



This dissertation is dedicated to all the people who love me. It's the simple truth that it couldn't have gotten done without you.

I would also like to acknowledge the special contribution of my friend Bob H., who told me, "You're only as smart as you are honest."

Anna Shouse

## TABLE OF CONTENTS

CHAPTER		PAGE
1	STATEMENT OF THE PROBLEM . . . . .	1
2	REVIEW OF THE LITERATURE . . . . .	6
	Definitions of Nonverbal Communication . . . . .	6
	The Relationship of the Verbal and Nonverbal Modes . . . . .	7
	Research Supporting the Dominance of Nonverbal over Verbal Cues. . . . .	9
	Research Not Supporting the Dominance of Nonverbal over Verbal Cues. . . . .	14
	Cognitive Complexity Research . . . . .	25
	Summary . . . . .	27
3	METHODOLOGY AND PROCEDURES . . . . .	28
	Preparation of the Stimulus Material. . . . .	28
	Procedure for Validation of the Stimulus Material . . . . .	32
	Results of Validation of Stimulus Material. . . . .	34
	Procedures for Experiment 1 and Experiment 2. . . . .	40
	Measures. . . . .	42
4	REPORT OF RESULTS. . . . .	45
	Experiment 1: Friendly/Unfriendly Videotapes . . . . .	45

	MANOVA of Bipolar Scales. . . . .	45
	Content Analysis of Essay Responses .	47
	Experiment 2: Enthusiastic/Bored Videotapes . . . . .	53
	MANOVA of Bipolar Scales. . . . .	53
	Content Analysis of Essay Responses .	55
5	DISCUSSION OF RESULTS. . . . .	61
	Discussion of the Findings. . . . .	61
	Cognitive Complexity and the Weighting of Cues . . . . .	63
	The Importance of Situational Realism . . . . .	64
	Implications for Future Research. . .	64
	Conclusion. . . . .	67
	APPENDIX A . . . . .	68
	APPENDIX B . . . . .	76
	APPENDIX C . . . . .	84
	BIBLIOGRAPHY . . . . .	92

LIST OF TABLES

Table		Page
1	Design of Experiment 1 - Friendly/Unfriendly Videotapes. . . . .	29
2	Design of Experiment 2 - Enthusiastic/Bored Videotapes. . . . .	30
3	Mean Ratings of Scripts in Experiment 1 . . . . .	35
4	Mean Ratings of Silent Videotapes in Experiment 1. . . . .	37
5	Mean Ratings of Scripts in Experiment 2 . . . . .	38
6	Mean Ratings of Silent Videotapes in Experiment 2. . . . .	39
7	Summary of Analyses of Variance on Bipolar Scales, Experiment 1. . . . .	46
8	Mean Impressions of Target Person on Five Bipolar Scales, Experiment 1. . . . .	48
9	Categorization of Essay Responses, Experiment 1 . . . . .	50
10	Categorization of Essay Responses, Experiment 1 . . . . .	52
11	Summary of Analyses of Variance on Bipolar Scales, Experiment 2. . . . .	54
12	Mean Impressions of Target Person on Five Bipolar Scales, Experiment 2. . . . .	56
13	Categorization of Essay Responses, Experiment 2 . . . . .	58
14	Categorization of Essay Responses, Experiment 2 . . . . .	59

## Chapter 1

### Statement of the Problem

Imagine if you will the following situations--

(A) Your friend John, shoulders sagging, mouth turned down, eye lids drooping, reports in a leaden voice, "I feel so depressed today."

(B) Your friend John, shoulders sagging, mouth turned down, eye lids drooping, reports in a leaden (and nonsarcastic) voice, "I feel so happy today."

(C) Your friend John, shoulders squared, mouth turned up in a wide grin, eyes sparkling, reports in a lilting voice, "I feel so happy today."

(D) Your friend John, shoulders squared, mouth turned up in a wide grin, eyes sparkling, reports in a lilting (and nonsarcastic) voice, "I feel so depressed today."

Would you interpret John's message about his feelings in situation (A) in the same way that you would interpret his message in situation (B)? How about your interpretations of his message in situations (C) and (D)?

According to researchers Albert Mehrabian and Michael Argyle, who say that "actions speak louder than words," you would. These researchers report that the meaning of a message is carried almost totally by the nonverbal cues. When verbal cues contradict nonverbal

cues, they assert, the receiver of the message ignores or discounts the verbal cues, giving them little if any weight in their interpretation. Based on Mehrabian's and Argyle's work it has been commonly accepted in much of the communication literature that when verbal cues conflict with nonverbal cues within a given message, the meaning attributed to that message will be more heavily influenced by the nonverbal than by the verbal mode.

There are many studies, however, which do not replicate these findings. Mark Knapp (1980) cites several of these. His summary reveals that experiments investigating the verbal/nonverbal relationship show varied results, thereby casting doubt on the "reliance on nonverbal cues in contradictory situations theory," (Knapp, 1980, p. 12). Studies cited by Knapp show that some people rely more on the nonverbal mode while other people rely more on the verbal mode for the meaning of the message. Other people do not respond so much to the mode of the message as to its valence.

Knapp (1980, p. 11) further asserts that in theorizing about the verbal/nonverbal relationship we must not treat verbal and nonverbal cues as if they were disjoint from each other. He states, "Nonverbal communication cannot be studied in isolation from the total communication process. Verbal and nonverbal

communication should be treated as a total and inseparable unit." Michael J. Nolan (1975, Hanneman, p. 98) echoes Knapp's theoretical stance. He states, "A view of communication which postulates two discrete channels overlooks an important system-feature of the process of human communication: messages consist of the interaction between modes or channels." Nolan has developed a model of the communication process which shows the independent operation of subsystems and their subsequent integration into the final message form. This final form results from the interaction of all the elements in the process.

An earlier research study conducted by this author is consistent with Knapp's and Nolan's views. It was found that subjects utilized material from both the verbal and nonverbal modes when attributing meaning to the message. In particular, when the negative quality was carried in the nonverbal mode, subjects tended to combine the verbal and nonverbal cues and attempt an explanation of the discrepancy, whereas when it was carried in the verbal mode, subjects tended to accept the verbal behavior as proof of the speaker's real feelings. Only a very small percentage of subjects ever mentioned the nonverbal behavior by itself. The strength of the findings from this study coupled with

their divergence from the commonly held view warranted further inquiry into this problem.

The present study is just such an inquiry. It attempted to replicate the findings of the previous study, while extending the stimulus messages to include attributes different from those used in that study. Two experiments, utilizing different operationalizations of the variables, were conducted. This study also investigated how an individual differences variable, cognitive complexity, influences the way that incongruent messages are dealt with.

It was expected that:

1. Both verbal and nonverbal modes of expression would be reflected in analysis of subjects' responses as measured on bipolar scales. Furthermore, it was expected that the amount of variance accounted for by the verbal and nonverbal modes would be nearly equal.
2. Subjects high in cognitive complexity would be more likely to attend to both verbal and nonverbal modes of expression than would those low in complexity.
3. Content analysis of subjects' replies to an essay question would show that they attended to both verbal and nonverbal cues in a

contradictory message. In addition, it was expected that highly complex subjects would be especially likely to attempt an explanation of the verbal/nonverbal discrepancy, while low complex subjects would either not attempt an explanation or would mention a material from only one mode.

## Chapter 2

### Review of Literature

In this chapter we will discuss definitions of nonverbal communication, the relationship of the verbal and nonverbal modes, research supporting the dominance of nonverbal over verbal cues, research not supporting the dominance of nonverbal over verbal cues, and cognitive complexity research.

#### Definitions of Nonverbal Communication

Broadly, nonverbal communication may be defined as communicative behavior which is not symbolic. It is generally divided into several descriptive categories as follows. Ekman and Friesen (1969, pp. 49-98) cite five types of body motion or kinesic behavior--emblems, illustrators, affect displays, regulators, and adaptors. Ruesch and Kees (1956, p. 40) note the importance of physical characteristics such as physique, general attractiveness, and physiognomy. Ashley Montague (1971)

raised awareness of the communicative importance of touch in his book Touching: The Human Significance of the Skin. G.L. Trager (1958, pp. 1-12) was one of the first researchers to deal with paralanguage or the vocal cues which surround speech behavior. According to Trager paralanguage includes voice qualities such as pitch, tempo, and resonance, and vocalizations such as crying, laughing, "um", and "ah". To Edward T. Hall (1959) we owe notice of proxemics, that is, human spatial behavior, and chronemics, the use of time. Ruesch and Kees (1956, pp. 89-161) gave early citations of the impact of artifacts, personal objects such as eyeglasses, jewelry, and clothes and of environmental factors such as furniture, architectural style, and lighting conditions.

In sum then we have the nonverbal categories of kinesics, physical characteristics, touch, paralanguage, proxemics, chronemics, artifacts, and environmental factors.

#### The Relationship of the Verbal and Nonverbal Modes

Many authors discuss the complementarity of the verbal and nonverbal modes. Michael Argyle, in his article "Human Social Interaction" (1972, p. 254), states that linguists seldom appreciate that the meaning

of a sentence is greatly affected by paralinguistic cues which provide the appropriate groupings and stresses. Similarly he goes on to show that kinesics can affect verbal meaning by pointing to people or objects, providing emphasis, giving illustrations of shapes or movements, or commenting on the utterance. In Social Interaction (1969, pp. 70-71) Argyle states, "Some of the most important findings in the field of social interaction are about the ways that verbal interaction needs the support of nonverbal communications."

Paul Ekman (1965) has given the field of nonverbal study an oft-cited list of the specific ways that verbal and nonverbal communication are interrelated. According to this classification, nonverbal behavior can repeat, contradict, substitute for, complement, accent, or regulate verbal behavior.

Michael J. Nolan's (1975) model of the communication process emphasizes the interrelationship of verbal and nonverbal communication. It emphasizes the role played by behaviors in various channels in the production of a complete message, showing how the communication is a result of all of these behaviors. Nolan stresses that communication is not only what is said, but how it is said.

Mark Knapp (1980, p. iv) adamantly states in the introduction to his text the following, "The Isolation Myth views the nonverbal system as an entity distinct and isolated from the total system of human communication. Although this book focuses almost exclusively on these nonverbal processes the reader is reminded that they are inextricably bound up with verbal and contextual aspects of communication. The separation is artificial because in actual daily interaction verbal and nonverbal systems are interdependent."

