($F = 3.76$; $p < .10$). There appeared to be a difference between the 40 auditorily classified subjects and the 40 visually classified subjects.

It was suggested that three main weaknesses in the experimental design contributed to the low F value. For instance, low inter-judgmental reliability (.70), lack of an objective, second classificatory device, and a low criteria for percentage of predicates (51%), all quite probably contributed to the nonsignificant groups' F value. However, it was pointed out that even though these three weaknesses were apparent, the F value was still rather high (3.76), thus, suggesting a significant difference does exist and can probably be found when the weaknesses in the experimental design are eliminated.

There were no significant differences between the various feedback procedures in this study and it was concluded that any of these procedures are acceptable when utilizing videotape as a therapeutic intervention technique. In the present experiment, only one group session was utilized and there was probably too little time or actual therapy involved to benefit from this type of intervention. However, the literature does support the contention that videotaped feedback is a very beneficial supplement to therapy. Moreover, there was no significant group X treatments interaction effect. There was very little overlap between the groups; thus, suggesting the homogeneity of the 40 subjects in each respective group.

The data suggested that Grinder and Bandler's theory of different communicational modalities does exist in individuals. Even though the .05 level of statistical significance was not reached, the two groups differed ($p < .10$) with only a .22 difference between the obtained F value of 3.76 and the needed F of 3.98. It is contended that if future studies are done in this area, and they are needed, then the designs should be organized so as to eliminate the specific weaknesses cited.

It appears very probable that people differ in terms of their communicational modalities. The data seemingly pointed out, on the basis of predicates alone, that people can tentatively be categorized in certain modality orientations. The therapist experiencing difficulty in establishing rapport or progressing with therapy need only analyze the patient's modality predominance and make an effort to correspond in that same modality. The clearer and more empathic relationship which results between therapist and patient can do nothing but benefit both the clinician and the patient.

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APPENDICES

Appendix ATable 1Q-Sort Items

1. In group situations people perceive me as a likeable person.
 2. I am perceived as intelligent in groups.
 3. I come across as easygoing and carefree in groups.
 4. People perceive me as very masculine (feminine) in groups.
 5. I become anxious when I deal with the leader of the group.
 6. I tend to suppress my emotions in groups.
 7. I am usually worried when in a group situation.
 8. With others in the group I usually try to fill a dominant role.
 9. It is very difficult for me to tolerate any strong feelings of anger in myself while in a group.
 10. I tend to view the group as hostile.
 11. I seem to be able to understand and empathize with other group members.
 12. My behavior is immature when I'm in a group.
 13. I react to others in a passive manner in group situations.
 14. I am very confident while in a group.
 15. I actively seek affection while in a group.
 16. I do best in groups where things are spelled out.
 17. I feel lonely in groups.
 18. In group situations I tend to want things to be neat and orderly.
 19. I tend to be rebellious in a group situation.
 20. My mood is fairly even and consistent in groups.
 21. I don't trust others in the group.
 22. People perceive me as withdrawn and uninvolved in group situations.
 23. Sometimes I get very confused when in a group.
-

Appendix ATable 1 (cont.)

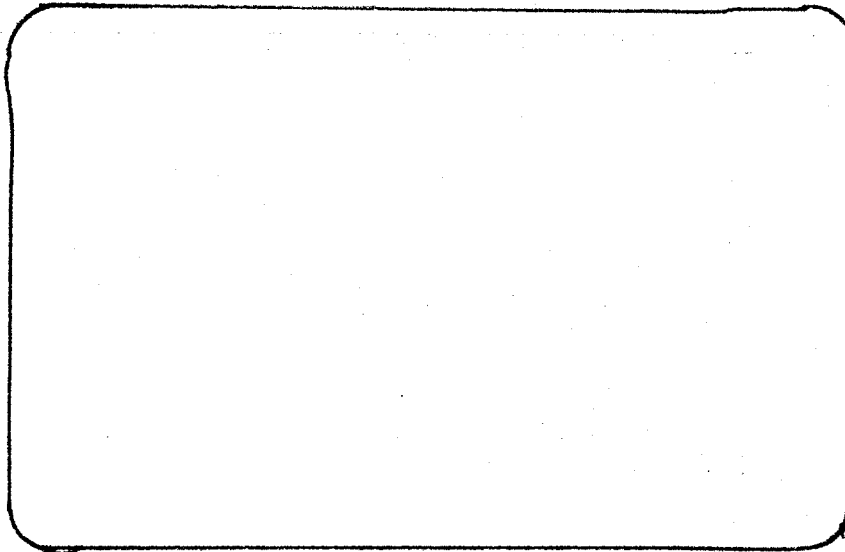
-
24. I am experienced as being an assertive person by other group members.
 25. I am experienced as being hostile toward people in groups.
 26. People perceive me as childish in group situations.
 27. I am perceived as a passive person by other group members.
 28. People perceive me as being a loner in group situations.
 29. People experience me as a meticulous person in groups.
 30. I am perceived as an aggressive person when in groups.
 31. I am usually picked as the leader when in a group.
 32. People perceive me as being friendly in group situations.
-

