KUNIMOTO, Elizabeth Nakaeda, 1929-
EFFECTS OF NONVERBAL EXPERIENCES ON
INTERPERSONAL COMMUNICATION.

University of Hawaii, Ph.D., 1971
Education, guidance and counseling

University Microfilms, A XEROX Company, Ann Arbor, Michigan
EFFECTS OF NONVERBAL EXPERIENCES
ON INTERPERSONAL COMMUNICATION

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY
IN EDUCATIONAL PSYCHOLOGY

AUGUST 1971

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>v</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>vi</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II. METHOD</td>
<td>19</td>
</tr>
<tr>
<td>III. RESULTS</td>
<td>29</td>
</tr>
<tr>
<td>IV. DISCUSSION</td>
<td>41</td>
</tr>
<tr>
<td>V. CONCLUSIONS</td>
<td>50</td>
</tr>
<tr>
<td>PROPOSALS FOR FUTURE RESEARCH.</td>
<td>54</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>57</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>75</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Summary of Analysis of Variance on Method, Content, and Relationship.</td>
<td>30</td>
</tr>
<tr>
<td>2.</td>
<td>Analysis of Variance on Proxemic, Kinesic and Verbal Groups in Decrease of</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Interactional Distance.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Analysis of Variance on Proxemic, Kinesic, and Control Groups Peer Credibility Increase</td>
<td>34</td>
</tr>
<tr>
<td>4.</td>
<td>Analysis of Variance on Proxemic, Kinesic, Teacher-Pupil Credibility Increase</td>
<td>34</td>
</tr>
<tr>
<td>5.</td>
<td>3 x 2 Contingency Table. in Formal Context.</td>
<td>36</td>
</tr>
<tr>
<td>6.</td>
<td>3 x 2 Contingency Table. in Informal Context.</td>
<td>36</td>
</tr>
<tr>
<td>7.</td>
<td>2 x 2 Contingency Table. in Informal Context.</td>
<td>37</td>
</tr>
<tr>
<td>8.</td>
<td>3 x 2 Contingency Table. Increase in Credibility.</td>
<td>39</td>
</tr>
<tr>
<td>9.</td>
<td>2 x 2 Contingency Table. Increase in Credibility.</td>
<td>39</td>
</tr>
<tr>
<td>10.</td>
<td>2 x 2 Contingency Table. Credibility Increase for Kinesic and Control Groups.</td>
<td>40</td>
</tr>
</tbody>
</table>


LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A (source) + B (receiver) create $C_{ab}$ (their interaction). The inner circle represents the dyad.</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Experimental Design</td>
<td>26</td>
</tr>
<tr>
<td>3.</td>
<td>Factorial analysis with repeated measures.</td>
<td>28</td>
</tr>
</tbody>
</table>
ABSTRACT
Selected nonverbal experiences were investigated for their effects upon interpersonal relationships between peer dyads and teacher-pupil dyads. The independent variable was the type of intervention--proxemic, kinesic, or verbal (control). The dependent variables were pre-test, post-test difference scores on interactional distance and credibility ratings between peer and teacher-pupil dyads.

The subjects (Ss) were 325 students from 28 intact sections in the University of Hawaii's course in Interpersonal Speech-Communication. The sections were assigned randomly to the three groups: proxemic (102 Ss), kinesic (112 Ss), and control (111 Ss).

The experiment took three consecutive class sessions in the following sequence: (1) pre-test; (2) intervention; and (3) post-test.

The instrument was a booklet that measured interactional distance and credibility. Distance was measured in centimeters between stationary dots and mobile, self-adhesive dots representing dyads interacting in source-receiver and receiver-source positions. Credibility was measured by means of a seven-point rating scale. Ss were asked to select three peer members with whom they had the most contact and three with whom they had the least contact. By means of dot placement, they were asked to indicate their interaction with these members and with their classroom teacher in dyads in source-receiver, receiver-source
positions and in formal and informal contexts. For each of the treatment groups, pre-test, post-test difference scores on interactional distance and credibility ratings were obtained for peer dyads as well as teacher-pupil dyads.

The interventions did not bring about a significant difference in decreased interactional distance among the three groups. However, the increase in credibility was significantly greater (p < .002) for peer dyads who participated in nonverbal activities over those who took part in verbal activities; there was a slightly greater increase for the proxemic group over the kinesic group.

Credibility for teacher-pupil dyads was significantly greater (p < .05) for Ss who experienced nonverbal activities over those who experienced verbal activities.

Perceived interactional distance on the pre-test placements from source to receiver correlated with perceived interactional distance from receiver to source at .301, significant at the .005 level of confidence. Perceived credibility based on pre-test scores from source to receiver correlated with those from receiver to source at .430, significant at the .005 level.

Among those who selected each other as having more frequent classroom contact, proxemic activities brought about a decrease in perceived interactional distance. Kinesic activities brought about a significant increase in perceived credibility over proxemic activities among those who expressed a mutual
relationship.

Across Ss, changes in credibility were negatively correlated with interactional distance. The correlation was .208, significant at the .005 level of confidence.

Credibility, which defines relationship, is a dynamic variable that can be created or altered. This study, using credibility measures in conjunction with measures of interactional distance, supports the hypothesis that nonverbal experiences improve interpersonal relationships, which in turn provide the context for enhanced human communication.
CHAPTER I
INTRODUCTION

Human communication can be defined as a system of co-adaptation by which society is sustained because of the establishment of a predictable continuity in life events (Birdwhistell, 1970). This predictability can be understood when communication is conceptualized as a phenomenon of cultural patterns that control behavior and learning environments (Fullmer, 1971).

A modification of the equation for a chemical reaction would be useful in explaining the smallest group in interpersonal communication, the dyad:

![Diagram](source)

Figure 1. A (source) + B (receiver) create $C_{ab}$ (their interaction). The inner circle represents the dyad. The second level represents multiple dyads or the community. The third level represents all the people interacting with a given language.
Chemicals A and B, which have their own properties, are altered by the environment and interact to produce a new property, compound $C_{ab}$. In communication, dyad members A and B bring to the context their personal and social identities which have cultural antecedents. Just as chemicals A and B are altered by the environment, members A and B are also changed by cultural influences. Their interaction creates a new property, $C_{ab}$, which becomes a significant part of the environment created in the act of communicating, or making predictable message exchanges. Cultural parameters set the limits for the meaning of the symbols used to communicate. The dyad is influenced by the culture and the social system, which nurtures a systematic behavior; the community or aggregate of groups, which reinforces a select portion of behavior; the group, which reinforces a restricted portion of behavior, and the individual, who demonstrates a select portion of behavior. Interpersonal communication is a form of group behavior which has antecedents in the community and the culture. To the extent that this relationship is comprehensible, it is predictable within the limits of the context defined in a given culture. All such interacting behavior communicates (Watzlawick, 1967); therefore, wherever there is such interaction there is interpersonal communication.

Interpersonal communication can be explained more fully by means of a paradigm on group communication evolved by Fullmer (1971):

1. Interpersonal communication is verbal, nonverbal, and
2. The verbal messages mainly define content.
3. The nonverbal messages mainly define relationship meaning.
4. Meaning qualifies the definition of a relationship.
5. Relationship is equivalent to the context.
6. Interpersonal communication is an expression of perceived relationships among the interactants.
7. Relationship is a dynamic variable.

Regardless of social, economic, or academic status, individuals often find themselves in consultative roles or helping relationships, such as those between parent and child, therapist and client, and between peers who may alternate as tutor and tutee, depending upon the problem. Carkhuff and Berensen (1967) indicate that at the core of such relationships are dimensions that could facilitate or deteriorate the helping process. One of the dimensions is what in communication terms is known as credibility and in counseling terms, as trust.

Credibility, or trust, is a key relationship-defining variable. This variable is expressed primarily through nonverbal communication and is verified by explicit verbal statements. If the nonverbal behavior and the verbal behavior are inconsistent, incongruity exists. If the nonverbal behavior and verbal behavior are consistent, there is congruity, and congruity enhances credibility.

Nonverbal behavior communicates feelings and attitudes
globally (Clevenger and Matthews, 1971). Context qualifies the feelings and attitudes (Fullmer, 1971). According to Mehrabian (1968), the total impact of nonverbal behavior on interpersonal communication is as great as 93 percent. Positive intonation, for example, proved to have a dramatic effect on the learning rate of children of lower-class groups. Children of lower socio-economic groups were more responsive to other nonverbal signals such as facial expression, posture, and touch as well as to vocal signals such as pitch and timbre.