It can be seen from the works cited above that researchers widely recognize the interdependence of the verbal and nonverbal modes. Verbal and nonverbal communication are each seen as providing necessary elements in the construction of a message.

#### Research Supporting the Dominance of Nonverbal over Verbal Cues

Mehrabian and Wiener (1967) studied the inconsistent communication of attitude in the verbal and nonverbal components of a message. Three degrees of attitude (positive, neutral, and negative) communicated verbally by single words were each combined with three degrees of attitude communicated by voice tone in a tape recorded message. Pre-judging had established a score

for words and voice tones in isolation. When rating each stimulus on a 7 point positive to negative bipolar scale subjects were instructed to either pay attention to voice tone only, verbal content only, or to tone and content. The results obtained from an analysis of variance indicated that under "content only" instructions, the effects of content were significant, under "tone only" instructions effects were significant for ratings of one actor, and under "tone and content" instructions, the effects for content were not significant, while the effects of tone were significant for ratings of one actor.

A 1967 study by Mehrabian and Ferris, employing methodology similar to the Mehrabian and Wiener study, examined the effects of three degrees (positive, neutral, negative) of facial expression and vocal cues superimposed on a neutral word. Photographs of actresses' faces were used in combination with a tape recording. Results of an analysis of variance showed that there were main effects for facial and vocal components.

Mehrabian stated in his 1971 book, Silent Messages, "Generalizing, we can say that a person's nonverbal behavior has more bearing than his words on communicating feelings or attitudes to others." The

acceptance of nonverbal dominance over verbal cues in inconsistent messages appears in many basic communication texts and in popular literature, as well as in research (Egan, 1975; Patton and Giffin, 1981; Brooks and Emmert, 1976; Millar and Millar, 1976; Argyle, 1972; Malandro and Barker, 1983; Psychology Today, 1968).

Argyle et al. (1970) conducted an experiment which confirmed Mehrabian's findings. In this study subjects were rating videotaped messages in which verbal and nonverbal cues for Inferior, Equal, and Superior were varied and combined in a 3 X 3 factorial design. Actors in the videotapes spoke 20-second speeches in which they implied these three interpersonal attitudes toward the subjects viewing the tapes. Subjects rated their impressions of the speaker on ten bipolar scales which measured the impact that the actor's communication had on the subjects themselves. An analysis of variance showed that there were main effects for verbal cues on six of the scales, with main effects for nonverbal cues on all ten of the scales. Also reported were five significant interaction effects between verbal and nonverbal cues. However, the percentage of the variance accounted for by nonverbal cues was much greater than that accounted for by verbal cues.

Graves and Robinson (1976) conducted an analogue study of the effect of inconsistent counselor communications on client proxemic behavior and ratings of counselor genuineness. Nonverbal behaviors included eye contact, trunk lean, body orientation, and leg positioning. Verbal content reflected either high or low levels of empathic understanding. Subjects participated in a 15 minute role-play of a standard complaint with a confederate male counselor who was communicating either contradictory or consistent verbal and nonverbal messages. They were randomly assigned to one of four experimental conditions (++ , -- , NV+/V- , NV-/V+). An analysis of variance performed on the two dependent measures showed that subjects in the inconsistent conditions stayed significantly farther away from the counselor than did subjects in the consistent conditions. In addition subjects in the NV-/V+ condition maintained the greatest distance, even greater than in either the -- condition or the NV+/V- condition. This indicates the prominent role played by the nonverbal channel in determining the total meaning of a message.

A study by Tyson and Wall (1983) also investigated the effects of inconsistent verbal and nonverbal counselor behavior. Subjects viewed one of four videotapes of a role-played counseling session in which counselor behavior was systematically varied as to responsiveness-unresponsiveness. The tapes included all four possible combinations of verbal and nonverbal behaviors. The dependent measures consisted of three self-report rating scales which were used to rate the participants' perceptions of the counselor's empathy and genuineness (Barrett-Lennard Relationship Inventory), and expertness (Counselor Rating Form), and their willingness to refer others or seek help themselves from this counselor (a referral questionnaire created for this study). It was hypothesized that either type of inconsistent behavior would result in higher subject ratings than would consistently unresponsive behavior. It was also hypothesized that there would be significant differences between the two types of inconsistent behavior. One way analyses of variance showed that the -V/+NV tape was rated significantly higher than the -- tape, while the +V/-NV tape showed no statistical difference from the -- condition. On ratings of empathy, expertness, and willingness to refer others, the counselor was rated significantly higher in the -V/+NV

condition than in the +V/-NV. This was not true however for genuineness or for willingness to seek help for oneself. These results suggest that the nonverbal component of a message does indeed have a strong effect on the total message.

#### Research Not Supporting the Dominance of Nonverbal over Verbal Cues

Shapiro (1966) had judges view ten-minute videotapes of actual non-stress counseling interviews and rate the expressed pleasantness or unpleasantness of the interviewee's feelings on a 9 point scale. Judges were assigned to view the tapes in one of three conditions: video and audio, video only, or audio only. Analysis of correlations between channels suggested that both sets of cues were used in the attributions of judges viewing the tape in the video and audio condition.

A study by Beier and Stumpf reported by Dean Barnlund (1968) demonstrated that verbal and nonverbal cues work together to create an impression of a speaker. Subjects observed in sequence the voices, the gestures, the facial expression, and finally the interactional behavior of unknown persons. Subjects' ratings, taken after each set of cues was revealed, showed that impressions of the strangers shifted as each additional

series of cues became available. The interaction of the cues through further and further revelations had a strong effect on the subjects' perceptions.

Bugental, Kaswan, and Love (1970) compared the adequacy of a linear versus an interactive model in accounting for the interpretation of conflicting communication. Acted videotaped messages containing conflicting inputs (friendly or unfriendly) in the verbal and nonverbal channels were shown to subjects. The scripts were single sentences, such as, "You did a fine job." Subjects were given a list of eleven adjectives and were told to select the one which best described the behavior that they saw in each scene. An analysis of variance indicated the presence of significant channel interaction, which appeared to be due to a strong tendency to be influenced by the negative element, regardless of the channel in which it appeared. The authors concluded that a linear model was inadequate in accounting for the integration of conflicting messages.

Vande Creek and Watkins (1972) constructed a tape series in which each 20-second tape segment portrayed a conflict in degree of stress between the verbal and nonverbal modes. Subjects rated each segment on a single nine point Calm - Stressed bipolar scale. When ratings were correlated with verbal and nonverbal

criteria established by pre-test judges, results indicated that different subjects exhibited a differential preference for verbal or nonverbal cues.

McMahan (1977) contended that subjects would respond differently to a stimulus when instructed to give their impression of the speaker rather than a rating of what the speaker said. She noted that Argyle's and Mehrabian's studies had investigated subjects' impressions of the speaker rather than their reaction to the speaker's message. McMahan hypothesized that subjects would rely more on nonverbal cues when making person-relevant constructions while relying more on verbal cues in making message-relevant constructions. McMahan's stimulus materials were very similar to those used in the Argyle study. Her dependent measures were of two types--essay responses and bipolar rating scales. Each measure was administered to subjects twice, once to assess their attitudes toward the speaker, and once to assess their attitudes toward the message. Analysis of variance of the bipolar scales showed no significant differences in subjects' impressions of the speaker and the message, thus the hypothesis was not supported by the responses on the rating scales. However, McMahan did find significant differences when content analyzing subjects' essay responses. In the essays, subjects

relied more on nonverbal cues when making person-relevant constructions and on verbal cues when making message-relevant constructions. Thus her hypothesis was partially supported, indicating that there is not a generalized dominance of nonverbal cues, but that that dominance is affected by constraining factors.

Bentz (1973) showed subjects one of four videotapes of a man and a woman interacting. The man's verbal and nonverbal behaviors were systematically varied, while the woman's behaviors remained constant. Dependent measures consisted of a set of 10 bipolar scales which assessed the man's attitudes toward the woman and the subjects' attributions of the man's inner state, and essay responses in which subjects wrote their impressions of the man. Analysis of variance of the bipolar scales showed that on no scales did nonverbal cues dominate the subjects' impression of the man. Six scales showed significant main effects for both verbal and nonverbal cues plus significant interactions of verbal and nonverbal cues. Two scales showed significant main effects for verbal cues with no interaction effects, while one showed a main effect for verbal cues with a V X NV interaction. Bentz interpreted her findings as an indication that both modes of communication influenced subjects' judgments.

Shouse-Broome (1977) conducted a study containing two experiments. Experiment 1 used a set of 4 videotapes of a role-played conversation which varied the assertiveness of one actress' verbal and nonverbal cues while holding the other actress' responses constant. Experiment 2 used the same design but varied the actress' cheerfulness. Subjects were asked to rate the actress on bipolar scales and also to write an essay response which assessed their impression of her. Analysis of variance performed on the bipolar scales from Experiment 1 showed that subjects relied more heavily on the verbal than the nonverbal mode. Of the seven scales, three showed significant main effects for verbal only while the remaining four showed significant effects for verbal and nonverbal. Content analysis of subjects' essay responses to the incongruent tapes showed that the majority of subjects used information from both the verbal and nonverbal modes when writing their impressions. The results from Experiment 2 showed main effects for verbal and nonverbal cues on four of the five scales as well as significant V X NV interaction effects. These results seemed to indicate a negativity effect, that is, whenever negative cues were given off by the actress she was perceived negatively despite the mode in which they were present. An

analysis of the content of the essay responses showed that the majority of subjects mentioned material from both modes. Of the subjects that mentioned material from only one mode, that mode was the verbal. No subjects mentioned material from the nonverbal mode only. Overall, the findings from this study indicated that there is a strong tendency for interpretations of incongruent communications to be affected by both sets of cues. There was no indication of nonverbal dominance.