Appendix B

Table 2

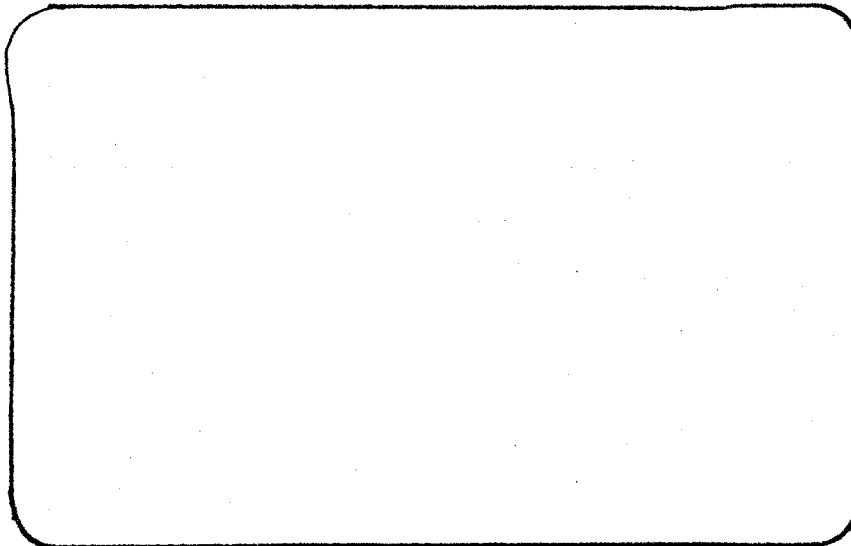
Distribution Sheet

Pile 7



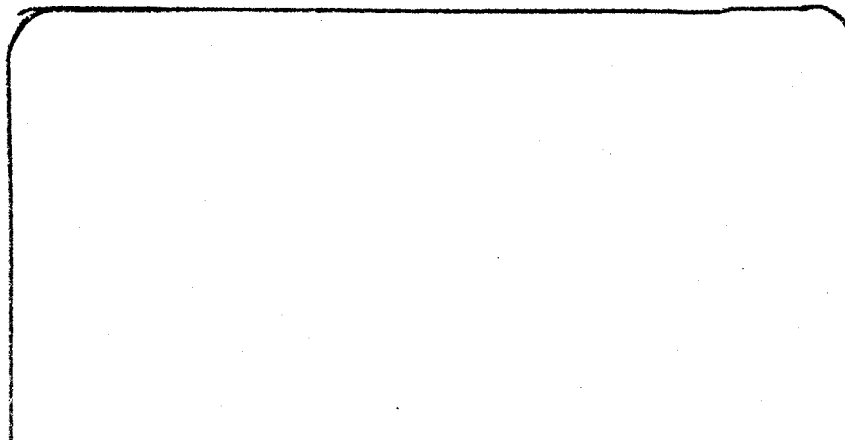
2 Cards
(Most Like)

