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AMERICAN COMMUNICATIVE GESTURES: THE EMBLEM REPERTOIRE
OF WHITE, MIDDLE-CLASS MALES IN THE WESTERN UNITED STATES

by

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B.A., San Francisco State College, 1967

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

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of the

UNIVERSITY OF CALIFORNIA

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**AMERICAN COMMUNICATIVE GESTURES: THE EMBLEM
REPERTOIRE OF WHITE MIDDLE-CLASS MALES
IN THE WESTERN UNITED STATES**

by

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Abstract

The study investigated the vocabulary of communicative gestures in current usage by white, middle-class males in the Western United States. A visual dictionary on videotape of 67 communicative gestures or emblems were verified in an encoding-decoding experiment.

In the Encoding Study, 15 male subjects were presented with 193 verbal messages to encode into nonverbal body movement patterns. The subjects also provided 25 new messages. All nonverbal patterns were videotaped and those patterns that met the 50% Responding and 70% Similarity criteria were retained. A total of 138 modal encoder patterns and an additional 14 patterns were then imitated by one stimulus-person and randomly recorded on an Emblem Exemplar videotape as tentative emblems.

For the Decoding Study, the 152 nonverbal patterns were shown to three judge groups with each group viewing about 50 items. Each item was scored on the MESSAGE conveyed, a MESSAGE CERTAINTY rating, its USAGE, and a USAGE CERTAINTY rating. The 67 body movement patterns for which the Decode Message matched the Encode Message and with 70% agreement scores on Decode Message and Natural Usage measures were listed as verified emblems.

The emblem repertoire from this research study was compared with those for Sicilians in 1941 and for Columbians and Americans living in Columbia, South America in 1962. Further cross-cultural studies were suggested.

Table of Contents

	Page
List of Charts, Figures, and Tables	iv
Acknowledgements	v
Chapter	
I. Introduction	1
Definitions of Communication	1
When Does Communication Occur?	3
Emblems: Nonverbal Communicative Units	4
II. Review of the Literature	7
Theories of Human Gestural Behavior	9
Emblems: Nonverbal Communicative Units	15
Research Strategies for Investigating Emblems	18
Research on Emblems	19
III. Statement of the Problem	22
IV. General Methodology	23
Logic of the Methodology	23
Derivation of the Verbal Message List	26
V. Method for the Encoding Study	28
Subject Selection Criteria	28
Stimulus Items: Verbal Message List	28
Procedure	29
Response Measure Criteria	30
Reduction in Stimulus-items Presented	31
Encoding Study Results	33
Behavioral Records: Processing and Analysis	33
Emblem Exemplar Tape	33
VI. Method for the Decoding Study	36
Decoder Judges	36
Stimulus-items: Emblem Exemplar Decoding Tapes	36
Procedure	37
Response Measures	37
VII. Decoding Study Results and Analysis	39
Sex differences on Decoding Response Measures	41
Correlation between Decode Message and Natural Usage Scores	41

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Chapter	Page
Correlation between Decode Message and Artificial Usage Scores	41
The Decoding Emblem Repertoire	46
Message Certainty and Usage Certainty Ratings	47
VIII. Discussion of Results	59
Additional Emblems	59
Nonverbal Signals: Some Structural Properties	60
Information Domains Represented by Verified Emblems ...	62
Comparison of Emblem Repertoires	63
Future Research	66
Emblem Usage	66
Individual Differences Emblem Studies	67
Conclusion	67
Appendices	68
A. Initial Verbal Message List	68
B. Volunteered Messages by Encoder Subjects	76
C. Technical Description and Videotaping Room Conditions .	77
D. Encoder Instructions	78
E. Rejected Messages	81
F. Accepted Messages	82
G. Additional Messages	85
H. Item Sequence Log: Emblem Exemplar Tapes A, B, and C ..	86
I. Demographic and Cultural Data Sheet, Instructions and Sample Answer Sheet for Decoder Judges	89
References	93

List of Charts, Figures, and Tables

Chart	Page
1. Proposed Categories for Human Body Movement Patterns	16
Figure	Page
1. Scatter Diagram for Decode Message Scores, Males vs. Females	42
2. Scatter Diagram for Decode Usage Scores, Males vs. Females	43
3. Scatter Diagram for Decode Message and Natural Usage Scores	44
4. Scatter Diagram for Decode Message and Artificial Usage Scores	45
Table	Page
1. Verbal Messages: Number Presented	32
2. Items Scored as Artificial Usage	48
3. Items with Decode Message Score below 50%	50
4. Items with Decode Message Score 70%, Natural Usage 70%, Decode Message matches Encode Message	51
5. Items with Decode Message Score 70%, Natural Usage 50% to 70%, Decode Message matches Encode Message	55
6. Items with Decode Message 50% to 70%, Natural Usage 50% to 70%, Decode Message matches Encode Message	56
7. Items with Decode Message Different From Encode Message	57
8. Comparison of Emblem Repertoires: United States, Sicilian, and Colombian	64

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Chapter 1

Introduction

Though the present study is specifically concerned with human body movement patterns, the underlying, generic interest is with human communication. The same general problems of definition and explication arise whether we are studying verbal or nonverbal communication.

What definition of communication is most applicable or useful given the selected area of study and level of analysis ? Are criteria available to establish or assess that communication (verbal or nonverbal) has occurred ?

Definitions of Communication

A number of definitions for communication between organisms are available for use. For many writers, any behavior that influences the behavior of another organism constitutes communication. In effect, all behavior is communicative and, therefore, to behave is to communicate. Such definitions are much too broad with little analytical utility for subsequent explanation.

Other writers have specified that the behavior of the sender must be able to influence the behavior of more than one other person and the response across persons (species-members) must be similar. In simpler terms, the message associated with the sender's signal must be shared; i.e., two persons can agree (verbally or nonverbally) about the message. This definition of communication, however, would not admit a signal such as one used only between husband and wife as a communicative act. The notion of shared or consensual agreement should

thereby specify that, at the least, it is necessary that the sender and receiver share the same code or message-system before communication can occur. The more complicated implication is that one person can be both a sender and receiver but detailed discussion of this feature is not necessary for the limited scope of the present study.

Another recurrent problem in the definition of communication concerns the relationship between the signal and the message. For example, if a person has measles-spots on his face, is that person communicating to other persons that he has an infectious disease ? In this case, there is no symbolic relationship between the signal (measles-spots) and the message (an infectious disease). The spots are symptomatic (McKay, 1972) of an internal physical state. There is no possibility of a variation in the relationship between that particular signal and that particular message. The relationship is completely non-arbitrary.

Behavior, such as a facial movement pattern, that has a completely non-arbitrary relationship with an internal, physical state is considered to be expressive rather than communicative. This differentiation between expressive and communicative acts can be, at times, difficult and complex. Expressive patterns may acquire a code or communicative acts can appear to have an invariant relationship due to early acquisition and overlearning (See Ekman and Friesen (1972) for a more detailed discussion). The basic factor is that, at some point, the possibility that a different signal could be used to transmit the same message must have existed.

A recent definition of communication as " the making public of experience via a shared code for encoding and decoding." (Wiener et al,

1972) appears to be very useful within the context of this study. The definition includes the requirement that the sender and receiver share the coding system. It also states that a code is involved; i.e., there is some degree of arbitrariness in the relationship between a signal and its referent or message.

When Does Communication Occur ?

We seem to accept quite readily that if two people have engaged in a verbal conversation, then communication has occurred. What criteria are used that result in our immediate acceptance that such an episode is an instance of communication ?

One obvious factor is that the conversation partners use a common language. The communicative units or words have a shared, conventional meaning and they follow each other in strings or sequences that are familiar to both persons involved. Both communicants have been taught the same vocabulary and grammar; i.e., they have both learned and share the same code and coding system.

A second basic factor is the assumption that the speakers have selected the particular words and sentences quite deliberately from a multitude of possible other choices. Mistakes and slips-of-the-tongue occur often but, in most cases, we accept that the communicants are not randomly spewing out verbiage but instead are purposively or intentionally selecting and constructing the verbal code to transmit the specific message. To select and to construct are processes that require behaving and we infer intentionality from the overt responses associated with such internal, cognitive functions. The responses accompanying these processes may not be very apparent in the conversational behavior patterns of adult

speakers at the word-to-word, phrase, or sentence level. We have all overlearned the semantic and syntactic " packages " that establish our verbal code. But, at the conversational episode level where a complete concept has been conveyed, these responses are usually open to public inspection. Of course, the selection and construction processes can be more easily observed in the behavior of young children initially acquiring a language or in the behavior patterns of persons learning a second language.

When do we accept that nonverbal communication has occurred ? Anytime an actor performs a movement in the presence of another person ? Or, anytime that two other persons agree about the message conveyed by a body movement pattern ?

Past literature and theory strongly suggests that a definable class of nonverbal actions used specifically for communication does exist. We are certain that, for each culture group of interest, there is a nonverbal vocabulary that is well-known to most members of the group.

The existant problem here is that the communicative units or " words " of the nonverbal coding system have not been formally established. We have been content to pass along the nonverbal vocabulary by " word-of-body " with few attempts to go beyond anecdotal references to find out what body movement patterns constitute the nonverbal repertoire of communicative acts. Until such a record of communicative units is compiled, the other complex questions about syntax or grammar or acquisition cannot be fruitfully explored.

Emblems: Nonverbal Communicative Units

The present study was formulated to attempt to elicit and provide

a permanent visual record of nonverbal communicative units for a selected culture group. Following Efron (1941) and Ekman and Friesen (1969), these basic analytical units are called " emblems."

Emblems are those body movements; usually, but not exclusively, movements of the arms and hands; that transmit or convey specific messages whose meanings are understood or decodable by most members of the culture group. One example of an emblem in United States culture is putting the forefinger and thumb together to form an elliptical circle with the other fingers extended to convey the message " Okay. " The famous chopping motions of former President Truman are hand movements which occur during speech but they would not be considered as an emblem.

Emblems are most like the words or phrases of spoken language; the most language-like units of human nonverbal behavior. As such, some of the methods used by anthropologists and linguists in the documentation of a newly-encountered verbal language were adapted for the initial description of our own communicative nonverbal behavior.

The general methodology followed procedures first used by Ekman and Friesen in collecting videotape records of the emblem repertoire for aboriginal South Fore tribesmen in New Guinea. A culture group of interest was defined and " informants " were used to collect a corpus of nonverbal communicative acts, the emblem repertoire. The encoded emblem repertoire was then back-translated by a different set of informants from the same culture group. This technique established that the set of nonverbal response patterns generated by the initial group of actors were in current usage and well-known within the culture group.

The present study, then, was an attempt to provide a permanent

record of plausible entries in a visual dictionary of human nonverbal communicative acts. As an exploratory study, it focused on only one culture group and was limited to a descriptive level of analysis of the emblem repertoire. Once this basic groundwork has been laid, it will then be possible to compare this repertoire with others already collected leading to more complex, hypotheses-testing studies in the area of human nonverbal communication.

Chapter 2

Review of the Literature

From earliest history we have been aware that, in conjunction with verbal language, human communication also involves the movements of the hands and head; the stance of one's body; and, the myriad expressions of the face. Renowned Grecian and Roman scholars of ancient time were concerned with the gestures and gesticulations of oratory and drama. Francis Bacon (1640) wrote a philosophical treatise on the origin of gestures (In Critchley, 1939).

The systematic study of human nonverbal behavior, however, began with Darwin's (1872) classic, The Expression of the Emotions In Man and Animals (1965). Though this work concentrated primarily on facial expressions of emotion, Darwin also noted and described other body movements.

Darwin described the gestures (head and hand movements) associated with affirmation and negation. A gesture for helplessness, a " shoulder shrug " often accompanied by particular movements of the arms and hands, was also discussed in some detail. References were made to two gestures signifying contempt, " snapping one's fingers " and " opening one's hand as if quickly dropping something."

Darwin's theoretical focus, as with facial expressions of emotion, was on the origin of gestural behavior. He suggested, for example, that the shoulder-shrug gesture was innate:

" These statements (noting behavioral similarity) relating to Europeans, Hindoos, the hill-tribes of India, Arabs, Negroes, Indians of North America, and apparently to the Australians - many of these natives having had scarcely any intercourse with Europeans - are sufficient to show that shrugging the shoulders accompanied

in some cases by the other proper movements, is a gesture natural to mankind.

Darwin, Chapter XI, p. 268.

In reference to facial expressions of emotion, Darwin could rely on the principle of natural selection to reasonably explain their evolution from originally adaptive behavior patterns essential for species survival. In ascribing innate origins for gestural behavior, Darwin used the now thoroughly-discredited Lamarckian notion of inheritance of learned behavior patterns. His occasional excursions into Lamarckian theory tended to mask the fundamental differences in origin between facial expressions and gestural behavior and led to later theoretical confusion in this area.

In his work with human nonverbal behavior, Darwin used the accepted general scientific methods of cross-cultural comparisons, developmental observations of infants, comparisons with pathological groups, and comparison across species and phylogenetic levels. Though flawed in some aspects, his studies continue to provide useful and still-relevant information.