Domangue (1978) conducted a study in which trained confederates interacted with subjects in one of four stimulus conditions. Positivity of verbal and nonverbal cues was varied systematically across the four situations. There were two dependent measures, one a set of 7-point Likert scales rating the stimulus person on the dimensions of interest, activity, warmth, and involvement, and a rating scale measuring the subject's attitude about the stimulus person's behavioral consistency. Domangue also investigated the effects that two individual differences variables, cognitive complexity and tolerance of ambiguity, had on subjects' perceptions. Analysis of variance on the Likert scales showed significant V x NV interactions, as well as significant main effects for both verbal and nonverbal

cues. A negativity effect seemed to be present. When the verbal cues carried the negative message, the overall interpretation of the message was negative. There was also a significant difference in consistency ratings. Subjects were more aware of the inconsistency in the confederate's behavior when the verbal message was positive than when it was negative. Effects of level of cognitive complexity and level of tolerance of ambiguity on utilization of inconsistent nonverbal cues were not detected by the analyses of variance. The hypothesis that simple and intolerant subjects are less sensitive to nonverbal information that is inconsistent with the verbal message failed to be confirmed.

Claiborne (1979) conducted a study which investigated how the verbal interventions and nonverbal behavior of the counselor contributed separately and together to perceptions of the counselor and to the counselor's ability to influence the client. Verbal and nonverbal cues were varied systematically along different dimensions. Verbal cues were either restatements or interpretations made by the counselor, while nonverbal cues were either responsive or unresponsive. The stimuli were presented to subjects in the form of a videotaped role play. Perceptions of the counselor were measured by the Counselor Rating Form, a

semantic differential instrument measuring perceived expertness, trustworthiness, and attractiveness. Counselor's perceived influence on the client was measured by a semantic differential scale constructed for this experiment. Analyses of variance showed that there were significant main effects for nonverbal, as well as significant interaction effects, for perceptions of the counselor on all three dimensions. There were also significant main effects for verbal on two of the dimensions--trustworthiness and expertness. No significant differences were found for counselor influence. Thus, both the nonverbal and the verbal behavior of the counselor were powerful determinants of subjects' perceptions. The interaction effects show that subjects' perceptions are a joint function of verbal and nonverbal behavior.

A 1980 study by Reade and Smouse systematically varied the positivity of verbal and nonverbal counselor behaviors along with counselor response orientation (cognitive, affective, or confrontive) in role played videotapes. Two dependent measures were used: subjects' perceptions of the counselor's attitude of regard for the client (Barrett-Lennard Relationship Inventory) and subjects' perceptions of counselor effectiveness (Counselor Effectiveness Scale). The

overall pattern of results indicates that the relative impact of the nonverbal component may best be conceptualized in conditional terms and as contingent on the particular kind of response orientation being used by the counselor. A factorial ANOVA was performed on the scores of each dependent measure. For each dependent measure a significant main effect for verbal and nonverbal was found along with a significant 3-way interaction. Nonverbal cues seemed to dominate only when the counselor was using the confrontive response orientation.

A more naturalistic study conducted by Hill et al. (1981) examined the relationship of counselor nonverbal communication to counseling outcome. Forty counseling dyads were videotaped during 30-minute sessions and were judged by raters as to congruence of the verbal and nonverbal channels. These ratings were then correlated with counseling outcomes as measured by the Counselor Rating Form and the Counseling Evaluation Inventory. Results showed that counselor congruence as opposed to positiveness or negativeness of cues was positively related to counselor facilitativeness as perceived by the counselor him/herself and as perceived by the client. These results suggest that the effects of nonverbal communication cannot be examined in isolation.

It is rather the relationship between the verbal and nonverbal channels, their congruence, which affects counseling outcomes.

Nagata, Nay, and Seidman (1983) had subjects act as quasi clients, presenting a personal problem to an interviewer as if they were attending a first appointment at a counseling center. Interviewers were instructed to conduct an initial 30 minute interview. The interviews were videotaped and the interviewer's verbal and nonverbal behaviors coded by judges. After the interview subjects rated their counselor on the Counselor Effectiveness Inventory. Multiple correlations were computed using both nonverbal and verbal cues to assess the relative contributions of nonverbal versus verbal scores in predicting CES scores. No significant multiple correlations emerged from these analyses. Analyses were then conducted using nonverbal and verbal behaviors as separate sets of predictors to measure the contribution of each particular set of predictors to CES variance, independent of the influence of the other set of predictors. No statistically significant multiple correlations were found between nonverbal behaviors and CES scores, though marginally significant correlations were found between verbal behaviors and CES scores. Nonverbal behaviors accounted

for less of the variance than verbal behaviors in the prediction of CES scores. Only verbal behaviors emerged as predictive of two subscales of the CES. Discriminant analyses were conducted to see if nonverbal predictiveness improved by including only those interviewers with extreme scores. Significant discriminant functions occurred only for verbal behaviors and total CES scores. Thus the results of this study do not indicate in any way the predominance of nonverbal cues. The authors feel that their study suggests that without experimental manipulation, the predictive relationship between nonverbal and verbal behaviors becomes much more complex. Data revealed that subject ratings were best predicted when both nonverbal and verbal cues were considered.

In summary, many studies clearly indicate that verbal cues by themselves or verbal cues in interaction with nonverbal cues have a strong influence on the perceptions of respondents. All of the studies reviewed here have more naturalistically operationalized independent variables than did the original Mehrabian studies which used only single word stimuli and photographs, and the Argyle et al. study which used 20 second taped segments as stimulus material. Nagata, Nay, and Seidman (1983) have suggested that the earlier

findings of nonverbal superiority are not generalizable to more ecologically valid settings. The Graves and Robinson (1976) study and the Tyson and Wall (1983) study, did, however use stimulus material similar to the studies which did not find nonverbal dominance. These studies were primarily concerned with the differences between inconsistent conditions and consistent conditions, postulating that inconsistency itself would prove to be disconcerting to clients. This was found to be true, suggesting that subjects do not simply pay attention to nonverbal cues to the total exclusion of verbal cues when there is an inconsistency. In this sense these studies do not support a generalized reliance on nonverbal cues. These studies did however find that the V+/NV- stimuli were perceived more negatively than the V-/NV+ stimuli. The authors interpreted this finding as evidence for strength of the nonverbal channel. It could as well be viewed as an interaction between negativity and the nonverbal channel rather than as simply the strength of nonverbal cues.

#### Cognitive Complexity Research

Cognitive complexity has been demonstrated to be an individual differences variable which has a strong effect on the manner in which impressions are formed.

Crockett (1965,p. 49) defines cognitive complexity in the following manner, "A cognitive system will be considered relatively complex when (a) it contains a relatively large number of elements (constructs) and (b) the elements are integrated hierarchially by relatively extensive bonds of relationships."

Cognitive complexity has, in particular, been shown to affect the manner in which inconsistent information received about a stimulus person is handled. Subjects high in complexity are more likely to integrate inconsistent information (use the relational mode) than are those low in complexity (Nidorf and Crockett, 1965; Rosenkrantz and Crockett, 1965).

Crockett, Mahood, and Press (1975) conducted a study which varied the nature of set toward a speaker while also considering the complexity of the subjects. They found that low complex subjects formed unintegrated impressions in either set, whereas high complex subjects tended to form highly organized, integrated impressions in either set.

Thus, in the present study we would expect that those subjects who do not attempt use of the relational method in resolving inconsistency are those who are cognitively simple.

### Summary

A review of the literature on incongruent communication leads us to conclude that there is considerable evidence that nonverbal cues do not generally dominate over verbal cues. Several noted nonverbal communication theorists strongly assert that we would expect to find subjects utilizing both the verbal and nonverbal modes in forming impressions since the two sets of cues are inextricably linked. In addition, the literature indicates that we would expect cognitively complex more than cognitively simple subjects to explain the discrepancy between the verbal and nonverbal messages.

## Chapter 3

### Methodology and Procedures

The present study utilized two different sets of operationalizations for the verbal and nonverbal cues. In Experiment 1 the communicative cues portrayed friendliness and unfriendliness. In Experiment 2 the cues portrayed enthusiasm and boredom. Within each of these experiments the effect of subjects' cognitive complexity on the impressions formed of the actor was investigated. Thus the study consisted of two 2 X 2 X 2 factorial experiments. Diagrams of the design of the experiments may be found in Tables 1 and 2. The factors were: (1) verbal cues (friendly vs. unfriendly or enthusiastic vs. bored), (2) nonverbal cues (friendly vs. unfriendly or enthusiastic vs. bored), and (3) cognitive complexity (high vs. low).

#### Preparation of the Stimulus Material

The independent variables were operationalized by making two sets of four videotapes each. The tapes for Experiment 1 utilized the concepts friendly and unfriendly; the tapes for Experiment 2 utilized the concepts enthusiastic and bored. The same female actresses were used for all tapes.

TABLE 1. DESIGN OF EXPERIMENT 1 - FRIENDLY/UNFRIENDLY VIDEOTAPES

		<u>Nonverbal Mode</u>	
		<u>Friendly Cues</u>	<u>Unfriendly Cues</u>
<u>Verbal Mode</u>	<u>Friendly Cues</u>	Friendly Congruent Hi Complex Ss N = 7	NV-U/V-F Hi Complex Ss N = 8
		Friendly Congruent Lo Complex Ss N = 9	NV-U/V-F Lo Complex Ss N = 3
	<u>Unfriendly Cues</u>	NV-F/V-U Hi Complex Ss N = 6	Unfriendly Congruent Hi Complex Ss N = 8
		NV-F/V-U Lo Complex Ss N = 9	Unfriendly Congruent Lo Complex Ss N = 7

N = 57

TABLE 2. DESIGN OF EXPERIMENT 2 - ENTHUSIASTIC/BORED VIDEOTAPES

		<u>Nonverbal Mode</u>	
		<u>Enthusiastic Cues</u>	<u>Bored Cues</u>
<u>Verbal Mode</u>	<u>Enthusiastic Cues</u>	Enthusiastic Congruent Hi Complex Ss N = 8	NV-B/V-E Hi Complex Ss N = 10
		Enthusiastic Congruent Lo Complex Ss N = 5	NV-B/V-E Lo Complex Ss N = 8
	<u>Bored Cues</u>	NV-E/V-B Hi Complex Ss N = 3	Bored Congruent Hi Complex Ss N = 5
		NV-E/V-B Lo Complex Ss N = 11	Bored Congruent Lo Complex Ss N = 12

N = 62

In each experiment two tapes showed congruent verbal and nonverbal cues, while two showed incongruent cues. Synonyms for the key words friendly-unfriendly and enthusiastic-bored, were found in Webster's Seventh New Collegiate Dictionary (1971). The words and their synonyms were used in constructing the verbal portions of the stimulus material. Within each pair of scripts care was taken that the verbal material reflected similar content, differing only where the key trait words were used. The text Nonverbal Communication in Human Interaction (1978) by Mark L. Knapp was consulted in order to develop appropriate nonverbal cues.