Territoriality or interactional distance is another key variable that defines relationship. Proxemic behavior, or behavior that concerns the manipulation of space, is a form of nonverbal behavior that communicates perceived relationships.

Little's (1968) study dealing with American-Caucasian students generated the hypothesis that territoriality was a function of relationship within cultures. This hypothesis was confirmed by Engebretson's (1969) study dealing with American-Caucasian, Hawaiian-Japanese, and native-Japanese students.

While territoriality within cultures is a function of relationship, between cultures, differences can be accounted for by the cultural parameters. The principles of territoriality that hold across cultures are uniquely defined within cultures, the relationship definition being a case in point. Watson and Graves (1966) found a significant difference in the proxemic behavior of student representatives of American and Arab cultures. Engebretson (1969) found that although relationship was the most powerful
determinant of interactional distance, the cultural variable among American-Caucasian, Hawaiian-Japanese, and native-Japanese students was also significant.

The Problem

The primary purpose of this study was to investigate whether small-group experiences in nonverbal activities could improve interpersonal relationships as defined by interactional distance and credibility. Two comparison groups utilizing nonverbal activities and a control group using verbal activities were involved. Two types of nonverbal activities served as intervention for the comparison groups: (1) proxemic activities, which emphasized body contact and the reduction of interactional distance to zero; (2) kinesic activities, which emphasized the visual aspects of communication, such as eye-contact, gestures, bodily action, and precluded body contact. The control group participated in verbal activities which de-emphasized proxemic and kinesic activities as well as precluded body contact.

This study was based on the theory of interpersonal communication and focused on the concepts of congruity, which has been extensively utilized in communication to investigate credibility, and on territoriality, which has been utilized in anthropology, medicine, and counseling to investigate relationships.

Credibility and Congruity

In the behavioral sciences, congruity theory has been
classified under the general heading of "balance theories" (Bettinghaus, 1962), which include, besides Osgood and Tannenbaum's congruity concept (1955), Heider's (1958) "cognitive balance," Festinger's (1957) "consonance," Newcomb's (1953) "strain toward symmetry," and Stagner's (1951) "homeostasis."

The congruity principle is unique among balance theories in that it suggests that the evaluations placed on both the source sign and the concept sign may be assumed to change if imbalance exists. The balance or imbalance exists in the receiver. The receiver will change the evaluations placed on both the source sign and the concept sign if imbalance exists. This phenomenon can be depicted in the example of Martha Mitchell (source), who said that she favored (assertion) the abolishment of the Supreme Court (concept). If the receiver is either positive or negative toward both the source and the concept, there is congruity. However, if the receiver is positive toward the source and negative toward the concept or negative toward the source and positive toward the concept, there is incongruity. Therefore, if the receiver feels negative toward Martha Mitchell and positive toward the abolishment of the Supreme Court, either his attitude toward Martha Mitchell or toward the abolishment of the Supreme Court may be assumed to change.

Another example of the congruity principle in effect was offered by Slater (1970) in the case of Dr. Benjamin Spock (source) who was against (assertion) the Vietnam War. Among the American parents who relied on Dr. Spock as an authority on child-rearing
and placed a positive sign on him as a source, those who disagreed with his stand on the Vietnam War later denounced him for his permissive philosophy. Content analysis proved that he was permissive in two things primarily: toilet training and feeding. In general social behavior, he stressed parental control and firmness. Depending on the receiver's attitude toward him and toward the concept, Dr. Spock was regarded as a villain or a hero. For those who liked him as an authority on child-rearing as well as protested the Vietnam War, congruity existed.

In a symbol-oriented society such as America, attitudes toward nonverbal symbols such as length of hair and mode of dress could produce problems in incongruity (Slater, 1970). For example, an idealistic male college student in an honors program may have long hair and go barefoot. If he calls on his date and meets her conservative mother for the first time, she might see the hair and bare feet and think, "Hippie," and assign a negative value to the student (source). Should the student indicate his desire (assertion) to date the daughter (concept), and the mother (receiver) has a positive attitude toward her daughter's wishes, then incongruity would exist. The mother would either have to change her attitude toward the student or toward the daughter's wishes.

The principle of congruity contributes to the prediction of behavior because people tend to organize the world of ideas, people, and authority basically along the lines of belief congruence (Rokeach, 1960). Communicators tend to respond to verbal
messages as well as to nonverbal messages in such a way that the old and the new ideas and attitudes form a consistent pattern (Thompson, 1967).

Berlo and Gulley's study (1957) illustrated the effect of congruity. With 174 listeners, two predictions were made for each listener. The first predicted change with respect to the speaker; the second, attitude change with respect to the idea. Predictions were made in the direction of greater harmony between the two. Of 174 predictions of the direction of attitude change for the speaker, 117 were verified; for the idea, 112 predictions were confirmed. In both cases, the number of correct predictions significantly exceeded that which could be attributed solely to change.

Byrne's (1961) study using attitude scales confirmed Rokeach's (1960) hypothesis that people tend to organize the world of ideas, people, and authority basically along the lines of belief congruence. Byrne had his subjects fill out attitude scales. Later he showed members of one group the same scale but presumably filled out by a "stranger." For each member of the group, the "stranger's" scale was filled out the same as his own. Members of the second group also received a "stranger's" scale but filled out to indicate dissimilar attitudes. The results showed that the first group indicated significantly more positive feelings toward the "stranger" than the group who received scales reflecting dissimilar attitudes. Moreover, the similar-attitude group rated the "stranger" higher on intelligence, knowledge of
current events, morality, and adjustments.

Newcomb (1956), in his study of the relationship of propinquity and similarity to credibility found that men liked others who they perceived liked them, and that men were accurate in their estimate of others' liking for them. This study gave further support to the congruity principle as well as to the premise that relationship cues are provided by nonverbal messages.

Attitudes can be influenced through manipulation of concurrent symbols when the fact is kept out of the individual's awareness or at a subliminal level (Fullmer, 1971). Smith, Spence and Klein (1959) demonstrated the possibility that people can be influenced by verbal stimuli without being consciously aware of their occurrence. The experimenters flashed words on the screen by means of a tachistoscope at speeds impossible to notice at a conscious level while subjects viewed a face with a natural expression. As the words were flashed, subjects viewed the expressionless portrait as changing toward anger or happiness, depending on what word was flashed on the screen.

Vocal cues such as rhythm, rate, enunciation, pronunciation, and voice quality influence receiver attitude regarding the source's status and credibility. Harms (1961) reported that such vocal cues enabled listeners to make reliable judgments of both status and credibility after hearing only 10 or 15 seconds of speech. Speakers who were rated as having high status were also consistently rated as being the most credible. Receiver judgments toward such vocal cues also support the assumption that such
attitudes have cultural antecedents. For example, in Hawaii personnel managers who stress a "standard American" dialect as a criterion of competence for employees may rate a prospective employee who speaks with an island dialect as inferior in status and credibility. Conversely, when they interview a person with a standard American dialect, they may give him a high rating in status credibility. Sherif (1965) paraphrased an epigram, "Credibility is in the eye (or ear) of the beholder (or listener)."

Credibility studies have produced considerable evidence that acceptance or rejection of the verbal message on the part of the receiver depended mainly on his attitudes toward the source of the communication. The greater the credibility of the source as perceived by the receiver, the greater the receiver's motivation for accepting change. This statement supports Bettinghaus' (1961) earlier hypothesis that the listener's attitude toward the speaker (source) seemed to be more of a determining factor toward congruity than his attitude toward verbal message. An inference can be made here that in interpersonal communication, source-receiver relationships as perceived by the receiver appear to be more influential than the verbal content itself.

Credibility, like relationship, can be described as a dynamic variable rather than a static fact, and therefore, can be created or altered (Anderson and Clevenger, 1966). Through nonverbal as well as verbal cues that affect receiver responses that are in turn influenced by cultural parameters, credibility can be created or altered, and therefore, affect interpersonal relationships.
Berlo and Kumata (1956) attempted to modify images by using a dramatic allegory, "The Investigator." Attitudes toward Joseph McCarthy, the subject of the satire and who had an unfavorable image, tended to become more favorable, while attitudes toward the source (The Canadian Broadcasting Company and Congressional Committee who had favorable images) became significantly less favorable. The experimentors attributed the "boomerang" effects to the extreme onesidedness of the presentation, which activated the fairness beliefs prevalent in the American culture.