It would appear that Darwin had provided both theoretical and methodological guidelines for further research in human nonverbal behavior. Yet, in neither area - facial expressions or gestural behavior - was systematic research begun for almost seventy years. Ekman et al (1972) and Izard (1972) have summarized and reviewed the episodic and voluminous literature on the psychological investigation of human facial expressions of emotion. The present review will discuss the relatively few investigators who have advanced proposals for a theory of human gestural behavior.

Theories of Human Gestural Behavior

From 1872 to the 1940s, Klineberg (1938) and LaBarre (1947) were the most influential theorists writing about facial expressions and bodily gestures. Both writers contradicted Darwin on the innate origin of any facial or body behavior and advanced the cultural relativist position that facial expressions of emotion and gestural behavior were completely culturally determined and based on ontogenetic learning.

Ekman (1972) has critiqued the proposals of both Klineberg and LaBarre. He cites both writers as relying almost exclusively on anecdotal evidence from single observers to support their cultural relativist position. LaBarre, in particular, followed Darwin in failing to distinguish between the origins of facial expressions and gestural behavior. At best, then, the evidence of Klineberg and LaBarre was no better than Darwin's and the acceptance of ontogenetic origin for both facial expressions and gestural behavior was more a matter of the contemporary "zeitgeist" than the weighing of the merits of the evidence being presented to support either position.

Krout (1935), working within a psychoanalytic theoretical framework, performed a series of studies documenting a number of hand movements called "autistic gestures." These autistic gestures consisted of rubbing, patting, or scratching one's own body parts and, for Krout, were expressive of intrapsychic conflict. Krout (1954) continued periodic research on autistic gestures for another twenty years yet was rarely referenced by subsequent investigators of human gestural behavior.

For this review, Krout (1935a) is important as the first theorist

to attempt to differentiate analytical categories within the broad historical classes of " gestures " and " gesticulations." He proposed four types of gestures: conventional, pseudo-conventional, non-social, and autistic. His category of " conventional gestures " defined as " socially patterns and shared forms of behavior " is also the earliest forerunner of the emblem category of gestural behavior which is the focus of the present study.

The next major systematic study of human gestural behavior was that of David Efron's classic work, Gesture and Environment (1941). His study compared the gestural behavior of Eastern Jews with that of Southern Italians and the effects of changing cultural environments. Efron did not cite either Darwin or Krout. It is most probable that, working in different disciplines, Efron simply was not aware of Krout's work. We can be sure that Efron knew Darwin's writings but chose not to reference Darwin because of their very different central concerns.

Darwin examined facial expressions of emotion; Efron was concerned with body movements, especially hand movements. Darwin was almost exclusively interested in the expressive behavior associated with emotions. Efron explored communicative behavior; the transmission of information about other objects, persons, and events or information about one's own person. Darwin, of course, was most interested in the innate determinants of nonverbal behavior. Efron's focus was on the cultural determinants of gestural behavior.

Efron did conclusively demonstrate that gestural behavior is greatly influenced by cultural factors but this review will be concerned with his theoretical distinctions between different classes and categories

of human gestural behavior.

Efron concentrated his theoretical efforts on a detailed scheme for differentiating among a number of different types of gestural behavior. He discussed three aspects of hand (and some head) movements: (1) spatio-temporal, with gestures considered only as movements; (2) interlocutional, with hand movements considered as interpersonal signals; and (3) the linguistic or referential aspects of gestures. What meanings do gestures have ? What types of messages are conveyed by gestures ? How are referents related to gestures ? The discussion here will be restricted to Efron's treatment of those gestures considered as language-like elements in a communicative system; as symbols or signs with associated meanings.

Two general classes of communicative gestures were described by Efron: logico-discursive and objective. Logico-discursive gestures had reference to the ideational process and did not have meaning independent of ongoing speech. Objective gestures did have meaning independent of speech and were of three types: (1) deictic, a pointing gesture; (2) physiographic, gestures which visually represent what they mean; and, (3) emblematic or symbolic gestures which " represent either a visual or logical object by means of pictorial or non-pictorial form which has no morphological relationship to the thing represented." Efron also mentioned a " hybrid Emblem " which is, in some way, morphologically related to that which it represents.

Though recognized and acclaimed by behavioral and social scientists at the time of its publication, Efron's study was then almost totally ignored for over twenty-five years. Instead, the impetus for renewed

interest in the systematic study of human gestural behavior did not come until ten years later with the publication of Ray Birdwhistell's monograph, Introduction to Kinesics (1952).

Birdwhistell's major thesis was that human nonverbal behavior was essentially a communicative system with an organization or structure very similar to that of spoken language. For Birdwhistell, the basic communicative units of nonverbal behavior were kinemes, equivalent to the phonemes of spoken language. Kinemes were postulated to combine and form larger units called kinemorphs and complex kinemorphs which correspond to syllables or words or phrases in spoken language. Birdwhistell (1970) also provided a complex notational scheme and suggested a program of research using methods of structural linguists to decipher the meanings of gestural response patterns.

During the last twenty years, Birdwhistell has failed to provide any hard empirical evidence that human nonverbal behavior is, in fact, organized like spoken language. Other investigators (e.g., Kendon, 1969; Schefflen, 1963, 1964) have worked, very loosely within the framework of kinesic theory. But their findings tend to show that the structural properties of human nonverbal behavior appear to be imposed by the ongoing speech behavior rather than finding inherent structure across patterns of nonverbal behavior.

Kendon (1972) has stated that Birdwhistell was only suggesting a particular level of analysis rather than the use of language structure as a theoretical "model" into which one must force-fit units of nonverbal behavior. Dittman (1971), however, has argued - quite forcibly and with persuasive empirical evidence, that kinemes are not at all similar to the phonemes of spoken language. Since the kineme was proposed as

the basic unit establishing the level of analysis in kinesics, this evidence raises serious doubts as to the heuristic value of kinesics.

Wiener et al. (1972) have suggested that an a priori specification of nonverbal descriptive units is necessary before structural analysis of human nonverbal communication can be started. In their view, Birdwhistell has proposed that the set of movements that are meaningful will somehow emerge from a structural analysis of different behavior patterns as they appear across different contexts. This approach leads to stating that any and all nonverbal behavior must be examined across any and all contexts before the meaning of a gestural pattern can be derived; a logical dilemma and a practical impossibility.

Still, Birdwhistell's monograph was an important catalyst for renewed interest and research in human nonverbal communication. Whether his structural model is appropriate for some classes of human nonverbal behavior requires empirical evidence; i.e., a descriptive, evidential base from which to then derive relationships among defined (agreed upon) communicative units.

Since 1960, studies concerned with human nonverbal behavior have increased tremendously (Duncan, 1969; Davis, 1972). However, theoretical papers or investigations describing or explicating different types or categories of human nonverbal behavior were still few in number and very limited in their pertinent proposals (Freedman and Hoffman, 1967; Mahl, 1968; Rosenfeld, 1966).

Ekman and Friesen's paper, The Repertoire of Nonverbal Behavior: Categories, Origins, Usage and Coding (In circulation in 1967 and published in 1969) was the first attempt to describe and establish analytical cate-

gories for the entire envelope of human nonverbal behavior. They provided a broad, much-needed theoretical "metalanguage" which should prove very useful in allowing other theorists to communicate more precisely about human nonverbal behavior patterns.

Ekman and Friesen (1969) revised and modified a number of Efron's distinctions and incorporated some of his proposals into their much more comprehensive and complex scheme. Briefly summarized, five categories were proposed:

- (1) Affect Displays: These movements are distinguishable configurations or patterns of facial muscles that are associated with a number of primary emotions.
- (2) Adaptors: These are movements first learned as adaptive efforts to satisfy self or bodily needs or to perform bodily actions or to manage emotions, or to develop prototypic interpersonal contacts, or to learn instrumental activities.
- (3) Illustrators: These are movements directly tied to speech serving to illustrate what is being said verbally.
- (4) Regulators: These are acts which maintain and regulate the back-and-forth nature of speaking and listening between two or more interactants.
- (5) Emblems: Emblems are those nonverbal acts which have a direct verbal translation or a dictionary definition usually consisting of a word or two, or perhaps a phrase.

Later discussion will examine the emblem category in much more detail as those nonverbal acts whose primary function is to convey or communicate information. Ekman and Friesen (1969) also differentiate between informative, interactive and communicative acts. Communicative acts (primarily emblems) are defined as "those acts which are clearly and consciously intended by the sender to transmit a specifiable message to a receiver." The above definition of communication is controversial

and is one of only a few definitions that include an encoder criterion to establish that communication has occurred.

Wiener et al (1972) have also proposed a number of categories for communicative nonverbal behavior; but only for hand and arm movements. These categories were:

- (1) Formal pantomimic gestures are " stylized movements of the arms and hands for which there is a culturally prescribed consensual meaning.
- (2) Improvisational pantomimic gestures. These movements " seem to serve the function of emphasizing, concretizing, or focusing on a particular aspect of the communication occurring verbally.
- (3) Semantic modifying and relational gestures. These gestures usually accompany speech and are hypothesized to (a) serve the function of modification and specification of the communication, the same function served by adjectives and adverbs in the verbal channel; (b) specify the speaker's relationship to the addressee and to his communication; or (c) specify the relationship of one aspect of communication to another aspect of communication.
- (4) Regulators, addressor and addressee. These are movements which maintain and regulate ongoing conversational episodes.

Emblems: Nonverbal Communicative Units

The following TABLE 1 (p. 16) summarizes the different categories for human body movement patterns that have been proposed by theorists over the last century.

Emblems, movements that have an independent meaning which can be conveyed without accompanying words, have been either indirectly described or included as a specific category by almost every theorist. Darwin, within his gesture category, described emblematic acts such as the head nod for " Yes." Krout's conventional gesture category is practically identical to the emblem category. Freedman and Hoffman had a

Chart 1

Proposed Categories for Human Body Movement Patterns

HISTORICAL	Gestures		Gesticulations		
Darwin,1872	Gestures	Body movements associated with emotions			
Krout,1935	Conventional, Psuedo-conventional, Autistic, Non-social				
Efron,1941	Objective	Interlocutional		Logico-discursive	
	Deictic	Self		Batons	
	Physiographic	Other		Ideographs	
	Emblematic	Objects			
	Hybrid emblems				
Birdwhistell, 1952	Kinesics: Kines, kinemes, kinemorphs, complex kinemorphs				
Rosenfeld, 1966	Regulators, self-manipulations, gesticulations				
Ekman & Friesen, 1967 -- 1969	Affect Displays	Adaptors	Regulators	Illustrators	Emblems
	Facial	Self	Speaker	Batons	Arbitrary
		Other	Listener	Ideographs	Iconic
		Object		Deictic	
				Spatial	
				Kinetographs	
				Pictographs	
				Rhythmic	*Intrinsic
Freedman & Hoffman,1967	Object-focused	Body-focused	Referential movements		
Mahl,1968	Communicative	Autistic			
Wiener, <u>et al.</u> 1972	Regulators	Semantic mod.& relational		Pantomimic gestures	
	Addressors	Deictic		Formal	
	Addressees	Orientation of palms		Improvisational	
		Semantic forms			

" referential " gesture. Mahl, within the communicative category, described specific emblems; e.g., the (in)famous upright middle-finger gesture. Efron and Ekman and Friesen had a specific emblem category. Wiener et al include emblematic acts in both their " Pantomimic " and " Semantic " categories.

Ekman and Friesen (1972) have refined and made more explicit the criteria for classifying nonverbal response patterns as emblems. These criteria are:

" Emblems are those nonverbal acts (a) which have a direct verbal translation usually consisting of a word or two, or a phrase, (b) for which this precise meaning is known by most or all members of a group, class, subculture or culture, (c) which are most often deliberately used with the conscious intent to send a particular message to the other person(s), (d) for which the person(s) who sees the emblem usually not only knows the emblem's message but also knows that it was deliberately sent to him, and (e) for which the sender usually takes responsibility for having made that communication. A further touchstone of an emblem is whether it can be replaced by a word or two, its message verbalized without substantially modifying the conversation."

In the above statement, these writers have designated both encoding (c and e) and decoding (b and d) criteria for nonverbal response patterns to be considered as communicative acts. Their first statement (a) asserts that a code is involved; the emblem has a specific referent.

Wiener et al (1972) have emphasized the importance of using encoding criteria (the sender's actions) rather than using only decoding criteria (receiver consensus) for determining which behavior patterns are communicative acts or emblems. However, they disagree with the use of the construct of intentionality in defining communication. They define communication as the " making public of experience via a

shared code for encoding and decoding." Whether the phrase "making public " implies intentionality is open to argument but the difference in words used is not important here. Rather, it is more important to assess the differences in research strategies suggested by the positions of the various major theorists.

Research Strategies for Investigating Emblems

Efron's basic research strategy for investigating human gestural behavior was naturalistic observation of conversations. Eventually, he also used an "informant" approach to compile his listing of Sicilian emblematic gestures (Efron, 1972). Saitz and Cervenka (1962: Reissued 1973) also used a naturalistic observation approach in compiling their listing of Colombian, South America and United States gestural patterns.