For Experiment 1 the behaviors used to denote friendliness were smiles, leaning towards the other, sitting with arms and legs uncrossed to denote openness and receptivity, facing the other, and keeping steady eye contact with the other. The unfriendly behaviors used were frowns, sitting back in chair away from the other, sitting with arms and legs crossed to denote closedness and unreceptivity, turning sideways to the other, and having minimal eye contact with the other. In Experiment 2, the enthusiastic behaviors used were smiles, expansive hand gestures, body shifting to denote an energetic demeanor, eye contact, and vigorous head nods. The bored behaviors used were yawns, minimal hand

gestures, keeping limbs close to the body, minimal body movements, very slow movements, and little eye contact. A copy of the scripts may be found in Appendix A along with a listing of the nonverbal behaviors used in the videotapes.

In each of the four tapes the actresses were allegedly subjects waiting to take part in another experiment who were chatting while they were waiting for their turn. Throughout the tape the camera was focused on the actress who was exhibiting the target verbal and nonverbal behaviors. The knees and arms of the secondary actress were visible at all times though her face was never shown or shown only fleetingly. The secondary actress' conversational contributions were kept to the lowest feasible level, so that the conversation was primarily carried by the main actress.

#### Procedure for Validation of the Stimulus Material

A preliminary study utilizing fifty subjects was conducted to check the verbal and the nonverbal content of the videotapes. These subjects were enrolled in introductory courses in Communication Studies at the University of Kansas. Subjects received course credit for their participation. This check was done in order to insure that each mode was actually carrying the desired message. Four groups of 10 to 15 subjects each

participated in this validation study. The procedure was the same for each group.

Upon entering the experimental room the subjects were asked to read and sign the Informed Consent Statement required by the University of Kansas Academic Committee on Human Experimentation. They were told that they were participating in a study which was concerned with initial interactions between people. The stimulus material was presented as if it were recordings and transcripts of interactions between subjects in another experiment who were chatting while waiting for their experiment to begin. Each subject was then given a measurement packet consisting of one script from each experiment and two sets of bipolar rating scales, one appropriate to each script. The order in which the scripts were presented in the packets was varied systematically. The subjects were instructed to read the first script and to rate their impression of the main speaker using the appropriate set of bipolar scales. They then repeated this for the second script. For the second part of the procedure subjects watched all eight of the videotapes without the sound. After viewing each tape they used the appropriate set of bipolar scales to rate their impression of the main actress basing their perceptions on her nonverbal cues.

The subjects were instructed to take each tape on its own merits and not to allow what they had seen in one tape to influence their ratings of another tape. The subject groups saw the tapes in alternating order (the first group saw the tapes in 1 - 8 order, the second group in 8 - 1 order, etc.).

### Results of Validation of Stimulus Material

#### Experiment 1- check of the verbal content.

Nineteen subjects read the script in which the content was friendly while thirty-one read the script in which the content was unfriendly. A two-tailed t test performed on each of the five bipolar scales showed that there were significant differences at the .001 level between the two means on each of the scales. The means of the ratings fell near the appropriate anchors of the scales. Table 3 shows the means and significance levels.

Experiment 1- check of nonverbal content. This check was obtained by having all 50 subjects view each of the videotapes without the sound. A one-way repeated measures analysis of variance was performed on each of the five bipolar scales. It showed that there were significant differences at the .001 level between the means on each of the scales. The means of the ratings

TABLE 3. MEAN RATINGS OF SCRIPTS IN EXPERIMENT 1

<u>Bipolar Scales</u>	<u>Unfriendly Script</u>	<u>Friendly Script</u>	<u>F</u>
Disagreeable - Agreeable	-1.91	1.28	138.77***
Cold - Warm	-2.09	0.79	110.46***
Unfriendly - Friendly	-1.85	1.40	117.07***
Hostile - Affectionate	-1.77	0.57	58.68***
Closed - Open	-1.10	1.04	17.14***

\*\*\*p < .001

fell near the appropriate anchors of the scales.

Table 4 shows the means and significance levels.

Experiment 2- check of verbal content. Twenty-seven subjects read the Enthusiastic transcript while twenty-three subjects read the Bored transcript. A two-tailed T test performed on each of the five bipolar scales showed that there was significant differentiation between the Enthusiastic and Bored transcripts on each of the scales at the .001 level of significance. All of the means were on the expected ends of the scales.

Table 5 shows the means and significance levels.

Experiment 2- check of nonverbal content. This check was obtained by having all 50 subjects view each of the videotapes without the sound and rate their perceptions on the bipolar scales. A one-way repeated measures analysis of variance was performed and showed differences at the .001 level of significance. The means fell near the appropriate anchors of the scales.

Table 6 shows the means and significance levels.

Summary. The checks indicated strongly that the verbal scripts for each set of tapes were suitably constructed and that the nonverbal behaviors were appropriate to the attitudes they were to portray irrespective of the verbal content of the tapes.

TABLE 4. MEAN RATINGS OF SILENT VIDEOTAPES IN EXPERIMENT 1

<u>Bipolar Scales</u>	<u>Nonverbal Unfriendly</u>		<u>Nonverbal Friendly</u>		<u>F</u>		
	<u>V-Unfriendly</u>	<u>V-Friendly</u>	<u>V-Unfriendly</u>	<u>V-Friendly</u>	<u>NV Variations</u>	<u>V Variations</u>	<u>V X NV Interaction</u>
Disagreeable-Agreeable	-1.82	-2.27	1.47	1.78	601.14***	0.03ns	9.92ns
Cold-Warm	-2.04	-2.4	1.24	1.74	715.39***	0.29ns	9.41ns
Unfriendly-Friendly	-1.56	-1.92	1.01	1.71	323.72***	1.09ns	9.40ns
Hostile-Affectionate	-1.49	-1.98	0.91	1.27	358.55***	0.00ns	6.20ns
Closed-Open	-1.63	-2.18	1.67	1.91	499.42***	0.82ns	5.84ns

\*\*\*p < .001

TABLE 5. MEAN RATINGS OF SCRIPTS IN EXPERIMENT 2

<u>Bipolar Scales</u>	<u>Bored Script</u>	<u>Enthusiastic Script</u>	<u>F</u>
Listless - Energetic	-2.44	2.04	145.93***
Bored - Enthusiastic	-2.44	2.03	144.96***
Passive - Active	-2.19	1.96	218.45***
Apathetic - Excited	-2.68	1.85	172.40***
Dull - Lively	-2.56	1.76	134.10***

\*\*\*p < .001

TABLE 6. MEAN RATINGS OF SILENT VIDEOTAPES IN EXPERIMENT 2

<u>Bipolar Scales</u>	<u>Nonverbal Bored</u>		<u>Nonverbal Enthusiastic</u>		<u>F</u>		
	<u>V-Bored</u>	<u>V-Enthusiastic</u>	<u>V-Bored</u>	<u>V-Enthusiastic</u>	<u>NV Variations</u>	<u>V Variations</u>	<u>V X NV Interaction</u>
Listless-Energetic	-2.24	-1.73	2.21	2.20	766.68***	1.90ns	0.68ns
Bored-Enthusiastic	-2.26	-1.94	1.87	1.96	743.40***	2.35ns	0.46ns
Passive-Active	-1.82	-1.54	2.10	2.24	794.88***	3.88ns	2.04ns
Apathetic-Excited	-2.07	-1.78	1.84	2.04	724.87***	4.63ns	0.55ns
Dull-Lively	-1.92	-1.70	2.05	2.12	810.10***	0.97ns	0.30ns

\*\*\*p < .001

## Procedures for Experiment 1 and Experiment 2

Subjects. One hundred twenty students enrolled in the introductory speech classes at the University of Kansas, Fall 1979, were used as subjects for these experiments. Students received course credit for their participation. Fifty-seven subjects were used in Experiment 1 and sixty-three were used in Experiment 2.

Procedures. Subjects were scheduled to participate in the two experiments in sixteen different groups ranging from 12 - 18 subjects each. Each tape was therefore viewed by 2 different groups of subjects.

Upon entering the experimental room, subjects were requested to read and sign the required Informed Consent Statement. Subjects were then given the cover story. They were told that the experiment was being conducted to study the initial interactions between people. It was explained to them that they would view a videotape of some people who had been subjects in another experiment. The people in the tape, the subjects were told, had unbeknownst to them, been filmed while they were passing the time waiting for their "experiment" to begin.

After the cover story had been given, it was explained that we wanted subjects to view the tape and then to fill out some forms and rating scales about what

they saw. Subjects were told that before they viewed the tape we wanted them to fill out a questionnaire concerning their impressions of people in general. This was the Role Category Questionnaire, a measure of cognitive complexity.

When the subjects had completed the Role Category Questionnaire, the group was shown one of the eight videotapes. Each tape was randomly selected for viewing by a particular group. After viewing the tape, subjects wrote an essay response to the following question, "What do you think the woman in the videotape was feeling?" They were given ten minutes to write and then were asked to stop. Next they were given a form containing five bipolar scales. They were asked to mark each bipolar scale by putting an X on the scale in the place which best indicated how they perceived the woman in the videotape. The scales which were presented to the subjects had the adjective pairs varied as to whether the positive or the negative adjective came first. These were adjusted in the reporting of results in order to give a uniform valence to the scores.

When they had completed rating the bipolar scales the subjects were fully debriefed as to the true nature of the experiment. Any questions they had were answered by the experimenter. Copies of the experimental

procedure, the Informed Consent Statement, the cover story, and the debriefing may be found in Appendix B.

### Measures

Three types of measures were used in the study:

Role Category Questionnaire. This asked subjects to describe, in turn, someone they liked and then someone they disliked. Subjects were given five minutes for each description. Subsequently, the number of concepts used in each description was ascertained. High and low complexity categories were identified by ranking those scores and dividing them at the median. An initial scoring of the inventories was made by the investigator. Two independent judges categorized a random sample of the inventories as a reliability check. The percentage of agreement between their scores and that of the investigator were 80.0% and 90.0% respectively.