Territoriality and Relationship

Ardrey (1968) defined territory as an area of space which an animal or group defended as an exclusive preserve. Sommer (1969) distinguished between territory and personal space by defining the boundaries of territory as visible and the boundaries of personal space as invisible. Personal space had a body at its center, while territory did not. The radius of this space, explained Barnlund (1968), varied from person to person and from occasion to occasion. The term "region" was used by Goffman (1956) to designate an interactional area. Horowitz (1964) called it the "body-buffer zone." Territoriality may be operationally defined in this study as a form of proxemic behavior, specifically, the interactional distance between members of a dyad in a face-to-face conversational situation.

Carpenter (1964), drew upon information about vertebrates, precluding human beings, to make 30 inferences on the functions of
territoriality. Among these inferences that may be applicable to human behavior were: (1) reinforcement of dominance statuses; (2) reinforcement of integration of groups; (3) regulation of group size; (4) stimulation of breeding behavior; and (5) reduction of stress.

Various studies have been undertaken to study territoriality as a function of (1) context, (2) culture, and (3) relationships. Hall (1966) marked space as a special area of nonverbal communication worth studying in its own right, because just as all behavior communicates, proxemic behavior must communicate. In a series of studies, Hall pointed out the role of context in personal distance; the cultural differences existing in territoriality; and the manipulation of personal space as a form of nonverbal communication expressing relationships. It was he who developed the term 'proxemics' and a system of notation for the study of personal space.

Sommer (1959) attributed deviant proxemic behavior among schizophrenics partly to the context, which was the clinic or the hospital. At the clinic or the hospital, schizophrenics' relationships with staff members and with one another were different from those they might have experienced in a normal environment. Furthermore, the clinical context rarely gave them privacy. Colman (1966) reported a radical change in the proxemic behavior of a man--the husband of a schizophrenic woman--whose actions were classified as bizarre when observed in the hospital and at the clinic. When observed in his own home, however, the same man was
described as relaxed and confident. Goffman (1967) noted that bizarre behavior that came to the attention of the psychiatrist was usually noted first by lay people within a social context that enabled them to evaluate the behavior as deviant from the norms of the group, the community, and the culture.

Significant differences were found between the proxemic behavior of Arab and American college students in the study by Watson and Graves (1966), who were the first investigators to study the nonverbal behavior of dyads according to Hall's proxemic notation system. Hall's system utilized such variables as shoulder axis and touch. In a subsequent study of Latin Americans and North Americans, Forston and Larson (1968) found, on the whole, no significant proxemic differences that supported their hypotheses. Both studies sought to test the viability of Hall's notation system and to collect data on the proxemic behavior of different cultures. Engebretson (1969), on the other hand, using a modification of Kuethe's (1962) Felt Figure free placement technique, found culture to be a significant variable in the interactional distance between dyads among native-Japanese, Hawaiian-Japanese, and American-Caucasians.

Kuethe (1964) stated that when people symbols were placed in an arrangement by free placement, the plan or schema utilized can be analyzed from the perspective of the relationships depicted as well as from the culture. Little's study (1964) revealed that perceived interaction in dyads were markedly influenced by the relationship of the two members. The effect held whether the
"people" involved were line drawings, stylized silhouettes, or the real thing. If the people were labeled as Friends, they were seeing interacting at significantly closer distances than if labeled Acquaintances. If labeled Strangers, they were seeing as interacting at significantly greater distances. American-Caucasians were the subjects of Little's study. Engebretson (1969) included American-Caucasians, native-Japanese, and Hawaiian-Japanese. Relationship was the most powerful determinant of interactional distance.

Summary

The primary purpose of this study was to investigate whether small-group experiences in nonverbal activities could improve interpersonal relationships as defined by interactional distance and credibility. The two comparison groups emphasized proxemic and kinesic behaviors. The control group emphasized verbal behavior.

Interpersonal communication is a phenomenon of cultural patterns that control behavior and learning environments and is influenced by the relationship of the individual to the group, the community, the social system, and the culture. The verbal messages mainly define content. The nonverbal messages mainly define relationship meaning. Meaning qualifies the definition of a relationship. Relationship is equivalent to the context. Interpersonal communication is an expression of perceived relationships among the interactants. Relationship, rather than being
a static fact, is a dynamic variable, and therefore, can be created and altered.

Credibility is a key relationship-defining variable, which is expressed primarily through nonverbal communication and verified through verbal statements. Like relationship, it is also a dynamic variable, and therefore, can be created and altered. Credibility has been investigated most frequently in conjunction with congruity theory, that suggests that evaluations placed on both the source sign and the concept sign would change if imbalance exists. With few exceptions, these studies have dealt with verbal messages rather than nonverbal messages. Since relationships are defined mainly through nonverbal messages, it is the author's contention that the source's nonverbal messages, such as interactional distance, as perceived by the receiver, would affect relationship in terms of actual interactional distance as well as credibility.

Territoriality is another key relationship-defining variable, for as interacting behavior communicates, proxemic behavior communicates perceived relationships. While there has been a number of descriptive studies dealing with territoriality as a function of relationship, few studies have introduced intervention in the form of proxemic behavior in order to alter relationships. It is hoped that this study would fill that void. Although a person learns his repertoire of nonverbal signals (often out of awareness), he sets out to learn consciously many of the nonverbal signals that have social values, such as behavior that indicates
"poise" and good etiquette, values that are reinforced by the social system and the culture (Ekroth, 1970). Indeed, a survey of many "communication" courses in the not-too-distant past throughout the nation would reveal that the nonverbal signals that students were consciously taught were primarily on-stage, public-speaking kinesic signals such as eye-contact, gestures, bodily action, posture, facial expression, and dress, as well as vocal variables such as rate, tone, loudness, and timbre. These nonverbal signals were taught in order to express poise, fluency, and credibility in a public-speaking context rather than in a dyadic or small-group context.

The evolution of the title of the University of Hawaii's basic communication course itself reflects the institution's changing orientation to communication. The title has changed from Speech Improvement in the 1940's to The Fundamentals of Oral Communication in the 1950's; from Expository and Persuasive Speaking in the 1960's to Interpersonal Speech-Communication in the 1970's. The nonverbal signals that are supposed to make the greatest impact on interpersonal communication (Mehrabian, 1968) are receiving the attention that they deserve, not the least of which is the cooperation rendered this study by the Department of Speech-Communication.
Statement of Hypotheses

**Territoriality**

Hypothesis 1: Perceived interactional distance between peer dyads experiencing nonverbal activities will be significantly decreased over those experiencing verbal activities.

Hypothesis 2: Perceived teacher-pupil interactional distance among students experiencing nonverbal activities will be significantly decreased over those experiencing verbal activities.

Hypothesis 3: Nonverbal experiences will significantly decrease perceived interactional distance between peer dyads with less classroom contact than those with more classroom contact.

Hypothesis 4: Decrease in perceived interactional distance between peer dyads will be significantly different for formal and informal social contexts.

**Credibility**

Hypothesis 5: Perceived credibility between peer dyads will be significantly increased among those experiencing nonverbal activities over those experiencing verbal activities.

Hypothesis 6: Perceived teacher-pupil credibility will be significantly increased among students experiencing nonverbal activities over those experiencing verbal activities.

**Congruity**

Hypothesis 7: The receiver's perception of the source's behavior toward him regarding interactional distance will be
similar to the receiver's own perceived behavior toward the source.

Hypothesis 8: The receiver's perception of the source's behavior toward him in regard to receiver credibility will be similar to the receiver's own perceived behavior toward the source.

Hypothesis 9: As credibility increases, interactional distance decreases.

Relationship

Hypothesis 10: Among dyads who mutually select each other, perceived interactional distance will be significantly decreased by nonverbal activities than by verbal activities.

Hypothesis 11: Among dyads who mutually select each other, nonverbal experiences will significantly increase perceived credibility over verbal experiences.
CHAPTER II

METHOD

Subjects

The subjects (Ss) were 325 students from 28 intact sections of the University of Hawaii's 54 sections in Interpersonal Speech-Communication. Because intact classes were used, the teacher variable was considered in the selection of students. Fourteen teaching assistants participated from among the 20 staff members teaching the course. Six were eliminated for the following reasons:

1. Two were instructors with M.A. degrees and more than five years' teaching experience.
2. Two were teaching assistants who had already taught nonverbal units in their sections.
3. Two were teaching assistants who taught only one section including an honors section which was exposed to unusual teaching methods and limited to students in the Selected Studies program.