Wiener et al. (1972) have proposed that in-laboratory verbal conversations between two interactants would be the most likely situations for studying nonverbal communicative acts. They consider spoken language as the exemplar of communicative activity. They further specify that verbal communication is invariably accompanied by various nonverbal actions during the course of face-to-face conversations. They identify these acts as (a) eye movements which index "search" and "retrieval" activities, and (b) addressor and addressee regulators. Speech activity bracketed by these nonverbal acts constitutes communication.

Other nonverbal acts which are bracketed by the same types of nonverbal indicators are then considered to be like verbal communicative acts (speech) and therefore are prime candidates for considerations as nonverbal communicative actions. Inferentially, the meaning of such acts can be derived from the ongoing speech. A proposed procedural variation

would restrict speech activity to increase the frequency of occurrence of nonverbal communicative acts.

There is a certain convolutional elegance in the strategy proposed above. But, there is little assurance that any range of different nonverbal communicative acts would occur across controlled conversational settings. Emblems are much more likely to be used in specialized settings than during ordinary conversations. Again, it seemed necessary to first generate a descriptive evidential base of communicative units before more complex studies could proceed.

Ekman and Friesen (1969; 1972) have suggested and briefly discussed the strategy of using "informants" as an initial procedure for discovering a wide range of communicative gestural patterns. The investigator simply asks the informant to show him a nonverbal body movement for a verbal message. As with many other simple proposals, however, the execution of the procedure to elicit nonverbal response patterns becomes somewhat complicated. Still, using informants in much the same way as when studying verbal communication appeared to be the most efficient research strategy to obtain and record, with a reasonable degree of accuracy and completeness, the repertoire of emblematic acts for a selected and defined culture group. Of course, this research strategy may be very inappropriate for investigating other classes of nonverbal behavior patterns such as regulators or facial affect displays.

Research on Emblems

Efron (1972) has recently provided a list of Sicilian gestures not published in the 1941 edition of his book. Saitz and Cervenka (1973) compared gestures used by natives of the United States with those used in Colombia, South America. These studies provided evidence that em-

blematic behavior occurred across cultures and varied with cultural influences.

Ekman & Friesen (unpublished) have gathered videotape records of emblematic acts used in New Guinea, Argentina, Japan, and the United States. By inspection of these cross-cultural records, it appears that some emblems may be multi-cultural and that there may be minimal emblematic units, emblem phrases, and an emblem syntax (Ekman and Friesen, 1969; 1972)

These investigators have also studied a particular emblem, the "hand shrug." As part of a larger study concerned with depressive psychiatric patients, they found that the hand shrug gesture communicated helplessness uncertainty and occurred frequently during hospital admission interviews but not at all during hospital discharge interviews (Ekman and Friesen, 1968). A second study suggested that the hand shrug emblem occurred with much greater frequency during an interview when normal female subjects were engaged in deception than during an honest interview session (Ekman & Friesen, 1973). These two findings indicate that, once we know a particular emblem repertoire, other specific emblems can be used as variables in very different types of studies and situations.

Kumin and Lazar (1971) have conducted the only developmental study specifically concerned with the early acquisition of an emblem repertoire. They found that the repertoire varied with age with four year old children performing and recognizing more emblems than a subject sample of three year old children.

The studies listed above were very useful in providing some tentative examples of emblem repertoires collected across cultures and time periods.

But, in most cases, the method or procedures used were not clearly specified. Was more than one person used for obtaining an encoding emblem repertoire ? Was the decoding of the emblem messages dependent upon the impressions of only one or two persons ?

The current state of research on human nonverbal communication seemed to require at least one systematic study using both qualitative and quantitative measures to obtain a representative sample of a selected culture group's emblem repertoire before more sophisticated studies could proceed. The present study was conceptualized as (a) providing a " control group " set of emblems for use in future cross-cultural comparative studies; and, (b) providing one visual dictionary of emblems as an empirical data-base for later studies concerned with the infra- and supra-structural organization of human communicative nonverbal behavior.

Chapter 3

Statement of the Problem

Are all nonverbal communicative acts or emblems culture specific? Are some emblems pan-cultural? What is the ontogenesis or developmental sequence in the acquisition of emblems? Is there a syntactical structure within emblematic response patterns? Do emblems have systematic temporal relationships with other types of nonverbal acts or with speech? Are there "visual sentences" in human nonverbal behavior?

If we are to advance knowledge about human nonverbal communication and attempt to test the interesting and important hypotheses listed above, it is essential that the first step of describing and mapping the emblem repertoire of specified culture groups be undertaken. Investigators in this area need a visual dictionary that (a) identifies the combinations of face and body movements that comprise the communicative units, (b) identifies the specific meaning cluster associated with an emblematic act, and (c) specifies the culture group used in the compilation of the visual dictionary.

The present study was designed to provide a reasonably complete and accurate visual dictionary of emblems and their associated messages for the culture group of middle-class, white males in the Western United States (San Francisco Bay Area). The resultant data on size and composition of the emblem repertoire, the information domains encoded into emblems, and what movements combine to constitute emblems should provide a descriptive base sufficient for initiating studies on the research questions noted earlier.

Chapter 4

General Methodology

The methodology used in the present research was an admixture of techniques used in various social science disciplines. The use of informants and the technique of " back-translation " were borrowed from anthropology and linguistics. The systematic use of defined groups as encoders and decoders using quantitative measures to validate and confirm the impressions of only one or two observers was borrowed from social psychology.

For clarity of exposition, the present research will be reported as two studies, an Encoding Study and a Decoding Study. The encoding phase involved a series of verbal messages being translated (encoded) into nonverbal response patterns. In the Decoding phase, the series of encoded nonverbal acts were then back-translated (decoded) into verbal messages.

Logic of the Methodology

Encoding criteria for establishing that a body movement pattern is an emblematic act are:

- (1) The movement pattern is used with conscious intent to send a message.
- (2) The sender usually takes responsibility for having made the communication.
- (3) The relationship between the message and response pattern is, to some degree, arbitrary; a code is involved.
- (4) The code is conventional and shared. The nonverbal response pattern associated with a message is known and used by most members of the defined culture group.

Again, as noted earlier, either " pure " naturalistic observation or controlled observation procedures could have been used. But,

since emblems are defined as conscious attempts to communicate, the procedure of using informants from a selected culture group in a controlled setting was used. The investigator simply asked the informants to show him - to deliberately and consciously " make public " their past experience - the nonverbal response patterns associated with a number of verbal messages.

A number of encoder-informants were used to (a) establish that the response patterns were conventional and known by more than one or two members of the culture group and (b) to attempt to discover as many emblems as possible. A single informant might not have recalled, at the moment, some emblems or he might have failed to be familiar with a few common emblems in his past experience.

An analogous procedure with spoken language would be for a linguist to ask an informant to provide a synonym for " woman " and receive the verbal reply " a female person." Here, the investigator asks the informant for a nonverbal synonym for " woman " and, in United States culture would probably receive in reply the performance of a " coke-bottle shape " motion with both hands.

There was, however, a problem with asking for nonverbal responses. The encoder-informants were very adept and willing, despite specific instructions to the contrary, to invent nonverbal synonyms for the verbal messages. The informants would mime or play charades on the spur-of-the-moment.

The problem of on-the-spot inventions and " instant " charades stems from, in Efron's terms, " hybrid emblems." These are body-movement patterns that, though they have a symbolic signal-message relationship,

the emblem resembles its message in some form. Ekman and Friesen (1969) have referred to the same class of nonverbal response as emblems which have an iconic relationship with their respective messages. In spoken language, "onomatopoeia" refers to a similar relationship between words and their referents. This relationship appears to occur very infrequently in the English language. In the visual modality of body movement patterns, the iconic relationship appears to be present much more frequently across the relatively limited number of emblems in the culture group's repertoire.

With nonverbal response patterns, an iconic relationship is most likely to be present when emblems represent a bodily action pattern. In many cases, the emblem is a miniaturized version or stylization, in both spatial and temporal dimensions, of a more complex body movement pattern which occurs frequently in everyday life. Or, the movement pattern can be an enactment of an instrumental sequence without the object but the pattern of movement is stylized. The basic problem was how to differentiate between widely-known and easily enacted charades and legitimate emblematic acts. At the same time, a primary objective was to obtain and record as many emblems as possible. To avoid inhibiting the performance of emblems and discarding response patterns simply on the basis of one observer's past experience, all body movement patterns that met encoding criteria were retained and used in the decoding phase of the research.

The decoding procedure, then, was necessary to (a) validate that the emblem repertoire was well-known (conventionally coded) within the selected culture group and (b) to eliminate the remaining inventions and

charades from the recorded repertoire by obtaining consensual agreement on the usage of the encoded body movement patterns.

A different set of decoder-informants from within the same culture group were used to view the encoded nonverbal response patterns. The decoder group then back-translated the verbal messages from the nonverbal patterns. This procedure provided a quantitative cross-validation of the emblem-message system in current usage. A measure of the similarity of verbal responses across decoders provided evidence that the emblems were, in fact, well-known. Another measure of whether the gestures were in common usage in everyday life provided a quantitative basis for discarding inventions or charades.

An emblem repertoire defined in this manner could be neither exhaustive nor completely accurate. But, a methodology combining encoding and decoding procedures with quantitative cross-validation of the emblem-message coding system seemed to be the most efficient and reliable way to assure obtaining a reasonably complete and accurate emblem repertoire for a selected culture group.

Derivation of the Verbal Message List

An earlier reference mentioned the necessity for a symbolic signal-message relationship for a nonverbal response pattern to be considered as a communicative act or emblem (Chapter 1, p. 2). Hockett and Altmann (1968) have also referred to this relationship in terms of the linguistic feature of " openness " or " productivity."

A communication system with the feature of openness allows for communicative units to represent any concept or message. Or, the same signal could, over time, represent different messages. For example, the

emblem of two fingers upraised in a "V" pattern commonly represented "Victory" in the 1940s but during the 1960s-1970s now more often represents "Peace." And, of course, the feature of openness permits new emblems to be coined quite easily and others to become archaic.

Accepting then that any concept or verbal message could be encoded into any type of emblematic act, where does one start to compile a list of verbal messages for presentation to encoder-informants? Actually, though a human nonverbal communication system is theoretically open, the number of messages represented by emblems in current usage appears to be quite limited. In much the same way, though on a larger scale, the vocabulary of spoken language is also relatively limited in the number of words in common usage by the majority of adult speakers.

The compilation of the Verbal Message List (VML) started with an a priori listing of items based on the past experience of the investigator and four associates as adult "speakers" of emblematic acts. Any previous studies concerned with gestures and the past literature were then scanned for additional messages.

For the present research, the bulk of the message list was derived from the series of recordings of emblematic acts made by Ekman and Friesen for the cultures of New Guinea, Argentina, Japan and the United States. In most of these cases, the investigators explained the special task of talking with one's body and, in addition to their a priori list, asked for volunteered messages from the subjects. The messages found in Efron's (1972) study and Saitz and Cervenka (1973) were also included.

The initial VML used for presentation in the Encoding Study consisted of 193 items (Appendix A: Initial Verbal Message List).

Chapter 5

Method for the Encoding Study

Subject Selection Criteria

Fifteen volunteer subjects (encoder-informants) were selected and met the following demographic and culture group criteria:

- (1) Third generation family in the United States.
- (2) Middle-class background in an urban setting with educational level above high-school graduate.
- (3) Age range between 21 to 35 years old.
- (4) Caucasian.
- (5) Male.

The first four criteria were used to assure sampling from the majority culture group in the United States. In addition, the subjects had to be assimilated into the mainstream of United States culture; i.e., they were not members of special ethnic organizations or unusual cultural settings.

Only caucasian, male subjects were used as encoders primarily because the investigator was a middle-class, caucasian male. Members of other ethnic groups could have a different set of emblems they would not perform for an investigator who was not a member of their group. Also, there could be emblems that are used only between females. Or, there could be emblems associated with sexual or aggressive messages that females would not perform for a male investigator.

Stimulus-Items: Verbal Message List

A Verbal Message List (VML) of 193 items (Appendix A) was used for presentation to the Encoder-subjects. The Encoder-subjects volun-

teered 25 new messages for an eventual total of 218 encode verbal messages (Appendix B: Volunteered Messages by Encoder-subjects). Most of the messages volunteered by the subjects already appeared on the original verbal message list.

Procedure

Upon entry into the room, the investigator demonstrated the operation of the video camera and other videotaping equipment in full view of the subject (Appendix C: Technical Description and Videotaping Room Conditions).

The subject was instructed to sit in a chair facing the video camera and the detailed instructions were read to him. This period of about ten minutes also served to allow the subject to become accustomed to the video camera being pointed directly at him. An informal atmosphere was maintained in showing the equipment, presenting the instructions, and in dress (no white coat or tie). After the instructions were completed, the subjects provided demographic information and signed the consent form permitting videotaping of their actions (Appendix D: Encoder Instructions). The instructions explicitly defined an emblem and stated that charades or pantomimes or on-the-spot inventions were not wanted.

Two practice items (Okay and Yes; or, Hello and No) were presented. The subject could say he didn't know an emblem for the message or, if he did perform one, he was asked if he knew any other emblems for the same message. After the two practice items, the procedure was stopped and the subjects were asked if they had any other questions. If not, the remaining items on the Verbal Message List were then presented.