Content analysis of impressions. Subjects spent 10 minutes describing what they thought the woman in the videotape was feeling. Only the responses of subjects viewing the incongruent tapes were analyzed. The responses were categorized according to whether subjects did or did not mention both verbal and nonverbal cues. Thus, there were two major categories with two subcategories each into which responses were placed:

Mentions Material From Both Modes and Mentions Material From One Mode Only. In the first category responses were further divided into Attempts Explanation of Incongruity and No Attempt. In the second category they were divided into Verbal Only and Nonverbal Only. The initial categorization was made by the investigator. Two independent judges categorized a random sample of responses as a reliability check. The percentage of agreement between their scores and that of the investigator was 70.6% and 76.5% respectively.

Responses to bipolar scales. A different set of bipolar scales was used for each videotape. The adjectives chosen for the scales were selected from definitions of the key labelling terms friendly-unfriendly and enthusiastic-bored. For friendly-unfriendly these were: Disagreeable-Agreeable, Cold-Warm, Unfriendly-Friendly, Hostile-Affectionate, and Closed-Open. For enthusiastic-bored these adjectives were: Listless-Energetic, Bored-Enthusiastic, Passive-Active, Apathetic-Excited, and Dull-Lively. These definitions were taken from Webster's Seventh New Collegiate Dictionary (1971). A MANOVA was conducted on each set of the bipolar scales. In addition, the univariate measure of association was computed in order

to determine the amount of variance accounted for by each type of communicative cue.

A copy of each of these measures may be found in Appendix C.

## Chapter 4

### Report of Results

The results of two experiments are presented in separate sections. In both, the results will be presented in two parts--MANOVA of bipolar scales, and content analysis of essay responses.

#### Experiment 1: Friendly/Unfriendly Videotapes

##### MANOVA of Bipolar Scales

The summary of the analysis of variance on the bipolar scales is shown in Table 7. Contrary to expectations subjects' scores on the measure of cognitive complexity did not affect their responses to these scales, though complexity did interact with nonverbal on the subscale Friendly-Unfriendly ( $p .05$  for all other subscales). Therefore, cognitive complexity has been dropped from the summary of the analysis of variance.

From Table 7 note that the results for each subscale were remarkably similar. Except for the Closed-Open judgments, there were significant main effects for both independent variables and their interactions. One may also note that except for one

TABLE 7 SUMMARY OF ANALYSES OF VARIANCE ON BIPOLAR SCALES, EXPERIMENT 1

Source of Variance	df	Disagreeable-Agreeable			Cold-Warm			Unfriendly-Friendly			Hostile-Affectionate			Closed-Open		
		MS	F	Assoc	MS	F	Assoc	MS	F	Assoc	MS	F	Assoc	MS	F	Assoc
Nonverbal Behavior (N)	1	36.38	19.97***	29	72.27	54.74***	53	88.67	48.75***	50	39.34	28.68***	37	96.45	28.03***	36
Verbal Behavior (V)	1	62.93	34.54***	41	25.62	19.41***	28	45.51	25.02***	34	18.32	13.36***	21	0.90	0.26	---
Cognitive Complexity(C)	1	1.11	.61	---	0.05	0.03	---	1.46	0.81	---	0.19	0.14	---	2.22	0.64	---
NXV	1	14.90	8.18*	.14	17.28	13.09**	21	19.43	10.68*	18	19.64	14.32**	.23	0.01	0.00	---
NXC	1	0.36	0.20	---	1.25	0.95	---	8.67	4.77*	---	0.38	0.28	---	0.49	0.14	---
VXC	1	0.48	0.26	---	0.33	0.25	---	1.60	0.88	---	0.01	0.00	---	4.07	1.18	---
NXVXC	1	0.06	0.03	---	2.19	1.66	---	1.15	0.63	---	0.69	0.50	---	0.34	0.10	---

\*\*\*p &lt; .001

\*\*p &lt; .01

subscale (Disagreeable-Agreeable), the nonverbal variations accounted for somewhat more of the variance than verbal ones. Over the five subscales, the average univariate association was .41 for variations in nonverbal behavior and .25 for variations in verbal behavior.

The implications of these effects are made clearer by an examination of individual cell means. Table 8 presents the individual cell means for all five subscales. For all subscales except Closed-Open, it is clear that any indication of unfriendliness, whether in the person's words or nonverbal behavior, led to inferences that the person was quite unfriendly. In the only exception, Closed-Open, the person's nonverbal behavior was the only significant cue affecting subjects' responses. Even in this condition the most positive judgments were reserved to the person whose verbal behavior was also positive. Clearly, then, subjects' judgments reflected attention to both verbal and nonverbal cues. Furthermore, unfriendly behavior, either verbal or nonverbal, produced inferences that the person was unfriendly.

#### Content Analysis of Essay Responses

Although for the sake of uniformity in procedure all subjects answered the open ended question, only the

TABLE 8 MEAN IMPRESSIONS OF TARGET PERSON ON  
FIVE BIPOLAR SCALES, EXPERIMENT 1<sup>1</sup>

A Disagreeable - Agreeable				B Cold - Warm			
<u>Nonverbal</u>				<u>Nonverbal</u>			
	Friendly	Unfriendly	Mn		Friendly	Unfriendly	Mn
	Friendly	1 31	-1 42 <sub>B</sub>		Friendly	1 19	-2 17 <sub>B</sub>
<u>VERBAL</u>	Unfriendly	-1 87 <sub>A</sub>	-2 50 <sub>AB</sub>	<u>VERBAL</u>	Unfriendly	-1 33 <sub>A</sub>	-2 50 <sub>AB</sub>
	Mn				Mn		

  

C Unfriendly - Friendly				D Hostile - Affectionate			
<u>Nonverbal</u>				<u>Nonverbal</u>			
	Friendly	Unfriendly	Mn		Friendly	Unfriendly	Mn
	Friendly	1 81	-1 75 <sub>B</sub>		Friendly	0 69	-2 17 <sub>B</sub>
<u>VERBAL</u>	Unfriendly	-1 00	-2 57 <sub>B</sub>	<u>VERBAL</u>	Unfriendly	-1 73 <sub>A</sub>	-2 21 <sub>AB</sub>
	Mn				Mn		

  

E Closed - Open			
<u>Nonverbal</u>			
	Friendly	Unfriendly	Mn
	Friendly	1 19	-1 67
<u>VERBAL</u>	Unfriendly	0 87	-1 71
	Mn		

<sup>1</sup> A common lower-case letter in cells from the same row or a common upper-case letter in the same column indicates that a difference is not statistically significant

responses of those viewing an incongruent videotape were analyzed. Of interest was how the subject dealt with the incongruity--did he/she utilize information from only the verbal or the nonverbal channel, or did he/she use information from both modes? If the latter method was used, did the subject attempt to explain the disparity or did he/she simply acknowledge both without any attempt to reconcile them? Also of interest was how the cognitive complexity of the subjects affected their method of impression formation. It was expected that most subjects would mention material from both modes and that highly complex subjects would be the individuals who attempted an explanation of the discrepancy, while low complex subjects would account for those who mentioned both modes but did not attempt an explanation and for those who mentioned material from only one mode.

Because of the relatively small number of cases, subjects in the two incongruent conditions were combined for these analyses. Table 9 presents the number of subjects whose responses fell in each of four categories. These categories are: Mentioned Both Sets of Information (subdivided into Attempted Explanation vs. No Explanation) and Mentioned Only One Set (subdivided into Verbal Only or Nonverbal Only). Of the 26 subjects, 19 (or 73.1%) mentioned both the verbal and

TABLE 9. CATEGORIZATION OF ESSAY RESPONSES, EXPERIMENT 1

	<u>Mentions Both Sets of Information</u>		<u>Mentions One Set Only</u>		Total Number of Responses
	Attempted Explanations	No Explanation	Nonverbal Only	Verbal Only	
	13 (50.0%)	6 (23.10%)	3 (11.5%)	4 (15.4%)	26
TOTAL	73.1%		26.9%		100%

nonverbal sets of information. This confirms that subjects did utilize information from both sets of cues in forming their impressions. Of the 7 (or 26.9%) subjects who mentioned material from only one mode 4 mentioned only the verbal material while 3 mentioned only nonverbal material.

As may be seen in Table 10, as expected, more subjects high in complexity than those low attempted to explain the inconsistency between the verbal and nonverbal. However, contrary to expectations, about the same number of subjects high in complexity as those low mentioned material from only one set of cues.

In summary, the results of Experiment 1 show confirmation of expectations on both the bipolar scales and the essay responses. Subjects attended to both sets of cues when forming their impressions of the stimulus person, although nonverbal variations accounted for somewhat more of the variance than did verbal variations. It is notable also that any evidence of unfriendliness, either verbal or nonverbal, produced inferences that the person was unfriendly. Cognitive complexity influenced subjects' ability to explain the incongruity in the essay responses but did not prove to be significant on the bipolar scales ratings.

TABLE 10. CATEGORIZATION OF ESSAY RESPONSES, EXPERIMENT 1

Cognitive Complexity	<u>Type of Response</u>				Total Number of Responses
	<u>Mentions Both Sets of Information</u>		<u>Mentions One Set Only</u>		
	Attempted Explanations	No Explanation	Nonverbal Only	Verbal Only	
High	9 (34.6%)	1 (3.8%)	1 (3.8%)	3 (11.5%)	14
Low	4 (15.4%)	5 (19.2%)	2 (7.7%)	1 (3.8%)	12
Total	13	6	3	4	26

52

<u>Cognitive Complexity</u>	<u>Attempts Explanation</u>	<u>None</u>	<u>Total</u>
High	9	5	14
Low	4	8	12
Total	13	13	26

$$\chi^2 = 2.48$$

## Experiment 2: Enthusiastic/Bored Videotapes

### MANOVA of Bipolar Scales

The summary of the analysis of variance on the bipolar scales is shown in Table 11. Contrary to expectations, subjects' scores on the measure of cognitive complexity did not affect their responses to these scales, though complexity did interact with verbal on the subscale Apathetic-Excited ( $p < .05$  for all other subscales). Therefore, cognitive complexity has been dropped from the summary of the analysis of variance.