Since Interpersonal Speech-Communication was a course generally managed by teaching assistants who are responsible for an average of three sections each, it was decided to limit the selection to sections taught by those with two or more sections. Two out of three sections for each teaching assistant was selected at random, making a total of 28 sections. These sections were assigned at random to three groups: proxemic, kinesic, and control.
The Ss included 161 males and 164 females, with a mean age of 20.05 years. There were 239 freshmen, 51 sophomores, 23 juniors, and 12 seniors. Two hundred twenty-four were from the College of Arts and Sciences, 47 from the College of Business Administration, 29 from the College of Engineering, 5 from the College of Education, 4 from the College of Health Sciences and Social Welfare, 3 from "others," and 4 were "unclassified."

The ethnic backgrounds of the Ss included Japanese (159), Caucasian (60), Chinese (49), Cosmopolitan (24), Korean (7), Filipino (7), Hawaiian (2), black (1), "others" (8), and "no response" (8).

Nearly two-thirds of the Ss had lived in Hawaii for 18 or more years, or most of their lives, and nearly one-third of them had lived in Hawaii for 6 months to 3 years.

The breakdown for the proxemic group (102 Ss) included 54 males and 48 females. Their ethnic backgrounds had the following distribution: Japanese, 50; Caucasian, 19; Chinese, 18; Cosmopolitan, 7; Filipino, 0; Korean, 2; Hawaiian, 0; black, 1; "other," 2; and "no response," 2.

There were 61 males and 51 females in the kinesic group (112 Ss). The ethnic groups included Japanese (43), Caucasian (21), Chinese (19), Cosmopolitan (16), Filipino (3), Korean (4), Hawaiian (0), black (0), "other" (1), and "no response" (5).

The control group (111 Ss) was comprised of 47 males and 64 females. Ethnic groups were Japanese (66), Caucasian (20), Chinese (12), Cosmopolitan (1), Filipino (4), Korean (1),
Hawaiian (0), black (0), "other" (5), and "no response" (1).

Materials

The experiment was designed to accommodate intact classes in speech-communication. A class roster was prepared for each of the 28 sections, listing the names of the students enrolled in each section. Each name was preceded by a code number, which was used in the test (Appendix B). A test booklet of seven pages (8 1/2 x 11) was printed (Appendix C). A sheet of 30 self-adhesive dots 3/4-inch in diameter was provided each S.

Procedure

Measures. Interactional distance between dyads was indicated by the distance between two dots, one stationary and one mobile. The distance was measured by means of an engineering divider in centimeters. Little (1965) found one-twelfth of an inch to approximate one inch of actual interactional distance in live settings. Since 2.54 centimeters is equivalent to an inch, 0.2 centimeter would be equivalent to one-twelfth of an inch or to an actual distance of one inch. The centimeter was selected as a convenient measure. Little also found that social distance was a function of relationship, and this held whether lines, silhouettes or real people were used. The author found a significant correlation between silhouettes and dots in the indication of interactional distance in varied relationships. In a pilot study Ss were asked to place a pair of silhouettes in conversational
position for (1) close friends and (2) strangers. This procedure
was repeated with dots. The correlation between placement of dots
and silhouettes was .555, which was significant at the .01 level.

A seven-point rating scale was used to measure credibility
as perceived by the Ss in dyadic relationships. This was smaller
to the rating scale used in the course textbook (Welden and

Definitions. "Territoriality," "personal distance," "social
distance," and "interactional distance," used interchangeably,
mean the face-to-face, conversational distance between dyads in
a standing position.

"Credibility" means trustworthiness as perceived by the Ss
in dyadic relationships.

Design

The study utilized a quasi-experimental pre-test, post-test
control-group design with random assignment of sections to the
proxemic, kinesic, and control groups. The experiment took three
consecutive class sessions. The pre-test was administered during
the first session, the intervention was provided during the second
session, and the post-test, during the third session. Since the
classes met twice weekly, four types of sequences were utilized:
(1) Monday-Wednesday-Monday; (2) Wednesday-Monday-Wednesday;
(3) Tuesday-Thursday-Tuesday; and (4) Thursday-Tuesday-Thursday.
The experiment was conducted during a one-month period, six weeks
after the classes were in session. The students had already
participated in a number of small-group experiences and were about to begin their formal, individual speeches. The study was completed before the classes resumed intensive group work, such as the "information-gain symposium."

At the first session the experimenter presented a standard oral explanation about the purpose of the unit (Appendix A). There was no time limit on the tests, but generally the pre-test took an average of 30 minutes to administer, and the post-test, 20 minutes.

Instructors participated in the intervention during the second session. The form of intervention were proxemic, kinesic, and verbal (control) activities.

Proxemic Activities. The proxemic group participated in sensory activities in dyads, small-groups, and large groups, primarily designed to communicate a sense of self-worth and positive regard for the other person (Gunther, 1969):

1. Holding hands in a circle (large group).
2. Hand-shaking (large group).
3. Communicating with hands with eyes closed (dyads).
5. Hand-tapping and massaging (dyads).
7. Om-chanting (large group).

According to Gunther (1968), the United States has a relatively noncontact culture. Group sensory experiences help individuals to regain a basis of feeling. Proxemic experiences
in this study were selected to help the individual gain a sense of feeling and closeness for others through the sense of touch.

Kinesic Activities. The kinesic group was asked to utilize all visual channels, such as eye-contact, facial expression, posture, gesture, and bodily action to communicate a sense of positive regard and self-worth for their dyad partner. The group was organized into dyads and told to carry on a conversation utilizing the visual channels and precluding touch. The entire class stood in an area accommodating 12-15 conversational groups surrounded by three cameras that videotaped each individual and dyad for 25 minutes. Every four minutes the dyads changed partners so that the Ss spoke with some six partners during the videotaping. After the 25-minute session the Ss viewed the videotaped playback.

Videotaping is a technique that enhances group process (Engebretson, 1971). It is through a continuum of nonverbal behaviors that a receiver makes judgments about the source's credibility. Ekroth (1970) mentioned that psychiatrists, who are trained to control their behavior toward their patients were amazed to see the amount of uncontrolled nonverbal responses they showed when they were given feedback in a study by means of films of their interviews with patients. Focused feedback through videotaping provides a way of instructing the group on their own kinesic behavior.

Verbal (Control) Activities. The control group carried on their scheduled communication activities (individual speeches).
Statistical Analysis. For Hypotheses 1, 3, and 4, factorial analysis of variance with repeated measures (Winer, 1962, pp. 319-328) was used with the least-squares solution (p. 375) for unequal cell size. One-way analysis of variance was used for Hypotheses 2, 5, and 6 by means of Fortran computer program ANOVAR (Veldman, 1967, pp. 247-251). The Pearson product-moment correlation coefficient was used for Hypotheses 7, 8, and 9 by means of Fortran computer program CORS (Veldman, pp. 192-194). The data was coded and key-punched on IBM cards (Appendix D). The University of Hawaii's IBM 360/65 computer system was used for all the analyses. Chi-square was the statistic used for Hypotheses 10 and 11 (Smith, 1970, p. 187). The .05 level of significance was selected as the basis for the confirming hypotheses.

The design of the experiment in Figure 2 shows that for each of the treatment groups (proxemic, kinesic, and control), pretest, post-test difference scores on interactional distance and credibility ratings were obtained for peer dyads and teacher-pupil dyads. Distance was measured in centimeters between dots placed by Ss, representing interaction with peer dyads and teacher-pupil dyads in formal and informal contexts. Each S was asked to select three peer members with whom they had the most classroom contact and three with whom they had the least contact. By means of dot placement, Ss were asked to indicate their interaction with these members and with their classroom teacher in source-receiver, receiver-source positions. Credibility was
Figure 2. Experimental Design.
measured by means of a 7-point rating scale.

**Factorial Analysis.** The factorial analysis of variance design, Figure 3, utilized one variable fixed on three levels of intervention:

1. methods--proxemic, kinesic, and verbal (control);
2. social context--formal and informal;
3. degree of classroom contact--more and less.
Figure 3. Factorial analysis with repeated measures. *Ss in each of the three methods were treated under four different conditions. These conditions are depicted in a column under each method.
CHAPTER III
RESULTS

Territoriality

Hypothesis 1: Perceived interactional distance between peer dyads experiencing nonverbal activities will be significantly decreased over those experiencing verbal activities.

Mean decreases in centimeters for the proxemic group were -3.168; for the kinesic group, 1.580; and for the control group, .308. The obtained F-ratio was not significant for the different methods. The analysis of variance is shown in Table 1.

Hypothesis 2: Perceived teacher-pupil interactional distance among students experiencing nonverbal activities will be significantly decreased over those experiencing verbal activities.