After 20 items were presented, the subjects were asked to volunteer any messages they had recalled for which they knew an emblem. After doing so, they were then advised to volunteer messages at any point during the procedure. After every subsequent 30 messages and at the end of the VML, the investigator still stopped and asked for any recalled messages. All volunteered messages were written down and any new messages not on the original VML were then presented to the subjects. All new messages were added to the VML for presentation to subsequent Encoder-subjects.

The investigator attempted to jog the subjects' memory at every opportunity by verbally describing situations where emblems might be used; e.g., across a noisy street, in a classroom, in a theater, et cetera. All nonverbal and verbal responses by the subject and the verbal responses of the investigator were recorded on videotape throughout the entire procedure.

Response Measure Criteria

Two criteria for assessing that a nonverbal response pattern for a verbal message was an emblem were established prior to the encoding sessions. These criteria were:

- (1) At least 50% of the subjects must perform a nonverbal response pattern, of any kind, for a particular message.
- (2) Across subjects, at least 70% of the nonverbal patterns for a particular message must be rated as being similar in appearance.

By definition, an emblematic act should be well-known by most members of a culture group. By setting a responding cut-off point at just above 50%, allowance was made for some subjects just not recalling

the emblem at that moment or that one or two subjects had not learned that emblem in their past experiences. The subsequent 70 % cut-off for the Similarity Criterion eliminated idiosyncratic charades and inventions. As discussed earlier, some non-emblematic patterns still remained in the behavioral records and required introduction of procedures in the Decoding Study for differentiating such patterns from legitimate emblems.

With a subject sample of 15 Encoders, a message must have elicited at least 8 nonverbal responses to meet the 50 % Responding Criterion. To then meet the 70 % Similarity Criterion, at least 5 of the 8 responses had to be rated as being similar. If 9 responses occurred, then 6 had to be similar. If 10 responses, then 7 were similar. If 11 responses, then 8 were similar.

Reduction in Stimulus-items Presented

To reduce time and material costs yet still meet design requirements, a procedural variation was introduced after the videotaped behavioral records for 10 Encoder-subjects had been collected. At this point, the records were reviewed and if the nonverbal responses for a message met both the Responding and Similarity criteria for 15 presentations (at least 8 nonverbal responses with 5 similar), then that message was not presented to the remaining 5 subjects. Also, if a message had not received at least two nonverbal responses across the 10 subjects, it was eliminated. The message could not meet the necessary requirement of 8 nonverbal responses across 15 subjects. The following TABLE I shows the number of items presented at different sessions (See TABLE I: VML Items Presented at Different Presentations).

TABLE I

VML Items Presented at Different Presentations

Presentation Sequence	Number of VML Items
1	193
2	198
3	202
4	204
5	209
6	212
7	214
8	217
9	218
10	218
11	101
12	101
13	54
14	29
15	29

Encoding Study Results

The nonverbal response patterns for 21 messages were rejected for not meeting the 50 % Responding Criterion. An additional 22 messages were rejected for not meeting the 70 % Similarity Criterion. (Appendix E: Rejected Messages). Of the remaining 175 messages, another 37 were combined with other messages as eliciting the same emblematic response pattern; e.g., the emblem pattern was the same for both " No " and " I disagree." A total of 138 response patterns were accepted as tentative emblems (Appendix F: Accepted Messages).

Behavioral Records: Processing and Analysis

Duplicate edit-tapes of the response patterns of the 15 encoders were made. These tapes organized the recorded segments so that the nonverbal responses were " stacked " across subjects for each verbal message to facilitate later analysis. Two observers then viewed the edit-tapes and determined which set of behavioral patterns met the Responding and Similarity criteria. Salient aspects and components of the response patterns were noted and used as observational markers to enable the two observers to reach agreement on the criteria. For each set of response patterns that were accepted, the investigator then immediately imitated the modal nonverbal pattern of the particular set of responses. These 138 examples of the modal response patterns were recorded on videotape as they were performed.

Emblem Exemplar Tape

Using the videotaped examples and the notes on salient features of the response patterns, the investigator then imitated for videotaping a series of 138 exemplars for the modal response patterns derived from

the performances of the 15 Encoder-subjects. These Emblem Exemplars were then reviewed by the investigator and an associate to assess whether the response patterns looked " natural " when compared to the past experiences of the two observers. Also, the patterns had to remain similar to the modal pattern derived from the 15 Encoder-subjects.

The series of 138 Emblem Exemplars were then viewed by two " experts " who made independent ratings on the technical quality and naturalness in the performance of each emblem exemplar. Eleven segments were retaped to improve technical quality. The expert observers scored 28 segments as " not-natural." A third expert observer viewed the 28 segments and independently scored them for naturalness. This procedure resulted in 26 segments being retaped. Another viewing session by the experts required that 12 segments be retaped. The experts accepted all 138 segments on the next viewing. The unique qualifications of the expert observers are noted in the Acknowledgements section of this paper.

Another 14 Emblem Exemplars were added to the tape at this time for a total of 152 items. Nine added items were emblems not on the message list or volunteered by the subjects. But, the observers as members of the selected culture group, were almost certain that they were part of the group's emblem repertoire (e.g., the " thumbing " movement for hitchhiking in this culture). The other five items were gestures listed in a magazine article as being in the current repertoire of a different culture, France. These items were provided to assure at least a few patterns where, in appearance, the movements seemed to be legitimate emblems but the message should not be decodable by many members of the select culture group (Appendix G: Additional Messages).

The decision to use an Emblem Exemplar tape rather than the recordings of the actual enactments by the 15 Encoder-subjects was based on a number of factors.

First, the technical quality and clarity could be precisely controlled across the 152 segments. The records on the 15 Encoder-subjects were collected over a period of 6 months with different cameras and recorders available resulting in some differences in technical quality across the recordings.

Second, the encoders were facing a video camera for the first time and some inhibition and embarrassment in performing was present for all the subjects. The best enactment, in many cases, was very poor in comparison with performances in the context of everyday life.

Third, a method would have had to be devised for determining which enactment was the " best " for each set of response patterns. Either judge-groups of naive observers or experts could have been used but they would have had to view over 2000 segments. Just simply looking at the complete set of recordings, without making any judgements, required between 8 to 9 hours.

Finally, with an Emblem Exemplar Tape, the stimulus-person, the clothing and background setting could be kept constant across the 152 segments. This procedure eliminated those factors as contributing to the variability in scoring or rating by the Decoder-judges in the subsequent Decoding Study of the present research.

Chapter 6

Method for the Decoding Study

In the Encoding Study, subjects were restricted to white, middle-class males to insure that the emblem repertoire was derived from a clearly-defined culture group. For decoding emblems, the restraints were less stringent requiring only that the decoder-judges had lived in the same general cultural setting as the selected culture group.

Decoder Judges

A total of 62 naive judges from undergraduate, graduate and adult-education college classes in three judge groups were used. Nine judges were eliminated for not meeting the criterion of having lived in the United States for most of their lives. Of the remaining 53 decoder-judges, 27 were female and 26 were male. Group A consisted of 22 judges with 10 females and 12 males. Group B consisted of 16 judges with 9 females and 7 males. Group C consisted of 15 judges with 8 females and 7 males.

Stimulus-items: Emblem Exemplar Decoding Tapes

Pilot sessions indicated that viewing and judging about 50 items was a limit before lagging interest and fatigue became evident. Three judge tapes with about 50 segments in random order were made (Appendix H: Item Sequence Log for Emblem Exemplar Tapes A, B, and C). Each segment consisted of two identical enactments in immediate succession on the videotape. This format was used to assure that an emblematic action pattern did not occur so quickly that it would be visually missed by the decoder-judges.

Procedure

The Emblem Exemplar tapes were shown to the judge groups using a 19 inch television monitor with a black-and-white picture presentation. Each judge group viewed a different set of about 50 segments.

The judges first read the detailed instructions which were then verbally summarized by the experimenter (Appendix I: Instructions and Sample Answer Sheet for Decoders).

For each segment, the judges were alerted by the experimenter saying "Ready" and then the segment was played for viewing. After each segment, the recorder was stopped and the appropriate number for the answer block was called out. At this point, the judges wrote their answer for that item. The experimenter waited for everyone to finish and then repeated the sequence for the remaining segments on the videotape.

After three segments were viewed, the procedure was stopped and any additional questions about the tasks were answered.

Response Measures

For each of the Emblem Exemplar segments, the judges gave four responses:

- (1) The judges wrote down the MESSAGE conveyed by the behavior using words of their own choice. They were instructed to write down as many different messages as they knew. If they did not know a message for the behavior, they wrote "None" and went to the next answer block.
- (2) The judges made a rating on a scale from 1 to 7 about how certain they were about the message. If they gave more than one message, they circled the messages for which their MESSAGE CERTAINTY rating was applicable.
- (3) The judges decided whether the USAGE of the gesture was ARTIFICIAL or NATURAL. They were told to base this distinction on whether the gesture was used in common, everyday situations or only in pantomime routines on stage or games of charades.

- (4) The judges made a rating on a scale from 1 to 7 to indicate their certainty about the current usage of the gesture, a USAGE CERTAINTY rating.

The most difficult task was the distinction between Artificial and Natural usage of a gestural pattern. Most of the questions asked were concerned with this task but, from the collected data, it appears that the decoder-judges did make this distinction in a consistent manner across the different segments.

Four response measures were obtained for each of the Emblem Exemplar segments:

- (1) The proportion of judges who agreed on the message conveyed by the behavior (DECODE MESSAGE AGREEMENT %).
- (2) The proportion of judges who agreed on the usage of the gestural pattern (DECODE NATURAL USAGE AGREEMENT % or DECODE ARTIFICIAL USAGE AGREEMENT %).
- (3) The meaning rating for the message -- MESSAGE CERTAINTY
- (4) The mean rating for the usage -- USAGE CERTAINTY

Chapter 7

Decoding Study Results and Analysis

To review the encoding results (Chap. 5, pp.33-34) 138 message/behavior patterns that met the 50% Responding and 70% Similarity criteria were retained for use in the Decoding Study. These messages, in effect, had an ENCODED MESSAGE AGREEMENT % score of 70% and above.

But, as noted earlier, it was fairly obvious that some of the gestural patterns were charades or pantomimes; not emblems used in everyday life. For the Decoding Study, it was necessary to use a procedure that would discriminate the behavior patterns that were used as emblems and those that were not.

In addition, because 70% of the Encoder-subjects performed a similar behavior pattern when provided with a specific verbal message did not assure that the same specific message would be decoded by observers of the behavior pattern. A given verbal message can provide contextual information that cannot be derived from the behavior pattern performed in an, essentially, context-free format.

For example, when given the message "tall person" most of the encoders raised one hand to the side, a bit above their own head, and directed their gaze at the hand for a second or so. However, observers of this behavior decoded the message "about this tall or high" a more general message than the initial encoded message.

Or, a subtle difference in the behavior pattern may not be salient when the gesture occurs in the context-free setting used here. For example, the behavior pattern of a raised index finger placed near the temple or fore-

head accompanied by raised eyebrows and widened eyes may be elicited by the verbal message "I've got an idea." But, perhaps half the observers of this gesture may decode the message "Wait one second or a minute." The primary difference in the gestural pattern for the latter message is that the index finger is farther away from the forehead toward the other person. From a frontal viewpoint on a television monitor, this difference may not be seen. Or, the cue may be too subtle for differentiation without additional contextual information.

This study was not designed to find out why decoded messages were different from encoded messages. But, the use of a "back-translation" procedure in a Decoding Study could designate which behavior patterns did convey specific messages that matched the encoded messages without requiring other contextual cues.

The primary objectives of the Decoding Study, then, were (a) to provide a quantitative basis for determining which items of the encoded emblem repertoire were charades or pantomimes rather than emblems in current usage; and, (b) to measure the degree of specificity of the back-translated or decoded messages in reference to the initial encoded messages.

For all analyses, the measurement taken was the proportion of judges who agreed on (a) the modal decoded message, and (b) the nodal response to the question of Artificial or Natural usage. This scoring method was the most direct way of estimating which gestural patterns met the definitional criteria for emblems that:

- (1) The specific message associated with the gestural pattern is well-known by most members of the culture group.
 - A) Decode Message Agreement % Score

- (2) The specific behavior/message code is in current everyday usage.

A. Decode Natural Usage Agreement % Score

Sex Differences on Decoding Response Measures

There could have been a difference between male and female judges in their decoding responses although this was not expected or predicted from theory. To determine whether this was so, the scores for males and females were compared on both the Decode Message and Decode Usage measures (Mann-Whitney U; Siegel, 1966). Since there was no significant difference on either measure (See Figures 1 and 2 for respective scatter diagrams), the combined scores for males and females were used for all subsequent analyses.

Correlation between Decode Message and Natural Usage Scores

It was logical to expect that people would agree on the meaning of gestural patterns if these patterns were in current, everyday (Natural) usage. A significant correlation ($r=.37$, $df=118$, $p>.001$) was found for Decode Message and Natural Usage scores (Figure 3).