From Table 11 note that 4 of the 5 subscales show significant main effects for both verbal and nonverbal behavior. Two of these also show significant verbal X nonverbal interactions. The remaining subscale, Listless-Energetic, shows a main effect for nonverbal and a significant verbal X nonverbal interaction. One may also note that on each subscale the nonverbal variations accounted for somewhat more of the variance than the verbal ones. Over the five subscales, the average univariate association was .52 for variations in

TABLE 11 SUMMARY OF ANALYSES OF VARIANCE ON BIPOLAR SCALES, EXPERIMENT 2

Source of Variance	df	Bored-Enthusiastic			Apathetic-Excited			Passive-Active			Dull-Lively			Listless-Energetic		
		MS	F	Assoc	MS	F	Assoc	MS	F	Assoc	MS	F	Assoc	MS	F	Assoc
Nonverbal Behavior (N)	1	144.69	77.42***	.59	95.74	52.22***	.49	125.08	81.10***	.60	142.04	60.24***	.53	92.43	34.59***	.39
Verbal Behavior (V)	1	47.87	25.62***	.32	24.91	13.59***	.20	24.20	15.69***	.22	21.12	8.96**	.14	1.49	0.56	---
Cognitive Complexity (C)	1	2.64	1.41	---	0.14	0.05	---	2.63	1.71	---	3.35	1.42	---	0.09	0.05	---
NXV	1	15.50	8.30*	.13	12.22	6.66*	.11	0.15	0.10	---	4.00	1.69	.03	20.81	7.79*	.13
NXC	1	0.05	0.03	---	1.36	0.74	---	0.01	0.01	---	0.21	0.09	---	1.99	0.75	---
VXC	1	0.02	0.11	---	20.00	10.90*	---	0.88	0.60	---	7.03	3.00	---	3.82	1.43	---
NXVXC	1	0.72	0.39	---	0.40	0.27	---	3.23	2.09	---	0.38	0.16	---	3.76	1.40	---

\*\*\*p &lt; .001

\*\*p &lt; .01

nonverbal behavior and .18 for variations in verbal behavior.

The implications of these effects are made clearer by an examination of individual cell means. Table 12 presents the individual cell means for all five subscales. For all subscales except Listless-Energetic, it is clear that any implication of boredom, whether in the person's words or nonverbal behavior led to inferences that the person was somewhat bored. In this exception the person's nonverbal behavior was the only significant cue affecting subjects' responses. Here we had the strange situation of the verbal positive/nonverbal negative condition being perceived more negatively than the negative congruent condition. With the exception of the results for Listless-Energetic, it is clear that subjects' judgments reflected attention to both verbal and nonverbal cues. and that any negative evidence produced a negative judgment.

#### Content Analysis of Essay Responses

Again, although all subjects answered the essay question, only the responses of those viewing an incongruent videotape were analyzed. The method of analysis and the expectations for the results were the same as those for Experiment 1.

TABLE 12 MEAN IMPRESSIONS OF TARGET PERSON ON  
FIVE BIPOLAR SCALES, EXPERIMENT 2<sup>1</sup>

		Nonverbal				Nonverbal	
		Enthusiastic	Bored			Enthusiastic	Bored
VERBAL	A Bored - Enthusiastic	2 46	-1 71	VERBAL	B Apathetic - Excited	2 00	-1 35
	Bored	-0 40	2 47		Bored	0 07	-1 94
VERBAL	C Passive - Active	2 46	-0 53	VERBAL	D Dull - Lively	1 85	-1 65
	Bored	-1 07	-1 82		Bored	0 27	-2 37
VERBAL	E Listless - Energetic	2 31	-1 35				
	Bored	1 47	-0 12				

<sup>1</sup> A common lower-case letter in cells from the same row or a common upper-case letter in the same column indicates that a difference is not statistically significant.

Because of the relatively small number of cases, subjects in the two incongruent conditions were combined for these analyses. Table 13 presents the number of subjects whose responses fell in each of four categories. These were the same as the categories used for Experiment 1. Of the 32 subjects, 25 (or 78.2%) mentioned both the verbal and nonverbal sets of information. This confirms that subjects did utilize information from both sets of cues in forming their impressions. Of the 7 (or 21.9%) subjects who mentioned material from only one mode 2 mentioned only the nonverbal material while 5 mentioned only the verbal material.

As may be seen in Table 14, contrary to expectations, no more subjects high in complexity than low attempted to explain the inconsistency between the verbal and nonverbal. Also contrary to expectations, about the same number of subjects high in complexity as those low mentioned material from only one set of cues.

In summary, the results of Experiment 2 show confirmation of expectations on both the bipolar scales and the essay responses. Subjects attended to both sets of cues when forming their impressions of the stimulus person though nonverbal variations accounted for somewhat more of the variance than did verbal

TABLE 13. CATEGORIZATION OF ESSAY RESPONSES, EXPERIMENT 2

	<u>Mentions Both Sets of Information</u>		<u>Mentions One Set Only</u>		Total Number of Responses
	Attempted Explanations	No Explanation	Nonverbal Only	Verbal Only	
	19 (59.4%)	6 (18.8%)	2 (6.3%)	5 (15.6%)	32
TOTAL	78.2%		21.9%		100%

TABLE 14. CATEGORIZATION OF ESSAY RESPONSES, EXPERIMENT 2

Cognitive Complexity	<u>Type of Response</u>				Total Number of Responses
	<u>Mentions Both Sets of Information</u>		<u>Mentions One Set Only</u>		
	Attempted Explanation	No Explanation	Nonverbal Only	Verbal Only	
High	10 (31.3%)	1 (3.1%)	0	2 (6.3%)	13
Low	9 (28.1%)	5 (15.6%)	2 (6.3%)	3 (9.4%)	19
Total	19	6	2	5	32

<u>Cognitive Complexity</u>	<u>Attempts Explanation</u>	<u>None</u>	<u>Total</u>
High	10	3	13
Low	9	10	19
Total	19	13	32

$\chi^2 = 2.78$

variations. It is notable that any evidence of boredom, whether in the verbal or nonverbal channel, produced judgments that the person was somewhat bored. Cognitive complexity, however, was not a significant factor in either the results of the bipolar scales or the essay responses.

## Chapter 5

### Discussion of Results

In this chapter the present results will be discussed in light of other findings. Implications for further research will also be presented.

#### Discussion of the Findings

Contrary to the claims of early researchers, the findings of the present study are congruent with more recent conclusions that people attend to both verbal and nonverbal cues in assessing the behavior of others. The results confirm the theoretical stance of Mark L. Knapp (1980) and Michael J. Nolan (1975) who assert that perceivers treat a message as a whole, with nonverbal and verbal components acting as a total and inseparable unit; they view the complete message as the interaction of the two channels. On both the bipolar scales and the essay questions, results showed that subjects attended to both types of cues, often attempting to explain the verbal-nonverbal inconsistency.

Perhaps the most striking observation is that any time a negative quality was present in the message, whether in the verbal or the nonverbal mode, the overall impression formed was negative. This agrees with Kanouse and Hanson (1972), whose review of negativity

research in impression formation noted that negative information has an especially strong impact on the perceiver's impression. Those authors drew the conclusion that people tend to weigh negative information more heavily than positive information. Similarly, Labbie (1973) found this to be true when lists of incongruent adjectives were used to generate an inference. A study by Bugental et al. (1970) also noted this negativity effect in the resolution of inconsistent messages; these authors concluded that the significant channel interaction found in their study was due to a strong tendency for the perceiver to be influenced by the negative element in the message regardless of the channel it was carried in. Domangue (1978) found similar evidence for a negativity effect in her research on verbal-nonverbal inconsistency.

Yet another study, Shouse-Broome (1977), found that subjects' explanations of the inconsistent videotapes often had an overall negative tone, with the positive information incorporated into negative inferences about the other person's underlying state (i.e. "She must be really depressed to have to pretend and say she's so happy."). A similar pattern was found in the present results (i.e. "She talked like she was the funnest person in the world to be with but the tone of her voice

told you different. This is what gave me the impression that she might have been covering up her true feelings at this moment. She said she didn't want to sit around and be bored with school and life but it all seemed a front for something else"). Perhaps, then, any evidence of negativity in a message is more important in determining the meaning of the message than is the mode the information is conveyed in. No doubt the reason for this negativity effect is that expression of any sort of negative feeling is socially unacceptable, so that a person would have no cause to express negative feelings unless they were a sincere reflection of that person's state. Therefore the perceiver weights the negative information heavily.

#### Cognitive Complexity and the Weighting of Cues

An individual differences variable, cognitive complexity, did not prove to be a significant influence on subjects' ratings of the bipolar scales, although in both experiments a nonsignificantly higher proportion of complex subjects than noncomplex ones attempted to explain the inconsistency in reply to the essay question. Analyses by Domangue (1978) also did not find cognitive complexity to have an influence on the impressions formed. Perhaps the overwhelming tendency

for perceivers in general to utilize all of the information in a message obviates any differences between high and low complex individuals.

#### The Importance of Situational Realism

The experiments for this study were conducted more naturalistically than the original Mehrabian studies and those of Argyle. They portrayed real people in realistic settings, behaving in a reasonably natural manner. Nagata, Nay, and Seidman (1983) have also commented that early findings of nonverbal superiority are not generalizable to more ecologically valid settings. This assertion is confirmed by several studies in which subjects interacted with confederates in a counselling situation. Nagata et al. (1983) found, for example, that subject ratings were best predicted when both nonverbal and verbal cues were considered. Hill et al. (1981) also demonstrated that the incongruence itself is the most important predictor of outcomes. In addition, Graves and Robinson (1976) found that the inconsistency itself was disconcerting to subjects, affecting their attributions.

#### Implications for Future Research

The findings of this study, along with the body of other research which does not find dominance of

nonverbal cues, seem to answer conclusively that, in general circumstances, perceivers utilize all available message cues. McMahan (1977) has, however, demonstrated that situational factors have a bearing on subjects' attention to verbal or nonverbal cues. Therefore, the most fruitful future research should examine situational, rather than individual differences factors, which affect subjects' resolutions of inconsistent messages.