As Table 2 indicates, the obtained F-ratio was not significant for the different methods. Mean decreases in centimeters for the proxemic group were 1.417; for the kinesic group, 2.055; and for the control group, .0385.

Hypothesis 3: Nonverbal activities will significantly decrease perceived interactional distance between peer dyads with less classroom contact than those with more classroom contact.

Mean decreases in centimeters for Ss with more classroom contact were -16.068 for the proxemic group; 3.261 for the kinesic group, and -3.604 for the control group. Mean decreases for Ss with less classroom contact were .398 for the proxemic
<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects</td>
<td>324</td>
<td>8295.690</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method (A)</td>
<td>2</td>
<td>2497.012</td>
<td>.299</td>
<td>n.s.</td>
</tr>
<tr>
<td>A x S (B)</td>
<td>322</td>
<td>8331.706</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Subjects</td>
<td>975</td>
<td>5448.269</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Context (B)</td>
<td>1</td>
<td>4991.389</td>
<td>1.240</td>
<td>n.s.</td>
</tr>
<tr>
<td>A x B</td>
<td>2</td>
<td>2341.442</td>
<td>.582</td>
<td>n.s.</td>
</tr>
<tr>
<td>A x S (W)</td>
<td>322</td>
<td>4023.639</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom Contact (C)</td>
<td>1</td>
<td>6032.409</td>
<td>.721</td>
<td>n.s.</td>
</tr>
<tr>
<td>A x C</td>
<td>2</td>
<td>2599.973</td>
<td>.645</td>
<td>n.s.</td>
</tr>
<tr>
<td>C x S (W)</td>
<td>322</td>
<td>4031.763</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B x C</td>
<td>1</td>
<td>3408.501</td>
<td>.408</td>
<td>n.s.</td>
</tr>
<tr>
<td>A x B x C</td>
<td>2</td>
<td>2407.980</td>
<td>.288</td>
<td>n.s.</td>
</tr>
<tr>
<td>BC x S (W)</td>
<td>322</td>
<td>8351.216</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2

Analysis of Variance on Proxemic, Kinesic and Verbal Groups in Decrease of Interactional Distance

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>1425.921</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Groups</td>
<td>322</td>
<td>1181.265</td>
<td>.0828</td>
<td>n.s.</td>
</tr>
<tr>
<td>Total</td>
<td>324</td>
<td>1427.440</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
group; 3.085 for the kinesic group; and 3.913 for the control
group. The F-ratio was not significant. The analysis of variance
for differences in mean decreases in interactional distance for
the three groups in relation to frequency of classroom contact is
shown in Table 1.

Hypothesis 4: Decrease in perceived interactional distance
between peer dyads will be significantly different
for formal and informal social contexts.

Mean decreases in centimeters for the formal context was
-15.435 for the proxemic group; 3.377 for the kinesic group; and
-3.163 for the control group. Mean decreases for the informal
context was 2.76 for the proxemic group; 2.96 for the kinesic
group; and 3.47 for the control group. The F-ratio was not
significant. The analysis of variance for the groups in different
social contexts is shown in Table 1.

Credibility

Hypothesis 5: Perceived credibility between peer dyads will be
significantly increased among students experiencing
nonverbal activities over those experiencing
verbal activities.

The mean increase in credibility on a 7-point scale was .308
for the proxemic group; .258 for the kinesic group; and .079 for
the control group. The F-ratio was significant at the .002 level.

The Scheffé test (Smith, 1970, pp. 125-128) was used to
compare the three means. The 't' between the proxemic and control
group means was 2.752, which was significant at the .02 level.
The 't' between the kinesic group and the control group means was 2.659, which was significant at the .05 level. The 't' between the proxemic and kinesic group means, .770, was not significant.

Table 3 shows the analysis of variance on the differences in peer credibility increases for the three groups.

Hypothesis 6: Perceived teacher-pupil credibility will be significantly increased among students experiencing nonverbal activities over those experiencing verbal activities.

The mean increases in credibility on a 7-point scale were .1520 for the proxemic; .1351 for kinesic, and .0313 for control. The F-ratio obtained was 2.974, which was significant at the .05 level. Table 4 shows the analysis of variance on teacher-pupil credibility increase of the three groups.

Congruity

Hypothesis 7: The receiver's perception of the source's behavior toward him regarding interactional distance will be similar to the receiver's own perceived behavior toward the source.

The Pearson product-moment correlation coefficient of the source-receiver, receiver-source variables (interactional distance) was .301, with 323 df, which was significant at the .005 level.

Hypothesis 8: The receiver's perception of the source's behavior toward him in regard to receiver credibility will be similar to the receiver's own perceived behavior toward the source.
### Table 3

Analysis of Variance on Proxemic, Kinesic, and Control Groups Peer Credibility Increase

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.248</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Groups</td>
<td>322</td>
<td>1.555</td>
<td>6.483</td>
<td>.002</td>
</tr>
<tr>
<td>Total</td>
<td>324</td>
<td>.240</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 4

Analysis of Variance on Proxemic, Kinesic, and Control Groups on Teacher-Pupil Credibility Increase

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.756</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Groups</td>
<td>322</td>
<td>2.221</td>
<td>2.977</td>
<td>.05</td>
</tr>
<tr>
<td>Total</td>
<td>324</td>
<td>.746</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Pearson product-moment correlation coefficient of the source-receiver, receiver-source variables (credibility) was .430 with 323 df, which was significant at the .005 level.

Hypothesis 9: As credibility increases, interactional distance decreases.

The Pearson product-moment correlation coefficient of the pre-test, post-test differences in interactional distance and credibility ratings was .208, which was significant at the .005 level, with 323 df.

Relationship

Hypothesis 10: Among dyads who mutually select each other, perceived interactional distance will be significantly decreased by nonverbal activities than by verbal activities.

The chi-square test showed no significant difference among the three groups in decrease in interactional distance in the formal context. However, for the informal context, the chi-square was 8.921, which was significant at the .02 level, with 2 df. The chi-square between the proxemic and control groups in the informal situation with 1 df was 7.64, which was significant at the .01 level.

Tables 5, 6 and 7 show the values of the chi-square on the data for this hypothesis.
Table 5

3 x 2 Contingency Table on Frequency of Decrease in Interactional Distance Among Mutually Selected Dyads in the Proxemic, Kinesic, and Control Groups in Formal Context

<table>
<thead>
<tr>
<th>Method</th>
<th>Decrease</th>
<th>No Decrease</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proxemic</td>
<td>32</td>
<td>30</td>
<td>62</td>
</tr>
<tr>
<td>Kinesic</td>
<td>13</td>
<td>25</td>
<td>38</td>
</tr>
<tr>
<td>Control</td>
<td>23</td>
<td>42</td>
<td>65</td>
</tr>
<tr>
<td>Totals</td>
<td>68</td>
<td>97</td>
<td>165</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 4.450 \]

\[ p, \text{n.s.} \]

Table 6

3 x 2 Contingency Table on Frequency of Decrease in Interactional Distance Among Mutually Selected Dyads in the Proxemic, Kinesic, and Control Groups in Informal Context

<table>
<thead>
<tr>
<th>Method</th>
<th>Decrease</th>
<th>No Decrease</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proxemic</td>
<td>32</td>
<td>30</td>
<td>62</td>
</tr>
<tr>
<td>Kinesic</td>
<td>13</td>
<td>25</td>
<td>38</td>
</tr>
<tr>
<td>Control</td>
<td>17</td>
<td>48</td>
<td>65</td>
</tr>
<tr>
<td>Totals</td>
<td>62</td>
<td>103</td>
<td>165</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 9.001 \]

\[ p < .02 \]
Table 7

2 x 2 Contingency Table on Frequency of Decrease in Interactional Distance Among Mutually Selected Dyads in the Proxemic and Control Groups in Informal Context

<table>
<thead>
<tr>
<th>Method</th>
<th>Decrease</th>
<th>No Decrease</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proxemic</td>
<td>32</td>
<td>30</td>
<td>62</td>
</tr>
<tr>
<td>Control</td>
<td>23</td>
<td>42</td>
<td>65</td>
</tr>
<tr>
<td>Totals</td>
<td>55</td>
<td>72</td>
<td>127</td>
</tr>
</tbody>
</table>

\[ x^2 = 7.641 \]

\[ p < .01 \]
Hypothesis 11: Among dyads who mutually select each other, nonverbal experiences will significantly increase perceived credibility over verbal experiences.