Pile 6



4 Cards
(Quite like)

Pile 5

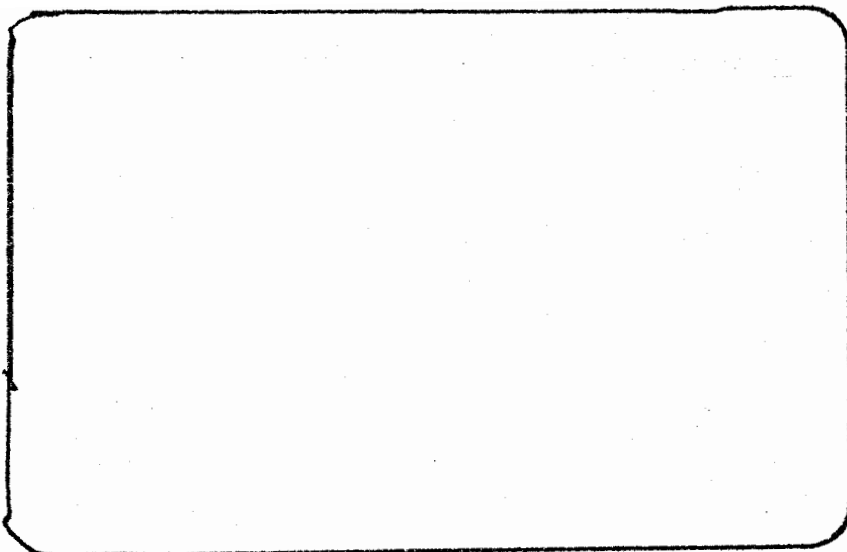


6 Cards
(Somewhat like)

Appendix B

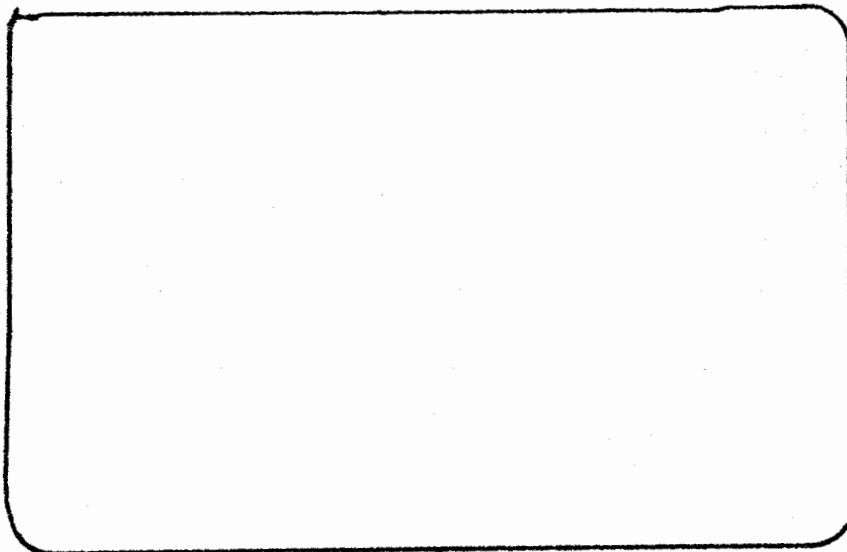
Table 2

Pile 4



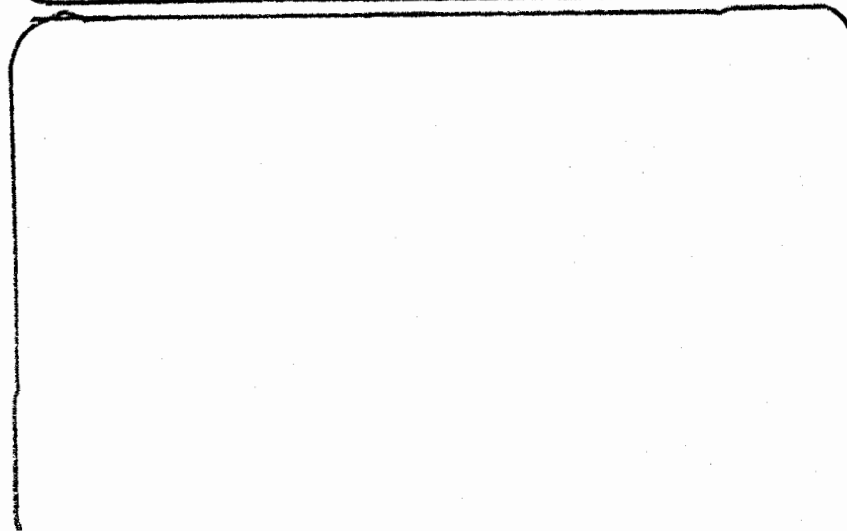
8 Cards
(Neutral)