Correlation between Decode Message and Artificial Usage Scores

In a somewhat paradoxical manner, it was also expected that people would agree on the meaning of gestural patterns that were not in current, everyday usage. One factor leading to this expectation was an artifact of judgemental tasks. If people do not know the meaning or are very uncertain about an item, they will also vacillate in other decisions, such as usage, made about the item. Another factor is that people do experience certain gestural patterns only in the context of on-stage pantomime routines or in games of charades and can learn the meanings and know

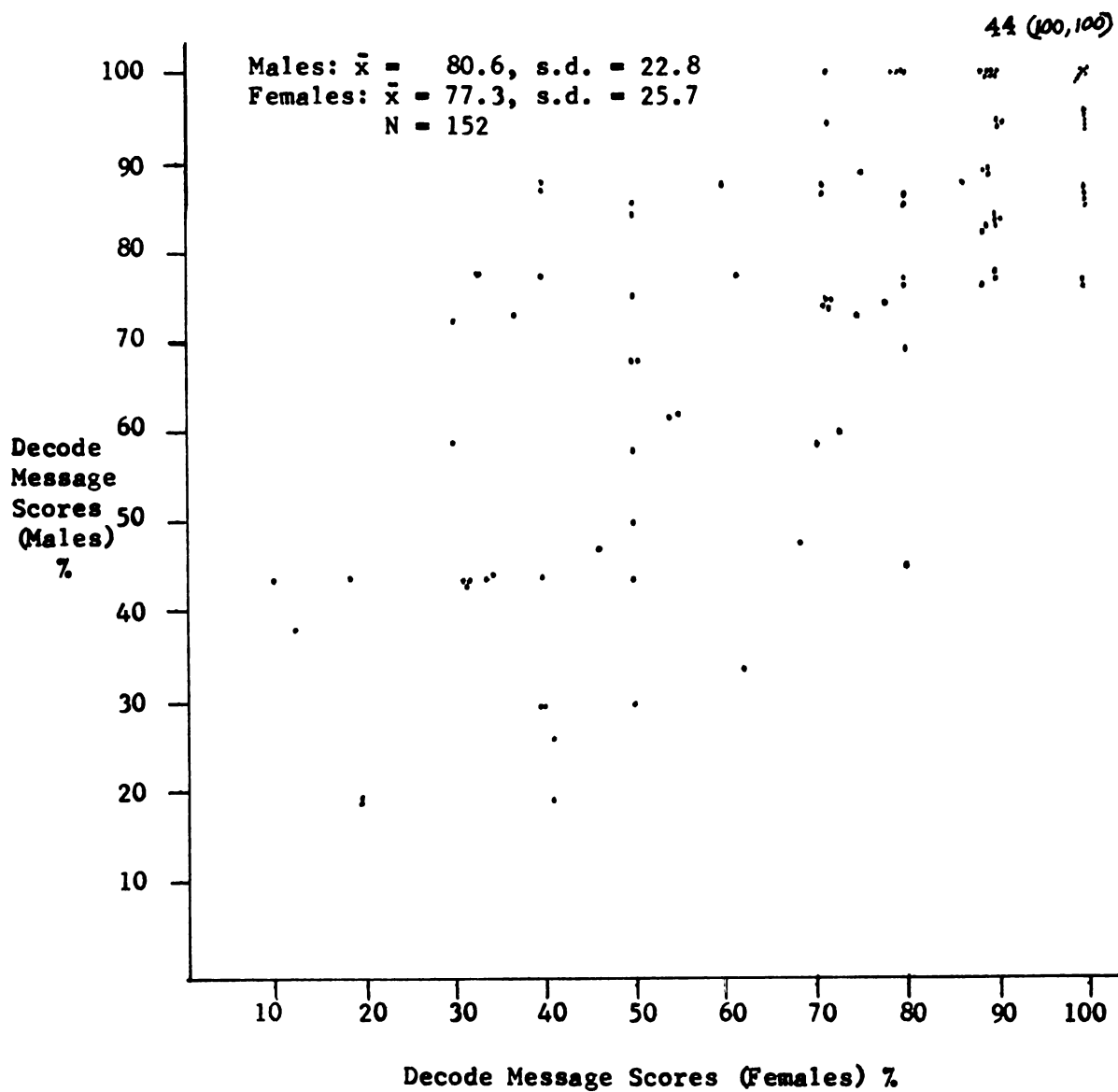


Figure 1: Scatter Diagram for Decode Message Scores, Males vs Females

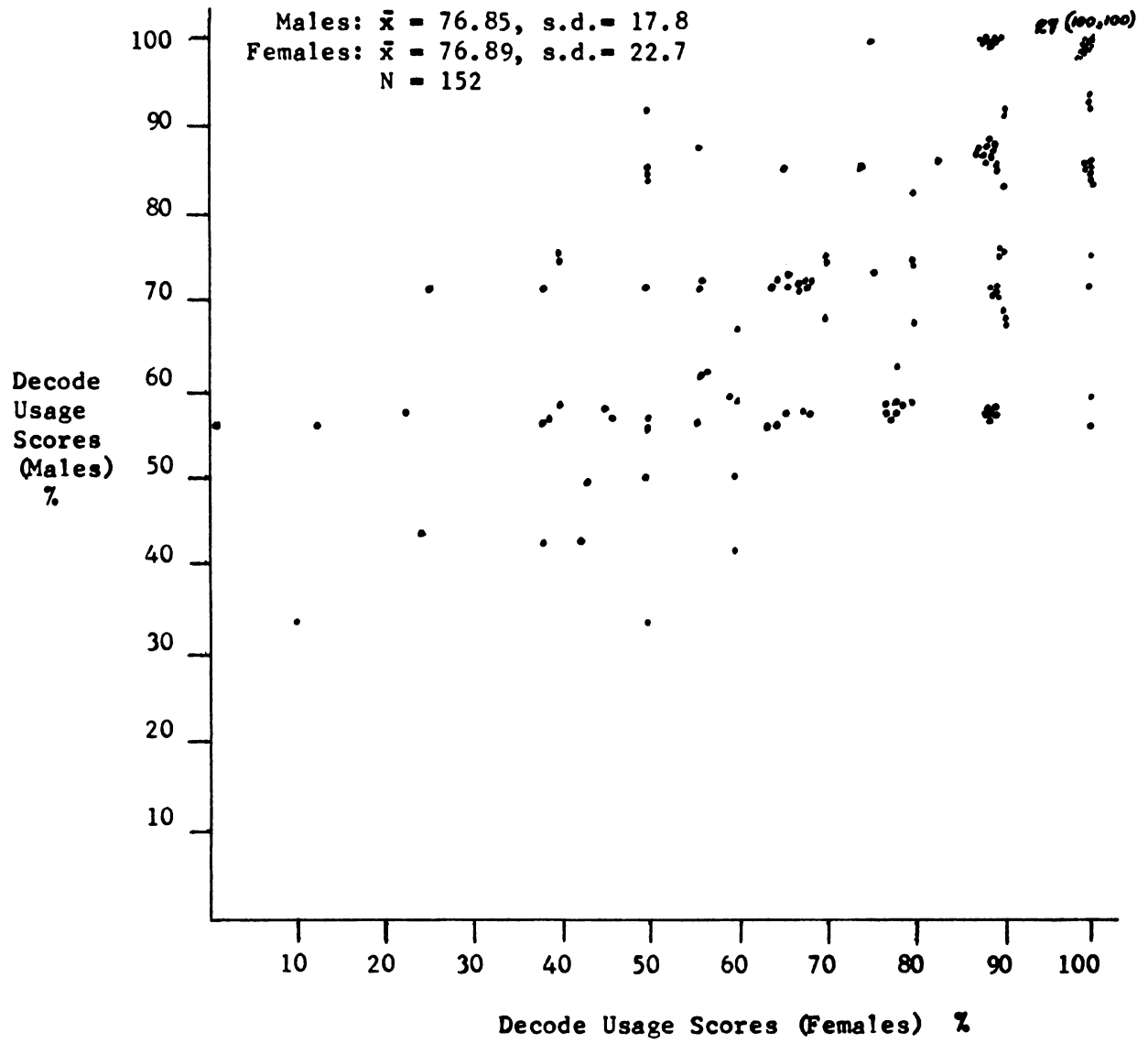


FIGURE 2. Scatter Diagram for Decode Usage Scores, Males vs Females.