The chi-square test showed a significant difference among the treatment groups in credibility increase among peer dyads who mutually selected each other. The chi-square was 5.894, which was significant at the .05 level. Chi-square between the proxemic group and control group was 2.389, which was not significant. However, chi-square between the kinesic and control group was 3.967, which was significant at the .05 level.

Tables 8, 9, and 10 show the values of chi-square on data on increase in credibility among mutually selected dyads for the different groups.
### Table 8

3 x 2 Contingency Table on Frequency of Increase in Credibility Among Mutually Selected Dyads

<table>
<thead>
<tr>
<th>Method</th>
<th>Increase</th>
<th>No Increase</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proxemic</td>
<td>22</td>
<td>40</td>
<td>62</td>
</tr>
<tr>
<td>Kinesic</td>
<td>16</td>
<td>22</td>
<td>38</td>
</tr>
<tr>
<td>Control</td>
<td>14</td>
<td>51</td>
<td>65</td>
</tr>
<tr>
<td>Totals</td>
<td>52</td>
<td>113</td>
<td>165</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 5.894 \]

\[ p < .05 \]

### Table 9

2 x 2 Contingency Table on Frequency of Increase in Credibility Among Mutually Selected Dyads

<table>
<thead>
<tr>
<th>Method</th>
<th>Increase</th>
<th>No Increase</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proxemic</td>
<td>22</td>
<td>40</td>
<td>62</td>
</tr>
<tr>
<td>Control</td>
<td>14</td>
<td>51</td>
<td>65</td>
</tr>
<tr>
<td>Totals</td>
<td>36</td>
<td>91</td>
<td>127</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 2.389 \]

\[ p, \text{ n.s.} \]
Table 10

2 x 2 Contingency Table on Frequency of Credibility Increase for Kinesic and Control Groups

<table>
<thead>
<tr>
<th>Method</th>
<th>Increase</th>
<th>No Increase</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinesic</td>
<td>16</td>
<td>22</td>
<td>38</td>
</tr>
<tr>
<td>Control</td>
<td>14</td>
<td>51</td>
<td>65</td>
</tr>
<tr>
<td>Totals</td>
<td>30</td>
<td>73</td>
<td>103</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 3.967 \]

\[ p < .05 \]
CHAPTER IV
DISCUSSION

Teachers frequently concern themselves with learning in the affective, as well as in the cognitive, domain. Their lesson plans may often include outcomes dealing with interpersonal relationships (Noda, 1971). Studies on classroom interactions between teacher and student show a significant link between the teacher's verbal communication skills and student achievement (Truax and Carkhuff, 1967). Relationship provides the context in which learning can take place. It creates the situation in which behavior change can occur (Fullmer, 1971). Ruesch and Bateson (1951) recognized the group as a determinant of the actions and communications of separate persons. Therefore, a teacher would not only need to be concerned with improving his relationship with students but also with improving interpersonal relationships among the students themselves within the classroom. Although there has been a number of descriptive studies dealing with teacher behavior in the classroom, there is a lack of research on the types of intervention a teacher might provide to improve teacher-pupil, peer group relationships.

Territoriality

The human group is ruled by cultural parameters and the process of the social system (Fullmer, 1971). Although much non-verbal behavior is out of the awareness of people, any behavior
that violates the cultural norm is quickly noted.

Experiences in nonverbal activities did not cause a significant decrease in perceived interactional distance among peer dyads who had a closer relationship as a result of more frequent contact. These dyads had a closer interactional distance to begin with than those who had infrequent classroom contact. To reduce personal distance further would in some cases have reduced it to zero, thus violating the cultural pattern of acceptable behavior in the classroom. In the case of the proxemic group, those who had a closer relationship actually increased their perceived personal space after intervention. The distance increased also for the control group although considerably less so than for the proxemic group. Among those who did not have a close classroom relationship because of infrequency of contact, there was some decrease in perceived interactional distance for each of the three groups. This could be explained by the fact that those who had a distant relationship as a result of infrequent classroom contact had greater perceived interactional distance to begin with, and therefore it would not be as easy to violate the cultural norm as would the closer group when territoriality was relatively decreased.

Mean decreases in perceived interactional distance among the three groups was not significantly different for either the formal or informal social contexts. However, when individual scores of members who had a relationship as a result of mutual selection were analyzed, territoriality was significantly decreased among
members experiencing proxemic activities for the informal context. There was no significant difference among the three groups in the formal context. The assumption of territoriality serving as a function of relationship would assist in explaining the change in interactional distance among mutually selected dyads. Furthermore, the flexibility of an informal context in contrast to the more rigid structure of a formal context would aid in such a change.

If territoriality defines relationship, and the Pearson product-moment correlation coefficient showed a significant link between decrease in interactional distance and increase in credibility, why did the analysis of variance fail to show any significant differences in territoriality for the three groups? Two explanations may be considered: (1) the nature of classroom context; (2) the definition of relationship in this study.

The classroom itself may be a context that influences perception of territoriality because of the nature of its structure. In classrooms, for example, behavior outcomes are usually teacher-determined. Many requests are tolerated that are not acceptable outside of the classroom, such as an invasion of privacy through the asking of questions regarding thoughts and feelings that students may prefer to keep to themselves but are often required to answer. Interventions formulated to modify behavior and attitudes are tolerated. It may be implied that classroom contexts make it exceedingly difficult to bring about major changes in the perception of something so culture-bound as territoriality. In
this study, there were no significant differences in overall mean decreases among the groups due to intervention, although credibility, a dimension of relationship, did change. Among Ss who had a relationship that might be considered to be ongoing rather than short-term because of their mutual selection, nonverbal activities did cause a decrease in territoriality as well as increase in credibility. The decrease in territoriality, however, occurred only in the informal context. The classroom itself may be considered to be analogous to a formal situation and may have influenced perception of territoriality.

Relationship in the experimental instrument could be defined in several ways: (1) possible short-term intimacy (which leads to alienation) (Fullmer, 1971); and (2) ongoing relationships. The Ss were asked to select six colleagues from their class: three with whom they had the most task association (X); and three with whom they had the least task association (Y). The relationship, therefore, was primarily a temporary working relationship that might be considered to be short-term with little involvement than what the task required at the moment. A mutual selection implies a recognized relationship, possibly an ongoing relationship. For these people, credibility increased and territoriality decreased after experiences in nonverbal activities.

A visual analysis showed that there was a definite difference in the interactional distance between the X (more classroom contact) and Y (less classroom contact) groups. However, since this study was concerned with whether experiential intervention
would reduce the distance among the groups, a statistical analysis was not conducted for the pre-test data for the X and Y groups and rather, difference scores between the pre-test and post-test were used.

**Credibility**

This experiment has shown a link between an increase in credibility and a decrease in territoriality in dyadic relationships. Credibility, a definition of relationship, is a dyadic variable that can be created and altered. Groups experiencing nonverbal activities had significantly higher mean increases in credibility for peers as well as for teachers over the control group, with gains for the proxemic group being slightly higher than for the kinesic group. While significant differences in decrease in perceived interactional distance could not be attributed to the interventions themselves, the nonverbal activities did appear to contribute significantly to a more intrapersonal, qualitative form of the receiver's perception of source credibility. Ruesch and Bateson (1951) describe the networks of human communication as intrapersonal, interpersonal, group, and cultural in nature. Territoriality is influenced by and even subject to censure by all four networks, especially by the cultural network. Credibility, which exists in the receiver rather than the source, although affected broadly by all four networks, is qualitative, more intrapersonal, and therefore can be more easily expressed than an observable phenomenon as interactional distance.
Among those with a mutual relationship, there was an increase in credibility for the kinesic group over the proxemic group. Joos (Gleason, 1969) listed five communication situations which have different codes or signals: intimate, casual, consultative, deliberative, and ceremonial. The closer the relationship the more it would include private verbal and nonverbal codes which dyads in an intimate situation would share. Subtle kinesic codes such as gesture, eye-contact, and facial expressions would have meaning among such participants. Visual stimuli provided by kinesic behavior are powerful, as studies dealing with mass communication, such as television examples, show (Truax and Carkhuff, 1967). Perhaps in television programs there is already a source-receiver relationship between the performers and the viewers. Proxemic behavior appears to an effective stimulus in enhancing credibility (within cultural parameters), as indicated by Mehrabian's example of the social worker and the child from a culturally deprived area. However, where a relationship already exists, kinesic behavior seems to be a more powerful influence.