Pile 3



6 Cards
(Somewhat unlike)

Pile 2

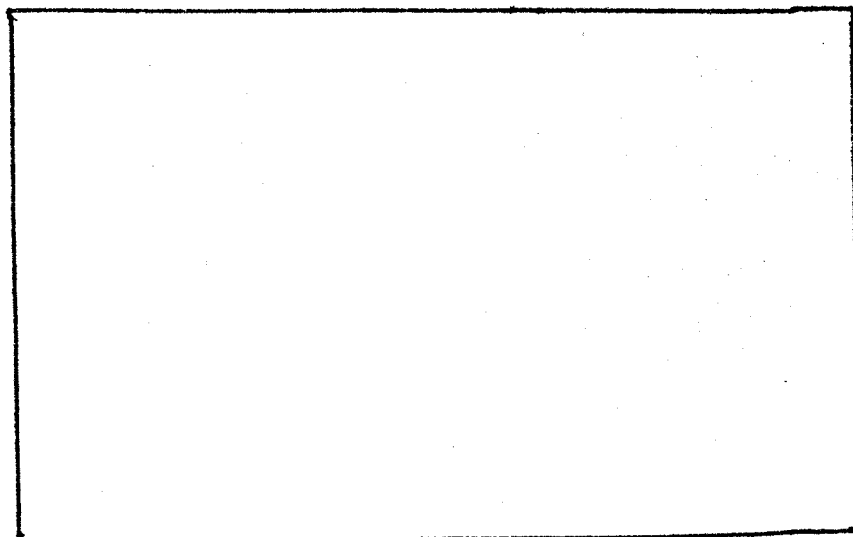


4 Cards
(Quite unlike)

Appendix B

Table 2

Pile 1

A large empty rectangular box with a black border, intended for a table. The interior of the box is completely blank.

2 Cards
(Most Unlike)

Appendix CTable 4Sample Interview Questions

1. General probing questions were asked first; such as:
 - a. Where do you live?
 - b. What do your parents do?
 - c. What are your career plans?
 - d. What are your hobbies?
 2. After ten minutes of the above general questions; more specific questions, as follows, were asked:
 - a. How do your friends react to you most of the time?
 - b. How do you come across to others?
 - c. How do I come across to you?
 - d. What are you experiencing now?
-

Appendix D

Table 5

Data Grid and Formula Used to Calculate
Pre-and Post Group Q-Sort Correlations

Name _____

Conditions A: Pre-Group Q-Sort

B: Post-Group Q-Sort

	A	B	d ²
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____
11.	_____	_____	_____
12.	_____	_____	_____
13.	_____	_____	_____
14.	_____	_____	_____
15.	_____	_____	_____
16.	_____	_____	_____

	A	B	d ²
17.	_____	_____	_____
18.	_____	_____	_____
19.	_____	_____	_____
20.	_____	_____	_____
21.	_____	_____	_____
22.	_____	_____	_____
23.	_____	_____	_____
24.	_____	_____	_____
25.	_____	_____	_____
26.	_____	_____	_____
27.	_____	_____	_____
28.	_____	_____	_____
29.	_____	_____	_____
30.	_____	_____	_____
31.	_____	_____	_____
32.	_____	_____	_____

$$r_{AB} = 1 - \frac{\sum d^2}{2N \text{Sigma}^2}$$

$$d = (A - B)^2$$

Appendix DTable 5 (cont.)

A = Weighted Pre-group Q-sort items

B = Weighted Post-group Q-sort items

Forced Q-Sort Distribution

Items least like

Items most like

2	4	6	8	6	4	2	No. of items
1	2	3	4	5	6	7	Item weight