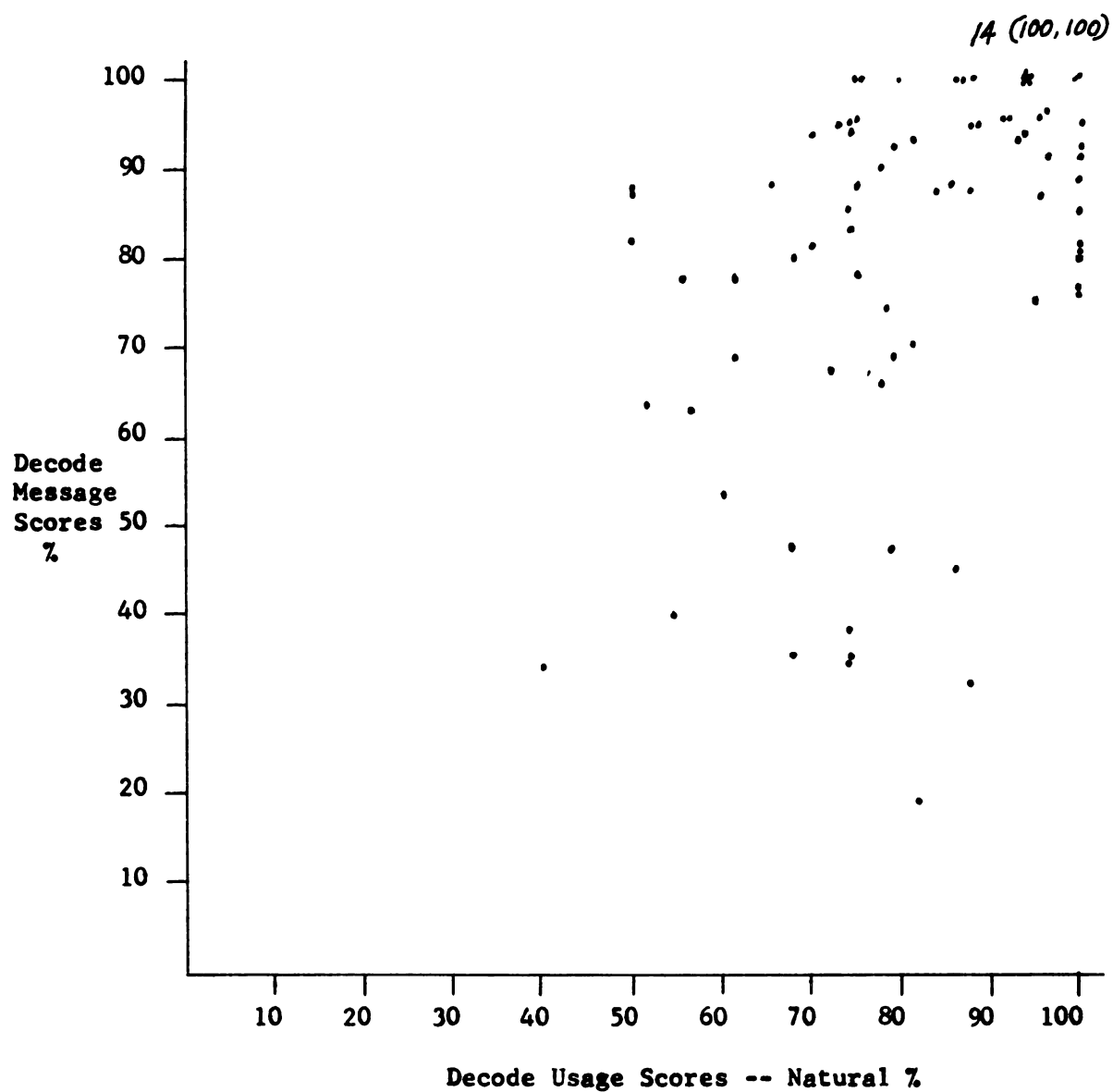


Figure 3: Scatter Diagram for Decode Message and Natural Usage Scores

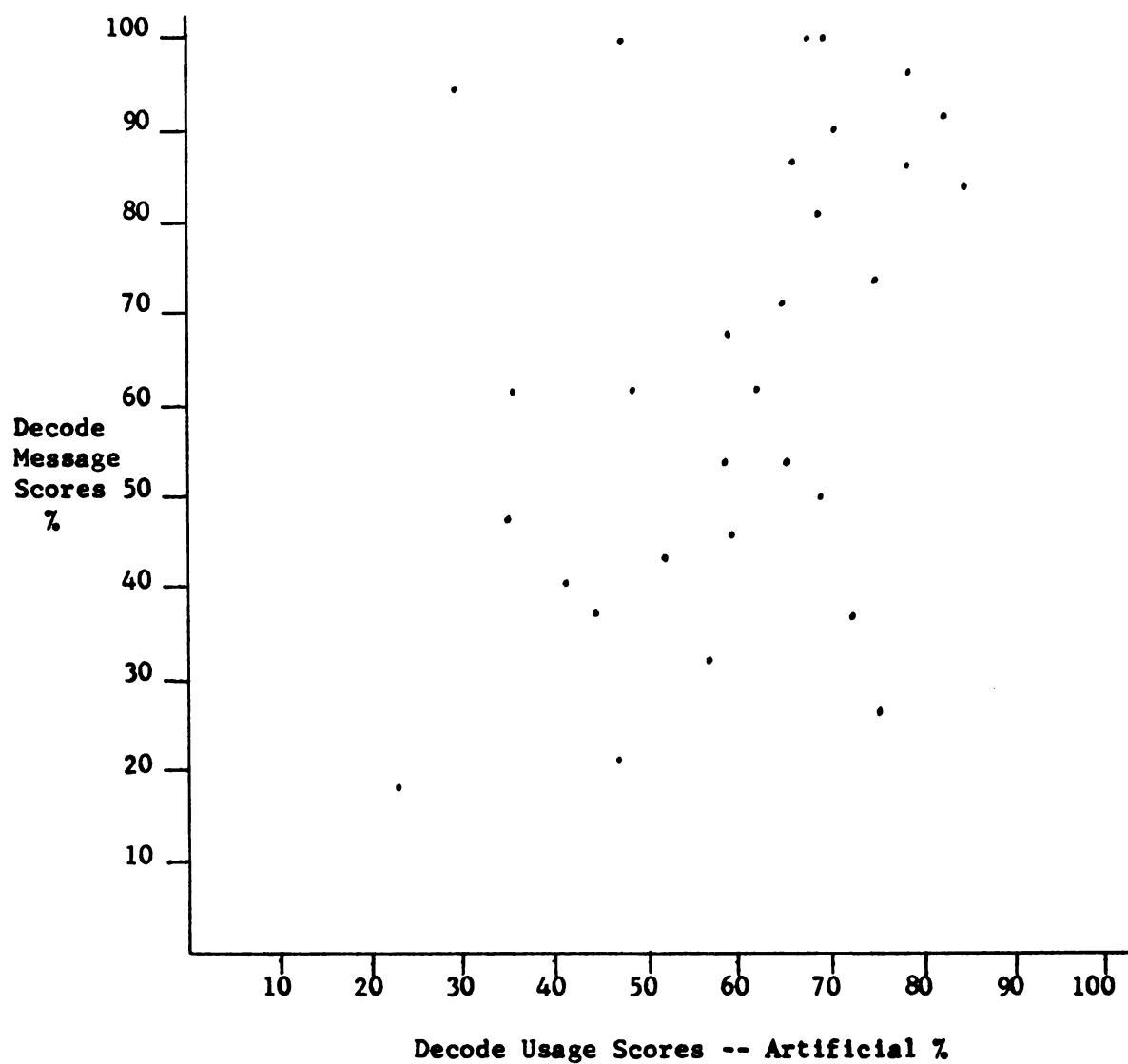


Figure 4: Scatter Diagram for Decode Message and Artificial Usage Scores

that these patterns can be judged as Artificial usage. A third factor is that the gestures scored as Artificial Usage tend to be actions that mimic everyday instrumental activities but the usual object is missing; e.g., going through the actions of turning a steering wheel to convey the message "Driving a car." The meaning of the gestural pattern is very clear and obvious as is the knowledge that most people rarely use these actions as emblematic acts in a signal exchange. A significant correlation was found ($r=.49$, $df=30$, $p>.01$) was found for the Decode Message and Artificial Usage scores (Figure 4).

The Decoding Emblem Repertoire

With the Decoding Study procedures, the decoder-judges provided an evidential base for making two major analytical discriminations about the 153 items in the Encoded Emblem repertoire:

- (1) The encoded repertoire could be divided into two groups of items on the basis of modal usage agreement, Artificial or Natural. By definition, those items scored as Artificial Usage are charades or pantomimes, not emblems. Table II lists the 32 items scored as Artificial Usage and rejected as emblems.
- (2) Another definitional criterion for a gestural pattern to be an emblem is that the message is known by "most" members of the culture group. On this basis, any items that scored below 50% on Decode Message Agreement were also rejected as emblems. Table III lists the 10 items that scored below 50% on message agreement.

Examining the distributions of Decode Message and Decode Usage scores for the remaining 110 items did not show any natural breaks (e.g., a bimodal or trimodal distribution) for establishing more precise boundaries for determining which items would be considered as verified emblems. Since that was the case, the following arbitrary conventions were adopted:

- (1) VERIFIED EMBLEMS (Table IV -- 67 items) were those items scored as:
 - a) Decode Message matches Encode Message
 - b) Decode Message Agreement Score = 70% and above
 - c) Natural Usage Agreement Score = 70% and above
- (2) PROBABLE EMBLEMS (Table V -- 13 items) were those items scored as:
 - a) Decode Message matches Encode Message
 - b) Decode Message Agreement Score = 70% and above
 - c) Natural Usage Agreement Score = 50% to 70%
- (3) AMBIGUOUS EMBLEMS (Table VI -- 8 items) were those items scored as:
 - a) Decode Message matches Encode Message
 - b) Decode Message Agreement Score = 50% to 70%
 - c) Natural Usage Agreement Score = 50% to 70%

The remaining items (Table VII -- 22 items) were scored above 50% on modal decode message agreement but the Decode Message was considered to be different in some aspect from that of the initial Encode Message. These items are particularly interesting as they illustrate various ways that changes in message content are related to changes in the behavioral patterns. These relationships and their implications will be discussed in detail in the next chapter.

Message Certainty and Usage Certainty Ratings

The mean certainty ratings for Message and Usage are listed for each item in the various tables. In general, these ratings were positively correlated with their respective agreement scores. For this study, their primary value was to permit more precise ranking of individual items within the tables categorized as VERIFIED EMBLEMS, PROBABLE EMBLEMS, and AMBIGUOUS EMBLEMS.

TABLE II
Items Scored as Artificial Usage

Encode Message	Decode Message %	Artificial Usage	Message Certainty	Usage Certainty
1. Digging	100	70	6.69	6.69
2. Driving a car	100	68	6.88	6.81
3. I want to sleep	100	48*	6.60	5.53
4. Writing	96	79	6.36	6.72
5. Disgusted with a person	95	29	5.62	5.88
6. Take a picture	91	82	6.45	6.23
7. Married (ring)	90	70	5.88	5.44
8. I want a drink	88	74	4.75	5.06
9. Walking (fingers)	87	78	5.73	4.95
10. Clean a window	83	83	5.95	6.14
11. Have a bath	82	64	5.86	5.95
12. Proud of myself (hook fingers)	81	68	5.13	4.94
13. Shoot a man (side) Bang-you're dead	74	73	6.00	5.67
14. Sexual intercourse	71	64	4.63	4.44
15. Handcuffed	68	58	2.95	4.50
16. The devil	62	62	5.56	5.94
17. Wash hands of some- one, through with you or it	62	48	5.27	5.60
18. Okay (thumb up)	62	35	3.87	3.80

TABLE II (cont.)

	Encode Message	Decode Message %	Artificial Usage	Message Certainty	Usage Certainty
19.	Shoot a man (front) Bang-you're dead	54	58	5.23	5.41
20.	Love (hold in arms)	53	64	4.94	5.38
21.	Reading	50	69	4.64	4.84
22.	I've got it	48	34	4.20	3.93
23.	Pickpocket	47	59	5.59	6.54
24.	He's drunk (Fr.)	44	51	2.69	3.19
25.	Hanged	41	60	4.07	4.53
26.	I'll poke your eyes out	41	41	4.47	3.87
27.	Vagina	38	44	2.75	3.50
28.	Sharpen a pencil	37	72	5.95	4.95
29.	Peeling fruit	32	56	2.95	4.50
30.	Suicide (stab self)	27	75	6.00	4.69
31.	Cuckold (Fr.)	21	47	3.67	4.06
32.	Do you have a match?	19	22	2.23	3.00

TABLE III

Items with Decode Message below 50%

Encode Message	Decode Message	Decode Message %	Natural Usage	Message Certainty	Usage Certnty
1. You're smart	Smart and crazy	47	79	5.73	6.20
2. Friendship	Unity, united	40	54	4.87	4.60
3. Sexually at- tractive breast	Big boobs	38	73	5.56	5.00
4. I'm ashamed	Ashamed and sad	32	88	5.27	5.77
5. We're pals, close friends	Pals and move this way	40	90	4.19	4.50
6. I've got an idea	Idea and wait a minute	34	74	4.93	5.40
7. Cut it (stop)	Stop and cut- ting throat	34	68	5.95	5.67
8. Kill (stab)	Strike a blow	33	74	4.41	5.32
9. I'm happy (face and hands)	Happy and care- free, don't care	19	92	5.59	6.54
10. Doubtful about him (Fr.)	Something in eye	29	42	3.60	4.14

TABLE IV

Items with: Decode Message Score of 70% and above
 Decode Natural Usage Score of 70% and above
 Decode Message matches Encode Message

Encode Message	Decode Message %	Natural Usage	Message Certainty	Usage Certainty
1. Screw you, up yours, fuck you	100	100	7.00	6.86
2. Sit down beside me	100	100	6.95	7.00
3. Be silent, hush	100	100	6.95	6.86
4. Come here	100	100	6.90	6.95
5. A woman, nice figure	100	100	6.90	6.77
6. I can't hear you	100	100	6.82	6.82
7. Okay (circle)	100	100	6.80	6.60
8. No, I disagree	100	100	6.81	6.88
9. You (point)	100	100	6.81	6.75
10. Me (chest)	100	100	6.75	6.75
11. I don't know	100	100	6.73	6.80
12. Yes, I agree I like it	100	100	6.53	6.73
13. Wait hold it	100	100	6.23	6.73
14. Absolutely no no way	100	95	6.81	6.62
15. How could I be so dumb	100	95	6.38	6.31
16. The hell with you, rejection	100	94	6.07	5.87
17. I warn you	100	94	6.00	6.06

TABLE IV (cont.)

	Encode Message	Decode Message	Natural Usage	Message Certainty	Usage Certainty
18.	Hitch-hiking	100	94	6.93	6.80
19.	I'm angry	100	94	6.06	6.38
20.	Get lost, get out, go away	100	93	6.53	6.87
21.	I dislike it, no way	100	93	6.53	6.20
22.	Be calm	100	93	6.20	6.00
23.	Follow me, this way	100	88	6.56	6.44
24.	I'm hot, hard work, a close shave	100	88	5.81	5.88
25.	Time to go, what time is it	100	87	6.27	5.60
26.	Something stinks	100	81	6.88	6.56
27.	I promise, cross my heart	100	74	6.67	5.73
28.	Stop, halt	100	81	6.81	6.44
29.	Fuck you, up yours, screw you (arm)	100	81	6.50	6.63
30.	He's crazy or stupid	100	75	6.67	6.27
31.	Shame on you	100	70	6.81	6.62
32.	It's cold, I'm cold	100	70	6.62	6.50
33.	Counting	100	70	6.69	6.06
34.	Go the other way, No, not that way	96	96	6.64	6.59
35.	Gossip, talk- talk-talk	96	91	6.14	6.18

TABLE IV (cont.)

	Encode Message	Decode Message	Natural Usage	Message Certainty	Usage Certainty
36.	I want to smoke, got a cigarette?	96	74	6.64	6.32
37.	Fighting	96	73	6.45	5.82
38.	I'm sad, ashamed	95	72	5.44	5.13
39.	I'm surprised	95	88	5.75	6.13
40.	Goodbye	94	100	6.60	6.53
41.	I'm full of food	93	93	6.00	6.27
42.	Peace, victory	94	87	5.93	6.33
43.	I've got a headache	93	93	5.60	5.33
44.	Absolutely yes	93	81	5.33	6.13
45.	I am smart	93	73	5.60	5.53
46.	Tastes good	93	70	5.69	5.19
47.	Good luck	92	100	6.50	6.77
48.	Money	92	79	5.54	4.81
49.	Look, I see something, look, over there	91	100	6.36	6.41
50.	Go away, rejection, get out of here	91	96	6.24	6.23
51.	Take it away, go away, get it out of here	90	87	5.45	5.91
53.	Hard to think about this, puzzle- ment, thinking	89	100	6.06	6.44

TABLE IV (cont.)