Experiential activities that focus on the development of sensory awareness aid in learning and behavior change in the affective domain (Gunther, 1968). Small-group experiences in nonverbal activities appeared to contribute significantly to an increase in credibility among both peer dyads and teacher-pupil dyads, thus improving interpersonal relationships in the classroom. Increase in credibility defines improved interpersonal relationships in the classroom, which in turn improves the context
in which learning can take place.

**Congruity**

Communications networks are related to the value system and the codification system of each individual, through the total world of the individual (Ruesch and Bateson, 1951, p. 176).

The value system, as organized in terms of preference constitutes a network in which certain items are selected and others are passed over or rejected, and this network embraces everything in life. All events and objects which present themselves are in some degree classified into the complex system of Gestalten which is the human codification system. It is well known that the network of value partially determines the network of perception.

The foregoing assumption was incorporated into a congruity theory by Osgood and Tannenbaum (1955) and into other "balance" theories.

All hypotheses supporting congruity theory were confirmed. Whatever behavior the receiver perceived in the source influenced the behavior of the receiver toward the source. Those who perceived the source's response toward them to be distant or close in interactional distance responded toward the source in a similar manner. Those who perceived the source to rate them high or low on credibility responded toward the source in a similar manner.

The cultural network of communication enables the observer to look from the person to the group and to the culture, and from the culture to the group, to the person. People in general tend to behave toward others the way they perceive others to behave toward them, and such expectations are formed by a culturally derived network whether it is dealing with territoriality or
credibility.

Relationship

Although the analysis of variance revealed no mean decrease of perceived interactional distance among the three groups, a chi-square test on individual scores of dyads who mutually selected each other showed a significant decrease for the group who experienced proxemic activities. However, this occurred only in the informal context. In the formal context, methodology made no difference in decrease of perceived personal space. Cultural parameters dictate the limits of territoriality. In a formal situation, where the structure for face-to-face conversational situations are more rigid, people tend to position themselves in a manner that would meet socially approved standards. In an informal context—in this case a picnic—there is a relaxing of stances that are more rigidly observed in formal situations.

Although the analysis of variance for the three groups showed the proxemic group to have the greatest credibility increase, when the chi-square test was used to analyze the scores of those who had a mutual relationship, the kinesic method seemed to show a greater increase in credibility.

In interpersonal communication, nonverbal messages define relationship meaning. Learning in the affective domain, such as improvement of classroom relationships, appears to necessitate an experiential approach, where actual participation in nonverbal activities, or relationship-enhancing activities, is provided in
the classroom context. Much has been said about the fallacy of gaining cognitive content without the experiential content. Intervention in the form of nonverbal activities seem to provide an experiential content that helps to enhance interpersonal relationships, which in turn enhance the context in which learning can take place.
CHAPTER V
CONCLUSIONS

In human communication, nonverbal messages define relationship meaning, which in turn creates the context in which communication takes place. Those who are charged with the behavioral objectives of improving interpersonal communication need to focus on the improvement of interpersonal relationships. Learning in the affective domain deals primarily with experiential activities. Because nonverbal messages are frequently beyond the threshold of awareness, the cognitive approach would not be as effective as the experiential approach.

The main objective of this study was to discover whether small-group experiences in nonverbal activities could improve interpersonal relationships, as defined by interactional distance and credibility. The interventions included proxemic, kinesic, and verbal (control) activities. Three hundred twenty-five Ss participated in the experiment and were in the following groups according to random assignment of intact speech classes of which they were members: (1) proxemic--102; (2) kinesic--112; and (3) verbal (control)--111. The instrument was a test booklet measuring interactional distance and credibility between peer dyads and teacher-pupil dyads. Measurement of interactional distance involved the use of stationary printed dots and mobile self-adhesive dots representing peer and teacher-pupil dyads. The distance between them was measured in centimeters. The
measurement of credibility utilized a seven-point rating scale. Statistical tests included one-way analysis of variance; factorial analysis of variance with repeated measures; Pearson product-moment correlation coefficient, and the chi-square test. Pre-test and post-test difference scores were used for most of the hypotheses. The .05 level of significance was selected as a basis for confirming the hypotheses.

The hypotheses listed in chapters 1 and 2 were grouped under territoriality, credibility, congruity, and relationship. None of the hypotheses on territoriality were confirmed. The hypotheses on credibility, congruity, and relationship were all confirmed.

Territoriality

There was no significant decrease in interactional distance among the three groups for either the formal or informal contexts for either the peer or teacher-pupil dyads. Nor was there a significant difference in decreased territoriality between groups who had more classroom contact and groups who had less classroom contact.

Credibility

Credibility was significantly increased among peer dyads who participated in nonverbal activities than for those who took part in verbal activities. There was a greater increase among participants in proxemic activities than among those in kinesic
activities. Those who took part in kinesic activities had a greater credibility increase than those in the control group.

Among teacher-pupil dyads credibility was significantly increased for those who experienced nonverbal activities than for those who experienced verbal activities.

**Congruity**

People tended to respond to others both in credibility and interactional distance in a manner similar to the behavior they predicted in others. There was a significant correlation between the receivers’ prediction of the sources’ response to them in territoriality and credibility and the behavior of the receivers toward the sources.

**Relationship**

Among those who had a mutual relationship, proxemic activities brought about a decrease in perceived territoriality. Kinesic activities brought about a significant increase in perceived credibility over proxemic activities among those who expressed a mutual relationship.

As credibility increased, interactional distance decreased. The pre-test, post-test difference scores on credibility and territoriality were significantly correlated.

**Conclusions**

Credibility, which defines relationship, is a dynamic
variable. Territoriality is a variable that is both culture-bound and relationship-bound. That it is culture-bound is confirmed by its stability after the interventions. That it is relationship-bound is confirmed by its correlation with credibility at the .005 level of significance. Experiences in nonverbal activities bring about improvement in interpersonal relationships by increasing credibility, a relationship-defining variable. Among those who appear to have a mutual relationship, nonverbal experiences bring about decreased territoriality in the informal context.

Nonverbal messages create most of the impact on interpersonal communication. Nonverbal communication defines relationships. Learning in the affective domain involves the redefinition of relationships and is more experiential than cognitive. Experiences in nonverbal activities enhance interpersonal relationships, which in turn create the contexts in which human communication can be enhanced.
Proposals for Future Research

1. This study dealt with peer-group and teacher-pupil relationships in a college setting. Teacher-pupil credibility and peer-group credibility studies can be replicated in settings such as elementary or secondary schools. Since nonverbal activities had a significant effect on credibility increase, such a study might have a considerable implication on the improvement of classroom relationships between students and teachers as well as between students and their peers.

2. No attempt was made to manipulate the physical context in the videotaping of kinesic activities, such as having Ss seated on the floor on mats and cushions for an informal context or on office chairs for a formal context. Future kinesic research could control for the different social contexts created by variations in physical contexts. It was found in the experimenter's pilot study, for example, the moment the Ss sat on the floor rather than on chairs, interactional distance decreased considerably. This implies that by changing the physical context, such as seating arrangement, relationships might also be changed.

3. A descriptive study can be undertaken of teacher-pupil relationships with an emphasis on the nonverbal behavior of teachers toward their students. Student teachers and beginning teachers can be trained to observe and evaluate the behavior of their supervisors or model teachers. Conversely, supervisors can observe and evaluate the behavior of their charges. Videotaping of supervisors and student teachers in the classroom milieu
would yield further data.

4. The intervention in this study was provided on a short-term basis. Time itself can be regarded as a manipulative variable in a future study. What is the ideal number of times, for example, that interventions should be administered in order to improve relationships?

5. Because intact groups were used in this study, culture and ethnic backgrounds were not controlled. An experimental design can be worked out using intervention with Ss from various cultural and ethnic groups. The study would be concerned with whether Ss from different cultural and ethnic backgrounds respond differently to the interventions.

6. Measurement may be regarded as an aspect worth studying in its own right. For example, if scales are provided for interactional distance (such as "1/12 of an inch equals one foot"), would the measurement be more reliable? Were the more easily apparent differences that intervention made on credibility due to the precision of the rating scale? The Ss were given no scales for interactional distance. Instead, they used free placement of dots, a technique supported by previous studies. However, would identifying the distance on a scale (such as "1/12 of an inch equals one foot") increase the instrument's reliability?