Three research themes suggest themselves. First, a follow up could be conducted on McMahan's differentiation between message focus and person focus. She found that an individual is more likely to use nonverbal cues when asked to form an impression of the speaker, and verbal cues when asked to give his impression of the message. The second theme is ego involvement of the perceiver in the situation. It is possible that subjects' interpretations of messages conveyed by an actor in a videotape with whom they are uninvolved could differ significantly from interpretations they might form if they were actually conversing with someone under realistic conditions. When individuals are involved in conversation, a perceiver may feel more wary of, or more threatened by the inconsistency because it has a direct effect on

him/her. Therefore one would expect the perceiver to react even more strongly to the inconsistency, utilizing both cues more fully than in uninvolved conditions. No studies have yet been reported which employ an experimental design directly comparing naturalistic, involving presentations of a message with more detached presentations.

The third theme is investigation of the negativity effect. This is an important factor in subjects' interpretations of inconsistent messages in both studies conducted by this author. It is also present in the findings of two other experimental studies of inconsistent messages, and is theoretically sound according to research in impression formation. Experiments which compared various positive-negative bipolar concepts could be conducted to investigate the generalizability of the negativity effect. Combining degree of ego involvement with the negativity effect would also provide further insight into the effect of situational factors on resolutions of inconsistent messages. Given prior results, we would expect that the negative element of an ego-involving message would have the most impact on the perceiver, perhaps altering the perceiver's tendency to utilize both modes fully.

## Conclusion

In conclusion, the present study strongly indicates that perceivers attend to both verbal and nonverbal cues when making meaning of a message. These findings, in conjunction with a substantial body of other research, casts strong doubt on the "reliance on nonverbal cues in contradictory situations theory" (Knapp, 1980, p. 12). Therefore, future investigations should focus on determining the effect of situational factors on the interpretation of the message, rather than further investigating the influence of mode under general conditions.

APPENDIX A

FRIENDLY SCRIPT

- A. I've been in a few psych experiments before. I wonder if this will be like those?
- B. I don't know, I've never been in one before. This is just my first semester.
- A. I've been here two years myself. I like it. It's been lots of fun. How about you?
- B. Well, really I've been having a great time, you know. I've met a lot of interesting people. And I've really made a lot of new friends and it's great.
- A. That sounds good.
- B. Yeah, you know, I'm finding out that I am really a very friendly person. I mean I really like being around people a lot. And there's this group of girls in the dorm. And we just hang around together and act crazy and it's great. You know I really enjoy being with them a lot and just being friends with them.
- A. I like being around people too.
- B. You know, I'm really glad we met. I had a lot of fun talking to you. It's been neat.
- A. Yeah, well, they're calling us. We'd better go.

UNFRIENDLY SCRIPT

- A. I've been in a few psych experiments before. I wonder if this will be like those?
- B. I don't know, I've never been in one before. This is just my first semester.
- A. I've been here two years myself. I like it. It's been lots of fun. How about you?
- B. Actually I've been having a lousy time. I haven't met anybody interesting and the truth is I have never seen so many weird people in my life.
- A. There are lots of different kinds of people here for sure.
- B. I mean I am finding out that I really don't like being friendly with people. I mean I just don't enjoy being around them a lot of the time. Um, for instance, there is this group of girls in the dorm and they are so loud and I am constantly annoyed by them and I just try to avoid them.
- A. I like being around people myself.
- B. Well, talking to you hasn't been much fun, I hope the rest of the experiment is better.
- A. Well, I think they're calling us. We'd better go.

## NONVERBAL BEHAVIORS FOR FRIENDLY/UNFRIENDLY VIDEOTAPES

### Friendly Behaviors

Smiles

Leaning towards the other

Sitting with arms and legs uncrossed to denote  
openness and receptivity

Facing the other

Keeping steady eye contact with other

### Unfriendly Behaviors

Frowns

Sitting back in chair away from other

Sitting with arms and legs crossed to denote  
closedness and unreceptivity

Turning sideways to the other

Having minimal eye contact with other

ENTHUSIASTIC SCRIPT

- A. Have you ever been in an experiment like this before?
- B. No, I haven't. But I'm really excited to be here. I think it'll be pretty neat.
- A. Why?
- B. Well, it's something different and I really like doing different kinds of things. And I've never done this before and I think it'll be lots of fun.
- A. What kinds of things do you like to do?
- B. Well, for instance this semester I decided I would join the sailing club. Now I have never sailed before but you, but you get out there on the lake, and you learn how to do it you know. And there's the water and the sky and the clouds and the breeze and it's just, really neat. I just love it, you know. Something else that I do is every semester I take a class I want to take. I just do it for myself, you know, cause I really enjoy it and I like to meet different kinds of people. I like to try out different kinds of things you know. And like I said, this thing is just something different I haven't done. So I think it'll be fun.
- A. Sounds good.

B. Yeah, my philosophy of life is, why be bored?

You're only here once and you may as well enjoy it.

I'm not one to sit around and be bored - not me -  
no.

A. That sounds pretty good. I think they're calling  
us, we'd better go.

BORED SCRIPT

- A. Have you ever been in an experiment like this before?
- B. No, I haven't. I really don't want to be here. I mean, I think this is going to be incredibly dull.
- A. Why?
- B. Well, it's something different. And I like to do the things I usually do. And this is something extra. I really don't want to be putting out the energy to do this.
- A. What do you usually do?
- B. Oh, I try to keep things as routine as possible. I mean I study, I go to class, I go out with my friends sometimes and I mean, you know, it takes enough energy to do the things that I have to do. And I just don't want to put out extra effort to do other things, you know.
- A. Sounds reasonable.
- B. I mean, my philosophy of life is, that it's basically a drag. And I mean, it's boring. And I just try to get through with the minimum amount of effort possible.
- A. Lots of people feel that way. I think they're calling us. We better go.

## NONVERBAL BEHAVIORS FOR ENTHUSIASTIC/BORED VIDEOTAPES

### Enthusiastic Behaviors

Smiles

Expansive hand gestures

Body shifting to denote an energetic demeanor

Eye contact with other

Vigorous head nods

### Bored Behaviors

Yawns

Minimal hand gestures

Limbs close to body

Few body movements

Very slow movements

Little eye contact with other

**APPENDIX B**

## EXPERIMENTAL PROCEDURE

Experimenter - Please read and sign the Informed Consent Statement. The study in which you are about to participate concerns initial interactions between people. First we will have you fill out a questionnaire about your perceptions of people in general. Then we will have you watch a videotape of some people chatting and answer some questions about what you saw in the tape.

(Experimenter passes out one copy each of the Role Category Questionnaire to each subject.)

Experimenter - Please fill out the demographic data form on the front of your questionnaire putting your sex and age. Do not write your name. Look at the question at the top of your first page. (Experimenter reads it aloud.) You have five minutes to write your response to this question. Please keep writing until I call time. (Experimenter follows same procedure for the second question.)

(Experimenter takes up the questionnaires.)

Experimenter - We will now watch a brief videotape. The tape is of two women who were subjects here in

another experiment. This is the conversation they had while they were waiting for the experiment to begin. Please pay close attention to the tape.

(When the tape is over, the experimenter passes out a packet containing, in this order, a demographic data sheet, an essay question form, and the appropriate bipolar rating scale set.)

Experimenter - Please do not flip through your packet. Only turn the pages when I instruct you to do so. First fill out again the demographic data sheet. Now look at the top of your second sheet. (Experimenter reads the question aloud.) Answer about the woman in the tape who did the most talking. You have 10 minutes to write an answer to this question. Please continue writing until I call time.

(When the 10 minutes is up, the experimenter begins the final phase of the experiment.)

Experimenter - Turn to your last sheet. Here are 5 bipolar scales. On each scale mark an X in the blank which most closely shows your impression of the woman in the tape who did the most talking. This is the same woman that you answered the above questions about. (Experimenter demonstrates on the board with an example

how to mark the scales.) Mark the scales at your own speed.

(When all subjects are finished, the experimenter collects the packets, debriefs the subjects and answers any questions they might have.)

### INFORMED CONSENT STATEMENT

The Department of Speech and Drama feels that persons should participate as experimental subjects only if they choose to do so. Therefore, we wish to inform you that you may withdraw from this experiment at any point. You will in no way be penalized for withdrawing.

In this study you will be asked to fill out a questionnaire about your general perceptions of people, to view a videotape, and to answer a question and fill out some rating scales about the content in the videotape. You are not to put your names on the questionnaires. Your names will in no way be associated with the results of this study. You will be debriefed as to the nature of this study.

We encourage your participation in this study, but fully respect your right to choose not to do so.

Anna Shouse  
Principal Investigator

### COVER STORY

The study that you are participating in concerns the initial interactions between people. We want you to help us out by rating some people in videotaped interactions. The people in the videotapes were subjects in another experiment who were chatting with each other while waiting for the experiment to begin. Your job is to fill out a form about your general perceptions of people, to view a videotape, and then to answer a question and fill out some rating scales about the content of the videotapes. Please pay close attention to the videotape from the very beginning as it is rather short.

Thank you.

## DEBRIEFING

This study is concerned with what kinds of impressions people form when a message sender is giving off verbal and nonverbal cues which contradict each other. Many textbooks hold that when verbal and nonverbal cues are contradictory, people pay more attention to the nonverbal cues and discount, ignore, or minimize the verbal cues. Some previous research that I have done, as well as some other studies indicate that this is not necessarily the case. The hypothesis in the study that you have just participated in is that the positivity or negativity of the message has a great impact in determining people's impressions and that the impression is different according to which mode (verbal or nonverbal) the negative message is delivered in. For instance in my previous study when the negative message was in the verbal mode, most subjects tended to discuss only the verbal behavior, ignoring the nonverbal cues. However, when the negative message was carried in the nonverbal mode many subjects combined the verbal and nonverbal cues to form an essentially negative message but one which incorporated the positive verbal message. Maybe in the second situation which is quite common in our everyday life, people had an easy time coming up

with an explanation which could incorporate the contradiction. In the first situation though, which is uncommon, people seemed more comfortable going with the negative message.