	Encode Message	Decode Message	Natural Usage	Message Certainty	Usage Certainty
53.	Go this way, over there, that way	89	86	6.38	6.13
54.	It's far away, over there	87	96	5.90	6.86
55.	I've got a toothache	87	87	5.60	5.87
56.	Go ahead, go on by	87	83	4.86	5.32
57.	Whoopee, hooray	88	74	4.06	5.19
58.	Quickly, hurry, come here quickly	85	100	6.73	6.82
59.	Suicide (gun), shoot myself	83	73	5.95	5.95
60.	Hard work, I'm hot, a close shave	81	100	6.45	6.55
61.	A close shave I'm hot, hard work	81	100	5.53	5.67
62.	Hello	80	100	6.20	6.13
63.	It's finished, that's enough	78	83	6.41	6.41
64.	What time is it?, time to go	77	100	6.45	6.64
65.	Stay here, down here	77	100	5.64	6.05
66.	I've got an earache	70	81	5.19	5.81
67.	I doubt it	70	81	4.62	5.06

TABLE V

Items with: Decode Message Score of 70% and above
 Natural Usage Score of 50% to 70%
 Decode Message matches Encode Message

Encode Message	Decode Message %	Natural Usage	Message Certainty	Usage Certainty
1. I'm going to throw up, vomiting	100	68	6.88	6.34
2. Fat, pregnant	100	64	6.63	6.31
3. Pregnant, fat	100	62	5.31	5.50
4. I'm afraid, scared	100	57	6.00	6.00
5. I'm strong (bicep)	100	51	6.56	6.81
6. Pleading	95	62	6.19	5.81
7. I'm going to cry, wiping a tear	88	64	5.69	6.13
8. Your fly is open	82	55	5.55	5.32
9. Magnifique (Fr.)	80	68	5.73	5.60
10. I'm broke	78	50	4.59	4.54
11. Get up from there	70	68	5.06	5.56
12. I'm fed up, up to here	70	57	5.06	5.94
13. Power to the people	82	50	5.80	4.93

TABLE VI

Items with: Decode Message Score of 50% to 70%
 Natural Usage Score of 50% to 70%
 Decode Message matches Encode Message

Encode Message	Decode Message %	Natural Usage	Message Certainty	Usage Certainty
1. Only fooling	68	68	6.00	5.47
2. Shove it, up your ass	68	61	5.93	5.40
3. He's safe	68	55	5.60	5.73
4. Bless you, a blessing	66	68	5.87	5.40
5. Follow behind me, those in back come up here	63	69	3.86	4.36
6. Anticipation (rub hands)	62	57	4.25	4.94
7. He's a snob, stuck up	59	61	5.40	5.27
8. I want to eat, I'm hungry	53	60	5.53	5.13

TABLE VII

Items: Decode Message Different From Encode Message

Encode Message	Decode Message	Decode Message %	Natural Usage	Message Certainty	Usage Certainty
1. What do you want?	I don't know	100	100	6.75	6.94
2. Tall person	About this tall	100	100	6.50	6.68
3. Something small	About this big A little bit	100	100	6.36	6.73
4. It's near or close by	About this long or big	100	95	5.73	6.55
5. You don't fool me	Scolding, no-no	100	88	6.94	6.88
6. Go left	Move that way	100	88	6.27	6.93
7. Go right	Move over there	100	87	6.13	5.67
8. Proud of myself (beat chest)	Strong, tough	96	91	6.59	6.18
9. Short person	About this tall	95	95	6.75	6.69
10. Happy (hands)	I give up	86	73	4.67	5.27
11. Didn't get a sou (Fr.)	Fuck you, up yours	79	75	4.60	4.73
12. Surprise (hands)	Stop, hold it, wait	81	70	4.80	5.47
13. So-so, about average	I don't know, uncertainty	75	95	6.19	6.12
14. Shut the door	Move that way	74	78	5.86	6.09
15. Brief	It's a snap, easy	67	100	6.36	6.68

TABLE VII (cont.)

Encode Message	Decode Message	Decode Message %	Natural Usage	Message Certainty	Usage Certainty
16. Thin person	It's narrow, it's straight up and down	59	79	4.54	4.59
17. Look out!	Fear, sur- prise	57	68	5.38	5.88
18. I'm tired	I give up	55	87	5.20	5.60
19. Wash hands at a feast	nervous, anxious	54	68	5.27	5.07
20. Bald head	Fixing hair	54	51	3.90	4.05
21. I'm sorry	Uncertainty, I don't know	50	87	5.00	5.00
22. Don't hit me	Look out	50	88	5.93	5.87

Chapter 8

Discussion of Results

The primary objective of this study was to map the emblem repertoire, with a reasonable degree of accuracy and completeness, for one clearly-defined culture group. It seems certain that the 67 items listed as VERIFIED EMBLEMS (Table IV) comprise a "core" set of emblems used by white, middle-class males in the Western United States. Any replication of the encoding or decoding procedures, using a similar subject sample, should produce an almost identical emblem repertoire. And, given the mobility of Americans and the pervasive influence of the visual media in our culture, there would probably be few regional differences in the core repertoire. In some regions, a set of localized emblems might be added or, in other places, people may be less demonstrative with a smaller emblem repertoire.

Additional Emblems

The first 14 items in Table VI met the emblematic inclusion criteria of 70% Decode Message Agreement and 70% Natural Usage Agreement. But, for these items, the Decode Message was considered to be different from the initial Encode Message.

In some instances, the notation that the messages were different was a bit arbitrary with some likelihood that the difference was primarily an artifact of initial message selection. For example, a Decode Message was considered to be "different" if it was more general in nature than the specific Encode Message. Yet, a similar basic concept was actually conveyed; e.g., "A tall person" and "A short person" were back-translated to "about

tall" or "about this high." The definable message concerned with a spatial dimension of height or a concept of "tallness" was, in fact, part of both the Decode and Encode messages. If the general messages were presented in the Encode procedure, the same emblems would occur and the Decode Message would then "match" the Encode Message. It is highly probable that Items 2, 3, 4 and 9 (Table VI) are current emblems in the repertoire.

The same logic applies to Items 6 (Go left), 7 (go right), and 14 (shut the door). All three messages are directions for movement of other persons or objects and, without other contextual information, get back-translated into their most general form.

Nonverbal Signals: Some Structural Properties

Still within Table VI, Items 1 (What do you want?) and 13 (So-so, about average) are very interesting in that they both convey the same message of "I don't know" or "Uncertainty." The emblem for "I don't know" is included with the VERIFIED EMBLEMS (Table IV) and consists of the behavior pattern of shrugging the shoulders and turning over or shrugging the hands. For "What do you want?", the hands are upturned but the shoulders are not shrugged. For "So-so, about average," the shoulders are shrugged but only one hand is upturned two or three times. There are also variations in the accompanying facial expressions but what appears to happen here is that, without additional contextual cues, the basic message gets conveyed. Neither the variations in the face or the body and hands modulate the basic message.

Item 12 noted as "Surprise" was an added item that simply eliminated the facial expression of surprise from an accompanying hand movement

of putting up both hands with palms facing forward in front of the body. In effect, this behavior pattern was a "quicker" version of the pattern for "Wait, hold it" and this message was conveyed as the Decode Message. For the message "Surprise" the information is conveyed by the face and it seems to make little difference what the body and hands are doing. For the message "I don't know" it seemed to make little difference what the face was doing; the primary message was conveyed by the body and hands.

Item 10 noted as "Happy" was also an added item eliminating the facial expression of smiling and showing both hands being tossed quickly upward with the palms sideways and then falling back down at a moderate rate of speed. With the smiling facial expression and hands, the message conveyed was "Carefree or don't care." With only the face, the message is "Happy." With only the hands, the message was "I give up." Here, the combination does modulate the individual messages conveyed by either the facial expression or the movement of the hands.

There are a number of other contrastive relationships between items -- especially those with "errors" or low agreement on message -- that illustrate how body movements combine to modulate, change or confuse the message that is conveyed. This study did not have sufficient controlled variation in behavior patterns to systematically assess operative structural principles of human nonverbal communicative signals. Future research can build on the fascinating possibilities glimpsed from the corpus of communicative gestures reported here.

In summary, Items 2, 3, 4, 6, 7, 9 and 14 of Table VI should be seriously considered as being VERIFIED EMBLEMS. Other items, with definable differences in behavioral signal characteristics, were discussed to illus-

trate their heuristic value for future research.

Information Domains Represented by Verified Emblems

Seven general domains are represented:

- (1) Direction of Other Person's Movements: 16 items.
(2,4,9,13,22,23,25,28,34,36,51,53,56,58,64 & 65)
- (2) Other Person's Sensory Input: 3 items.
(3,6,49)
- (3) Own Affective States: 5 items.
(19,21,26,38 & 39)
- (4) Own Physical State: 11 items.
(10,24,32,41,43,46,55,57,60,61 & 66)
- (5) Own Cognitive Functions: 10 items.
(8,11,12,14,15,33,44,45,52 & 67)
- (6) Greetings, farewells & Social Rituals: 12 items.
(5,7,18,27,40,42,47,48,54,59,62 & 63)
- (7) Insults: 10 items.
(1,16,17,20,29,30,31,35,37 & 50)

These groupings were derived from scanning the total set of messages. They are not based on a priori theory or from the distribution of scores in this study.

The specific concepts within a domain will be dependent on the tools, instruments and common objects of the particular culture; e.g., emblems concerned with violence may mimic actions with a gun in the United States. But, in an isolated New Guinea culture, the emblems would mimic actions with spears or bow-and-arrow weapons.

Humans are invariably social animals so emblems about other persons should be present in most cultures. The emblems concerned with other person's locomotion should be similar across many cultures. Emblems concerned with the sender's affective, physical or cognitive states should also tend to be multi-cultural in both message and behavior patterns. The organs concerned with body functions or dysfunctions being commented upon are common to all species-members and the use of the hands to "denotate" the particular organ would also be common across people and most cultures.

Emblems for greetings, farewells and social rituals should tend to be culture specific. These emblems, in general, have an arbitrary message to signal relationship. As an example, in the United States, the common emblem for "Goodbye" has the arm outstretched with the palm and fingers downward and away from the sender. But, for Southern Italians, Efron (1941) reported that the palm and fingers are upward and toward the sender. Eibl-Eibesfeldt (1970) has suggested that a number of greeting gestures are pan-cultural, especially an "eyebrow flash" as a greeting. However, for this particular pattern, it could very well be part of the expression of surprise that eventually gets used in an emblematic fashion across cultures. Again, it is necessary to differentiate between the origins of facial expressions of emotion and other body movement patterns.

The emblems for insults should also tend to be culture specific. In the United States, the insults seem to have evolved from and retain an iconic relationship to manual insertions or manipulations of the anal and sexual orifices. It is interesting to speculate that, in a less puritanical culture, perhaps emblematic insults would take a much different form.

Comparison of Emblem Repertoires

Table VIII compares the emblem repertoire (U.S. - 1973) with the listings provided by Saitz & Cervenka (1962) for United States and Colombians and by Efron (1941) for Sicilians. Saitz & Cervenka listed 126 items for the U.S. (1962) repertoire and 186 items for the Colombian (1962) repertoire. Efron listed 151 items for the Sicilian (1941) repertoire.

In comparing the U.S. (1973) with the U.S. (1962) repertoire, 39 of 45 common items (86%) are similar. For the Colombian (1962) repertoire, 34 of 46 common items are similar. For the Sicilian (1941) repertoire, 32 of 50

TABLE VIII

Emblem Repertoires of United States (1962), Colombian (1962),
and Sicilian (1941) as compared to United States (1973)
Repertoire Listed in the First Column

United States 1973	United States 1962		Colombian 1962		Sicilian 1941	
	Same	Diff.	Same	Diff.	Same	Diff.
2. Sit down beside me		D		D		
4. Come here	S		S			D
9. You (point)					S	
13. Wait, hold it	S		S		S	
22. Be calm					S	
23. Follow me						
25. Time to go	S		S			
28. Stop, halt	S		S		S	
34. Go the other way						
36. Give me a cigarette	S		S			
51. Go away, take it away			S		S	
53. Go this way, over there	S		S		S	
56. Go ahead, go on by						
58. Come quickly, hurry		D				D
64. What time is it?(Time)	S		S			
65. Stay here, down here	S		S		S	
3. Be silent, hush					S	
6. I can't hear you	S		S		S	
49. Look over there	S		S		S	
19. I'm angry	S		S			D
21. Disdain, dislike			S		S	
26. Stinks, disgust	S		S		S	
38. Sad, ashamed					S	
39. Surprised					S	
10. Me (point at chest)						D
24. I'm hot, hard work	S		S		S	
32. I'm cold	S		S			
41. I'm full of food	S		S		S	
43. Headache						
46. Tastes good						D
55. Toothache						
57. Whoopee, excited		D		D	S	
60. Hard work, hot	S		S		S	
61. Close call, hot	S		S		S	
66. Earache						

TABLE VIII (cont.)

	United States 1973	United States 1962		Colombian 1962		Sicilian 1941	
		Same	Diff.	Same	Diff.	Same	Diff.
8. No, I disagree		S		S		S	
11. I don't know		S		S		S	
12. Yes, I agree		S		S		S	
14. Absolutely no		S		S			D
15. How could I be so dumb		S				S	
33. Counting							D
44. Absolutely yes		S		S			D
45. I am smart						S	
52. Thinking, difficult			D		D	S	
67. I doubt it			D		D		D
5. A woman, nice figure		S		S			
7. Okay (finger circle)		S		S			D
18. Hitchhiking		S			D		
27. I promise, cross heart							D
40. Goodbye		S			D		D
42. Victory (no peace)		S		S			
47. Good luck		S		S			
48. Money		S			D	S	
54. It's far away, over there		S		S			
59. Suicide (gun)		S			D		
62. Hello			D		D		D
63. Finished, enough						S	
1. Screw you (finger)		S		S			D
16. The hell with you						S	
17. I warn you		S			D		D
20. Get lost, get out		S					D
29. Fuck you (arm)		S		S		S	
30. He's crazy		S		S		S	
31. Shame on you		S			D		
35. Gossip		S		S			D
37. Fighting					D	S	
50. Go away, rejection		S		S		S	

common items (64%) are similar. As expected, most of the differences are clustered in the categories of "Greetings, farewells & Social Rituals" and "Insults."