7. This instrument on interactional distance can be developed and studied as a sociometric device. Such an instrument might enable group leaders and teachers a means of getting a profile of relationships. In the pre-test, for example, Ss placed
their dots closer to those with whom they had more classroom contact and farther apart from those with whom they had less classroom contact.
APPENDIX A

Standard Oral Explanation
Standard Oral Explanation

In interpersonal communication we are concerned with much more than speech-making, much more than verbalizing. We are also concerned with interpersonal relationships. We can use a model of a chemical reaction to explain the process of interpersonal communication. Just as chemicals A and B have their own properties, each person in a dyad, which is the smallest communication group, brings his own personal and social identities to the communication situation. And as temperature and other environmental factors affect the chemical reaction, so do the community --or collection of small groups--and the culture--affect the communication dyad. We can therefore look at interpersonal communication from the dyad into the culture, and from the culture into the dyadic relationship.

This unit will take three sessions. Today you will be taking this "test." At our next meeting your instructor and I will involve you in some activities. They may be similar to what you are now doing or they may be different. (Announce whether the group will be experiencing proxemic, kinesic, or verbal activities. For example, if they are to be videotaped, explain the procedure and announce the location to which they are to report. If they are to continue with their verbal activities, mention the type of preparation needed.)

At the third meeting you will be taking this test again. After the Easter holiday, your instructor will announce the
results of this study. We hope that what we find will tell you something about interpersonal communication and relationships.
APPENDIX B

Classroom Roster
Name: __________________________
(to appear on this sheet only)

Directions: Select only those who are present today.

Place an X before three people with whom you have associated the most in task-oriented situations.

Place a Y before three people with whom you have associated the least in task-oriented situations.

For the exercises to follow, indicate the X and Y members by their code numbers only.

1. Sammy Akita*
2. John Emith
3. Mary Hill
4. Karen Higashi
5. Gwen Himeda
6. Ken Kano
7. Leslie Kono
8. Lani Lee
9. Jerry Lime
10. Hattie Mare
11. Mae Miyagi
12. Joan Moon
13. Maynard Morinato
14. Jim Morrey
15. Steve Muraoka
16. Bill Muir
17. Chuck Olay
18. Ronney River
19. Slim Shintaku
20. Nadine Taira
21. Yvonne Yung

*Fictitious names listed above.
APPENDIX C

Test Booklet
1. Social Security Number: ___ ___ ___ ___ (last four digits).

2. Age: ___ (in months). (Example: if 20 years and 3 months, write 243.)

3. Sex: Male ___ Female ___

4. Marital Status: Married ___ Single ___

5. Grade: (check one) Freshman ___ Junior ___ 5th year ___
   Sophomore ___ Senior ___ Graduate School ___

6. College: (check one) Arts and Sciences ___
   Business Administration ___ Education ___ Engineering ___
   Health Sciences ___ Tropical Agriculture ___

7. Place of Birth: ______________________________________

8. High School: _______________________________________

9. Ethnic Background: __________________________________

10. G.P.A.: (check one)
    
    2.0 - below ___
    2.0 - 2.49 ___
    2.5 - 2.99 ___
    3.0 - 3.4 ___
    3.5 - above ___

11. I view myself as: (check one for each pair)
    open-minded ___ close-minded ___
    flexible ___ rigid ___
    accepting ___ critical ___
    innovative ___ conventional ___
    liberal ___ conservative ___

12. Number of years' residence in Hawaii: ___
Write the numbers of each X and Y member in each indicated space. In the following spaces, each circle labeled "you" represents yourself in profile, facing toward the right side of the paper. Imagine that you are standing at a formal reception for a political figure. The six X and Y members will approach you. Using the self-adhesive dots to represent these people in profile, place them where you think they would stand during a face-to-face conversational situation with you. Place each dot on the line.

At the same reception, you will be approached by your speech instructor. Where do you think he would position himself in a face-to-face conversation with you?
Write the numbers of each X and Y member in each indicated space. In the following spaces, each circle labeled "you" represents yourself in profile, facing toward the right side of the paper. Imagine that you are standing at a picnic. The six X and Y members will approach you. Using the self-adhesive dots to represent these people in profile, place them where you think they would stand during a face-to-face conversational situation with you. Place each dot on the line.

You

X

You

X

You

X

You

Y

You

Y

You

Y

At the same picnic, you will be approached by your speech instructor. Where do you think he would position himself in a face-to-face conversation with you?
You are communicating with the six X and Y members individually in order to influence them regarding their attitudes toward a person, an object, an event, or an idea. What credibility rating do you think each person would give you? Write the numbers of each X and Y member. Circle the rating you would expect from each. 7 is the highest rating, 1 is the lowest. Credibility is defined as "trustworthiness."

X ___ high credibility  7 6 5 4 3 2 1 low credibility

X ___ high credibility  7 6 5 4 3 2 1 low credibility

X ___ high credibility  7 6 5 4 3 2 1 low credibility

Y ___ high credibility  7 6 5 4 3 2 1 low credibility

Y ___ high credibility  7 6 5 4 3 2 1 low credibility

Y ___ high credibility  7 6 5 4 3 2 1 low credibility

You are communicating with your instructor in hopes of influencing him regarding his attitude toward a person, an object, an event, or an idea. What credibility rating do you expect from him?

high credibility  7 6 5 4 3 2 1 low credibility
The six $X$ and $Y$ members are communicating with you in hopes of influencing you regarding your attitude toward a person, an object, an event, or an idea. What credibility rating would you give each member? Write the numbers of each $X$ and $Y$ member. Circle the rating you would give each person. 7 is the highest rating, 1 is the lowest.

$X$ ___ high credibility 7 6 5 4 3 2 1 low credibility

$X$ ___ high credibility 7 6 5 4 3 2 1 low credibility

$X$ ___ high credibility 7 6 5 4 3 2 1 low credibility

$Y$ ___ high credibility 7 6 5 4 3 2 1 low credibility

$Y$ ___ high credibility 7 6 5 4 3 2 1 low credibility

$Y$ ___ high credibility 7 6 5 4 3 2 1 low credibility

Your instructor is communicating with you in hopes of influencing you regarding your attitude toward a person, an object, an event, or an idea. What credibility rating would you give him?

high credibility 7 6 5 4 3 2 1 low credibility
Write the numbers of each X and Y member in the circles.
In the following spaces, each circle labeled "X" or "Y" represents
a member of the "X" or "Y" group, his profile facing toward the
right side of the paper. Imagine that these members are standing
at a formal reception for a political figure. You will approach
each member individually. Using the self-adhesive dots to repre­
sent yourself, place each where you think you would stand during
a face-to-face conversational situation with each member. Place
each dot on the line.

X

Y

Y

Y

At the same reception, you will approach your speech instructor.
Where do you think you will position yourself in a face-to-face
conversation with him?

Instr.
Social Security Number_______
(last four digits)

Write the numbers of each X and Y member in the circle. In the following spaces, each circle labeled "X" or "Y" represents a member of the "X" or "Y" group, his profile facing toward the right side of the paper. Imagine that these members are standing at a picnic. You will approach each member individually. Using the self-adhesive dots to represent yourself, place each one where you think you would stand during a face-to-face conversational situation with each member. Place each dot on the line.

X____

X____

X____

Y____

Y____

Y____

At the same picnic, you will approach your speech instructor. Where do you think you will position yourself in a face-to-face conversation with him?

Instr.
APPENDIX D

Code Sheet for Key-Punching Data
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<td>Subject number</td>
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</tr>
<tr>
<td>5-7</td>
<td>Age in months</td>
</tr>
<tr>
<td>8</td>
<td>Sex 1 = male 2 = female</td>
</tr>
<tr>
<td>9</td>
<td>Marital status 1 = single 2 = married</td>
</tr>
<tr>
<td>10</td>
<td>Year in school 1 = fr 2 = soph 3 = jr 4 = sr 5 = 5th yr 6 = grad 7 = other</td>
</tr>
<tr>
<td>11</td>
<td>College 1 = A &amp; S 2 = BusAd 3 = Ed 4 = Engin 5 = Hlth Sciences 6 = TropAg 7 = other</td>
</tr>
<tr>
<td>12</td>
<td>Ethnic background 1 = Japanese 2 = Chinese 3 = Korean 4 = Filipino 5 = Caucasian 6 = Hawaiian 7 = Cosmopolitan 8 = Negro</td>
</tr>
<tr>
<td>13</td>
<td>G.P.A. 1 = 2.0 - below 2 = 2.0-- 2.49 3 = 2.5 - 2.99 4 = 3.0 - 3.49 5 = 3.5 - above 0 = no response</td>
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<td>Years in residence 0 = less than 6 months round off and put down actual years</td>
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<td>The same thing as for pre-test Card I.</td>
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