In the present study another factor was also considered. This is the cognitive complexity of the perceiver. Cognitive complexity is a measure of the level of complexity of a person's thought system in regards to their thoughts about other people. It is not the same as intelligence. In this study it was hypothesized that the more complex perceivers would persist in combining the verbal and nonverbal cues even when the negative message was in the verbal mode.

**APPENDIX C**

SOCIAL PERCEPTION QUESTIONNAIRE

Sex: Male \_\_\_\_\_

Female \_\_\_\_\_

Our interest in this questionnaire is to learn how people describe others. We are interested in knowing, in your own terms, the characteristics which a set of individuals have--those which set one person off from another as an individual, and those characteristics which they share in common.

Our concern here is with the habits, ideas, mannerisms--in general with the personal characteristics, rather than the physical traits--which characterize a number of different people.

In order to make sure you are describing real people, we have set down a list of two different categories of people. In the blank space beside each category below, please write the initials, nicknames or some identifying symbol for a person of your acquaintance that fits that category. Be sure to use a different person for each category.

1. A person your own age and sex whom you like

---

2. A person your own age and sex whom you dislike

---

Spend a few minutes looking over this list, mentally comparing and contrasting the people you have in mind for each category. Think of their habits, their beliefs, their mannerisms, their relations to each other, any characteristics they have which you might use to describe them to other people.

If you have any questions about the kinds of characteristics we are interested in please ask them.

Do not turn the page till instructed to do so.

Thanks.

Please look back to the first sheet and place the symbol you have used to designate the person in category 1 here: \_\_\_\_\_

Now describe this person as fully as you can. Write down as many defining characteristics as you can. Pay particular attention to his/her habits, beliefs, ways of treating others, mannerisms, and similar attributes. Remember, describe him/her as completely as you can so that a stranger might be able to determine the kind of person he/she is from your description. Use the back of this page if necessary.

This person is:

Please look back to the first sheet and place the symbol you have used to designate the person in category 2 here: \_\_\_\_\_

Now describe this person as fully as you can. Write down as many defining characteristics as you can. Pay particular attention to his/her habits, beliefs, ways of treating others, mannerisms, and similar attributes. Remember, describe him/her as completely as you can so that a stranger might be able to determine the kind of person he/she is from your description. Use the back of this page if necessary.

This person is:

Think about the woman in the videotape whom the camera focused on. Imagine that you were explaining to a close friend how this woman was feeling at the time of her conversation. Write in the space below what you would tell your friend. Take about 10 minutes. Keep writing until I tell you to stop.

SCALE #1

Put an X in the blank space which most closely matches how you perceived the woman in the videotape. You will mark one X for each pair of adjectives.

AGREEABLE —|—|—|—|—|—|— DISAGREEABLE

COLD —|—|—|—|—|—|— WARM

FRIENDLY —|—|—|—|—|—|— UNFRIENDLY

AFFECTIONATE —|—|—|—|—|—|— HOSTILE

CLOSED —|—|—|—|—|—|— OPEN

SCALE #2

Put an X in the blank space which most closely matches how you perceived the woman in the videotape. You will mark one X for each pair of adjectives.

LISTLESS —|—|—|—|—|—|—|— ENERGETIC

BORED —|—|—|—|—|—|—|— ENTHUSIASTIC

ACTIVE —|—|—|—|—|—|—|— PASSIVE

EXCITED —|—|—|—|—|—|—|— APATHETIC

DULL —|—|—|—|—|—|—|— LIVELY

## BIBLIOGRAPHY

- Argyle, Michael. "Non-Verbal Communication in Human Social Interaction." Non-Verbal Communication, ed. R.A. Hinde. Cambridge, England: The University Press, 1972.
- Argyle, Michael. Social Interaction. Chicago: Aldine-Atherton, 1969.
- Argyle, Michel, et al. "The Communication of Inferior and Superior Attitudes by Verbal and Non-Verbal Signals." British Journal of Social and Clinical Psychology, 9 (1970), 222-231.
- Barnlund, Dean C. Interpersonal Communication: Survey and Studies. Boston: Houghton Mifflin Company, 1968.
- Bentz, Janet Mills, "Do Actions Speak Louder Than Words? An Inquiry Into Incongruent Communications." Unpublished Masters thesis, University of Kansas, Lawrence, Kansas, 1973.
- Brooks, William D., and Philip Emmert. Interpersonal Communication. Dubuque, Iowa: William C. Brown Company Publishers, 1976.
- Bugental, Daphne E., et al. "Perception of Contradictory Meanings Conveyed by Verbal and Nonverbal Channels." Journal of Personality and Social Psychology, 16 (1970), 647 -655.

- Claiborn, Charles D. "Counselor Verbal Intervention, Nonverbal Behavior, and Social Power." Journal of Counseling Psychology, 26 (1979), 378-383.
- Crockett, W.H. "Cognitive Complexity and Impression Formation." Progress in Experimental Research, Vol. 2, ed. B.A. Maher. New York, New York: Academic Press, 1965.
- Crockett, W.H., S. Mahood, and A.N. Press. "The Effect of Communication Situations on the Formation of Interpersonal Impressions." Presented at the Speech Communication Association, December 1971.
- Domangue, Barbara B. "Decoding Effects of Cognitive Complexity, Tolerance of Ambiguity, and Verbal-Nonverbal Inconsistency." Journal of Personality, 46 (1978), 519-535.
- Egan, Gerard. The Skilled Helper: A Model for Systematic Helping and Interpersonal Relating. Monterey, California: Brooks/Cole Publishing Company, 1975.
- Ekman, Paul. "Communication Through Nonverbal Behavior: A Source of Information About an Interpersonal Relationship," Affect, Cognition and Personality, ed. S.S. Tomkins and C.E. Izard. New York, New York: Springer 1965.

- Ekman, Paul, and W.V. Friesen. "Nonverbal Leakage and Clues to Deception." Psychiatry, 32 (1969), 88-106.
- Graves, James R., and J.D. Robinson II. "Proxemic Behavior as a Function of Inconsistent Verbal and Nonverbal Messages." Journal of Counseling Psychology, 23 (1976), 333-338.
- Hall, E.T. The Silent Language. Garden City, New York: Doubleday, 1959.
- Hill, Clara E., et al. "Nonverbal Communication and Counseling Outcome." Journal of Counseling Psychology. 28 (1981), 203-212.
- Kanouse, David E., and Reid L. Hanson Jr. "Negativity in Evaluations." Attribution: Perceiving the Causes of Behavior, eds. E.E. Jones et al. Morristown, New Jersey: General Learning Press, 1972.
- Knapp, Mark L. Essentials of Nonverbal Communication. New York, New York: Holt, Rinehart and Winston, 1980.
- Labbie, S. "Primacy-Recency Effects in Impression Formation and Congruity-Incongruity of Stimulus Material." Perceptual and Motor Skills, 37 (1973), 275-278.

- Malandro, Loretta A., and Larry Barker. Nonverbal Communication. Reading, Massachusetts: Addison-Wesley Publishing Company, 1983.
- McMahan, Eva M. "Nonverbal Communication as a Function of Attribution in Impression Formation." Communication Monographs, 43 (1976), 287-294.
- Mehrabian, Albert. "Communication Without Words." Psychology Today, (1968), 52-55.
- Mehrabian, Albert. Silent Messages. Belmont, California: Wadsworth Publishing Company, Inc., 1971.
- Mehrabian, Albert, and Susan R. Ferris. "Inference of Attitudes from Nonverbal Communication in Two Channels." Journal of Consulting Psychology, 33 (1967), 248-252.
- Mehrabian, Albert, and Morton Wiener. "Decoding of Inconsistent Communications." Journal of Personality and Social Psychology, 6 (1967), 109-114.
- Millar, Dan P., and F.E. Millar. Messages and Myths: Understanding Interpersonal Communication. New York, New York: Alfred Publishing Company, 1976.
- Montagu, M.F.A. Touching: The Human Significance of the Skin. New York, New York: Columbia University Press, 1971.

Nagata, Donna K., Robert Nay, and Edward Seidman.

"Nonverbal and Verbal Content Behaviors in the Prediction of Interviewer Effectiveness." Journal of Counseling Psychology, 30 (1983), 83-86.

Nidorf, L.J., and W.H. Crockett. "Cognitive Complexity and the Organization of Impressions of Others." Journal of Social Psychology, 66 (1965) 165-169.

Nolan, Michael J. "The Relationship Between Verbal and Nonverbal Communication." Communication and Behavior, eds. G.J. Hanneman and W.J. McEwen. Reading, Massachusetts: Addison-Wesley Publishing Company, 1975.

Patton, Bobby R., and Kim Giffin. Interpersonal Communication in Action: Basic Text and Readings, Third Edition. New York, New York: Harper and Row Publishers, 1981.

Reade Mark N., and Albert D. Smouse. "Effect of Inconsistent Verbal-Nonverbal Communication and Counselor Response Mode on Client Estimate of Counselor Regard and Effectiveness." Journal of Counseling Psychology, 27 (1980), 546-553.

Rosenkrantz, P.S., and W.H. Crockett. "Some Factors Influencing the Assimilation of Disparate Information in Impression Formation." Journal of

Personality and Social Psychology, 2 (1965), 397-402.

Ruesch, Jurgen, and Weldon Kees. Nonverbal Communication. Berkeley, California: University of California Press, 1956.

Shapiro, Jefferey G. "Agreement Between Channels of Communication in Interviews." Journal of Consulting Psychology, 30 (1966), 535-538.

Shouse-Broome, Anna S. "An Inquiry Into Attributions Made About Incongruent Communications." Unpublished Master's thesis, University of Kansas, Lawrence, Kansas, 1977.

Trager, G.L. "Paralanguage: A First Approximation." Studies in Linguistics, 13 (1958), 1-12.

Tyson, Judy A., and Shavaun M. Wall. "Effect of Inconsistency Between Counselor Verbal and Nonverbal Behavior on Perceptions of Counselor Attributes." Journal of Counseling Psychology, 30 (1983), 433-437.

Vande Creek, Leon, and J.T. Watkins. "Responses to Incongruent Verbal and Nonverbal Emotional Cues." The Journal of Communication, 22 (1972), 311-316.

Webster's Seventh New Collegiate Dictionary.

Springfield, Massachusetts: Merriam-Webster, Inc.,  
Publishers, 1971.