The degree of similarity across repertoires may be a bit surprising. For the Colombian repertoire similarities, it may well have been that the investigators observed Colombians who associated primarily with the U.S. colony and had assimilated many of the American gestures -- we don't know for certain either way. For the Sicilian repertoire, perhaps many of their gestures have been assimilated into U.S. culture from the visual media's recurrent portrayal of gangsters as member of the originally Sicilian Mafia. Again, we don't know and can only speculate at this point.

Future Research

With a "control group" emblem repertoire, many within-culture studies become feasible. Are there regional differences? Are there differences in emblem repertoires across socio-economic class or socio-ethnic groups? Are there differences in the emblem repertoires of children and adults?

Though no sex differences in decoding emblems were found here, are there emblems that females use primarily when interacting with other women? Ekman & Friesen (1969) reported such a set of specialized emblems for women of the South Fore tribe in New Guinea.

Of course, the studies listed above all have their counterparts using cross-cultural methods comparing the differences in information domains and behavior patterns.

Emblem Usage

The present study was an in-laboratory procedure to enumerate

and identify nonverbal communicative "units." With defined units, research on more naturalistic settings of conversational episodes can proceed. Ekman & Friesen (1974) are already conducting some "cross-channel" studies on how emblems and other nonverbal acts are related to the ongoing speech.

Individual Differences Emblem Studies

Somewhat implicitly, emblems have been defined as intelligent non-verbal behavior. Emblems are patterned, learned, stored in memory, retrieved, and used to intentionally convey information. This notion opens up a number of exciting and pioneering research possibilities. If we can map early emblematic behavior across normal infants, can we then communicate with retarded, brain-damaged, aphasic or autistic children (and adults) at a higher level than by using the prolonged animal conditioning paradigms ?

If infants learn emblematic behavior early in life -- prior to producing language -- can these patterns be used as an index of developing intelligence? Can delay in early language behavior be predicted from a lack of early reciprocal nonverbal communicative patterns? (See Johnson, 1972 for a more extended discussion of these factors.)

Conclusion

Again, this study was a basic, first-step procedure in the investigation of human nonverbal communication. The results were the identification of observational and analytical units of nonverbal communication. Hopefully, this data-base will lead to the more complex and important studies briefly discussed above.

Appendix A
INITIAL VERBAL MESSAGE LIST

1. What time is it?
2. It's near
3. It's a long way
4. Wait a minute
5. A short person
6. A tall person
7. A woman
8. Man tells man: Girl is sexually attractive
9. Man tells man: Girl is attractive
10. Money
11. Kill
12. Drive a car
13. Clean a window
14. Digging
15. Peeling fruit
16. Sharpen a pencil
17. I want to smoke
18. Give me a cigarette
19. Writing
20. Gossip
21. He's too talkative
22. Handcuffed
23. I have no money

24. A thin person
25. A fat person
26. Go this way
27. Go the other way
28. Go away
29. Rejection
30. The hell with you
31. Take it away
32. Please, go ahead
33. Go ahead of me
34. Come here
35. Will you help me
36. Stay here
37. You wait
38. Big boobs
39. Sit down beside me
40. Look
41. I see something
42. Be silent-hush
43. Fighting
44. Suicide
45. Wash hands at feast
46. We're pals
47. They're close friends
48. Stop
49. Pleading
50. I beg of you

51. Quickly
52. Hurry
53. Get up from there
54. Love
55. Marriage, she's married
56. I'm afraid
57. Horror
58. I'm angry
59. Pain, that hurts
60. Something stinks
61. I'm going to throw up
62. I'm hungry
63. I want to eat now
64. I am full
65. I am strong
66. I'm tired out
67. I'm sleepy
68. I want to sleep
69. It's cold
70. I'm cold
71. It's hot
72. I'm hot
73. Sexually attractive breasts
74. Proud of myself
75. Food delicious
76. Me

- 77. You
- 78. Pregnant woman
- 79. Yes
- 80. I agree with you
- 81. I like it
- 82. No
- 83. I disagree
- 84. I dislike it
- 85. I don't know
- 86. Doubt
- 87. Hard to think about this
- 88. I am thinking
- 89. I forgot
- 90. I missed it
- 91. I didn't hear you
- 92. Listen well
- 93. Counting
- 94. Okay
- 95. Perfect, just right
- 96. Something went well or good
- 97. Hello
- 98. Goodbye
- 99. It was so-so just about average
- 100. Absolutely no
- 101. Absolutely yes
- 102. I'm sorry
- 103. Please forgive me

- 104. Be calm
- 105. Shame on you
- 106. He's crazy
- 107. He's stupid
- 108. Wash hands of someone, I'm through with you
- 109. I'm fed up
- 110. Fuck you (arm version)
- 111. Shove it
- 112. Up your ass
- 113. I warn you, scolding
- 114. I'll poke your eyes out
- 115. It's hard work
- 116. Small
- 117. Shoot a man
- 118. Reading
- 119. Follow me
- 120. Follow behind me
- 121. Do you have a match?
- 122. Look out
- 123. What did you mean?
- 124. I don't understand
- 125. What do you want?
- 126. I'm surprised
- 127. I'm going to cry
- 128. I want to drink
- 129. Sexual intercourse
- 130. Screw her or him (finger)

131. I am smart
132. Friendship
133. I promise
134. Devil and/or evil spirits
135. Bless you
136. Brief
137. I've got it
138. Whoopee, wow
139. Vagina
140. You are smart
141. He's crafty
142. He's shrewd
143. You don't fool me
144. I know more than you think
145. He's got a bald head
146. Pickpocket
147. I'm ashamed
148. Disgusted
149. Distaste for a person
150. I'm going to work
151. That person is a thief
152. I want to go to bed with you
153. A cuckold
154. Ends badly
155. We're equals
156. That's not fair
157. Those two are enemies

- 158. A man
- 159. Girl tells man: She likes him
- 160. I have to shit
- 161. That person is beautiful
- 162. He's in jail
- 163. You're a fool
- 164. Rain is coming
- 165. Don't you see
- 166. Flirting
- 167. Walk slowly
- 168. Death
- 169. Penis
- 170. I don't care
- 171. It's finished
- 172. Cooking
- 173. Now, let's go
- 174. I'm just joking
- 175. I'm impatient
- 176. I don't believe you
- 177. Later
- 178. So what
- 179. You're bad luck
- 180. Good luck
- 181. Disdain
- 182. Excited
- 183. I'm weak
- 184. I want to piss

- 185. I'm anxious
- 186. Arrogance
- 187. Thank you
- 188. A powerful person
- 189. He's lucky
- 190. I'm pleased
- 191. A big shot
- 192. He's a jackass
- 193. I'm broke

Appendix B

VOLUNTEERED MESSAGES BY ENCODER SUBJECTS

1. Walking
2. Peace
3. Victory
4. Power to the people
5. Trousers not fastened
6. Have a bath
7. I've got an idea
8. Get lost
9. The hell with you
10. That was a close shave
11. Hanged
12. Stuck-up
13. I've got a toothache
14. I've got an earache
15. I've got a headache
16. Go left
17. Go right
18. Don't hit me
19. He's safe
20. How could I be so dumb?
21. Bad weather
22. Kiss my ass
23. Open the door
24. Shut the door
25. I'm bored, boredom

Appendix C

TECHNICAL DESCRIPTION AND VIDEOTAPING ROOM CONDITIONS

Equipment Used

1. Sony Videocorder, Model 3650, $\frac{1}{2}$ inch tape, EIA-J1 signal.
2. Sony Video Camera, Model 3200 with 4:1 (16mm to 64mm) Sony zoom lens.
3. Sony 9 inch Monitor, Model CV 920, black-and-white.

Room Conditions

The room used was 12 feet by 15 feet lighted with a ceiling mount, fluorescent fixture with four 40 watt, 4 feet long bulbs. All walls and ceiling were off-white in color. A "home" lamp with a white shade and a 200 watt incandescent lamp was also used in front (2 feet) and to the right side (4 feet) of the subject's chair. With this lighting, an f 4 setting could be used with the video camera lens.

The subject sat in an armless chair in the center of the room at 4 feet in front of a light brown door to provide a non-glare backdrop. The video camera was centered 8 feet in front of the subject's chair. The recorder and monitor were on a small table to the right of the camera.

The experimenter's chair was between the camera and the other equipment to (a) focus the subject's attention to face the camera and interact with the experimenter, and (b) allow the experimenter to operate the various units as needed during the procedure.

Appendix D

ENCODER INSTRUCTIONS

In some situations, in place of using words or in addition to words we use actions or some kind of body movements to convey our messages. Some of the actions we use for communication convey only part of the idea we're trying to get across; that is, the action by itself only contributes to modifying the verbal information. In addition, some actions convey only a general indication of our feelings about what we are saying or our feelings toward the person we are talking with.

For example, as I am talking, I might follow the course of my speech with a series of hand movements. These movements, by themselves, do not convey a specific meaning. They may tell you that I want to emphasize what I'm saying at this time but the specific information or message is conveyed by my speech. Let's call these actions with a part-meaning or very general "feeling" message, Auxiliary Actions.

Other actions that we use for communication convey very specific messages. These actions, which we call emblems, are what we are interested in here. The purpose of this experiment is to learn how many emblems there are -- how many actions are there which convey very specific information in and of themselves. And, we also want to find out what they look like.

To learn how many emblems there are and what they look like, we are using a simple procedure -- we ask a number of people to show us the emblems they know and we get a videotape of what they do. We will, however, help you in this task by providing you with a list of messages for which you may or may not know an emblem.

Let me give you two examples. I say: OK (Hello. You would do this -

without talking. Or I say: NO(Yes); you would do this, again without talking.

We do not want you to invent emblems for the messages or to perform a version of the game of charades. Rather, we are interested in only those emblems which you have used or have seen other people use in you past experiences.

In most cases, the emblem should be immediately available to you when you hear the spoken message. In some cases, it may take a few seconds to recall the emblem but, at that time, the emblem should be immediately available. You should not have to work at "putting-the-emblem-together" -- so to speak. Again, we do not want on-the-spot inventions or charades. And, we are only interested in those actions that have a complete and specific message -- not the Auxiliary Actions we talked about earlier.

Let me outline the actual procedure in detail. I'll say a message; if you know an emblem for it, perform the action. If not, just say, "I don't know." We do not expect that every message on my list has an emblem -- it is just as important for us to know which do not have an emblem. I'll then ask you if you know any other emblems for the same message. If you do, perform them. If you don't, just say "No."

After a series of ten messages, I'll ask you to tell me any messages that you may have recalled for which you know an emblem. This is a very important step because it is the only opportunity for me to find out new emblems that are not on my list. I'll write down your messages and then present them at the end of the list.

To get you into the "feel" of the procedure, the first two items will be the examples I showed you earlier. After these two practice items,

we'll stop and see if you have any further questions about the procedure. It's really more complicated to spell out than actually doing it.

I do want to tell you ahead of time that a few messages use common four-letter words sometimes considered as vulgar or obscene. But, we feel that the emblems for these messages do occur in everyday life and want to include them on our list. You can refuse to perform them in accordance with your own personal convictions.

Now that you know what we want to do, here's the consent form for your signature. Please read it carefully and ask me any questions about it before signing.

Appendix E
Rejected Messages

- | | |
|---------------------------------|-------------------------|
| 1. I'm going to work | 23. I don't care |
| 2. That person is a thief | 24. It's finished |
| 3. I want to go to bed with you | 25. Cooking |
| 4. A cuckold | 26. Now, let's go |
| 5. Ends badly | 27. I'm just joking |
| 6. Bad weather | 28. I'm impatient |
| 7. We're equals | 29. I don't believe you |
| 8. That's not fair | 30. Later |
| 9. Those two are enemies | 31. So what |
| 10. A man | 32. You're bad luck |
| 11. Girl likes man | 33. Good luck |
| 12. Kiss my ass | 34. Open the door |
| 13. I have to shit | 35. Disdain |
| 14. That person is beautiful | 36. Excited |
| 15. He's in jail | 37. I'm weak |
| 16. You're a fool | 38. I want to piss |
| 17. Rain is coming | 39. I'm anxious |
| 18. Don't you see | 40. Arrogance |
| 19. Flirting | 41. Thank you |
| 20. Walk slowly | 42. A powerful person |
| 21. Death | 43. I'm bored |
| 22. Penis | |

Appendix F**Accepted Messages**

- | | |
|---------------------------|-----------------------------------|
| 1. Please go ahead | 24. Money |
| 2. Come here | 25. Go the other way |
| 3. Reading | 26. Something small |
| 4. Wait a minute | 27. It's hard work |
| 5. I'm through | 28. Your fly is open |
| 6. Bald head | 29. Shut the door |
| 7. It's far away | 30. Writing |
| 8. Writing | 31. Take a picture |
| 9. Pickpocket | 32. I want to smoke |
| 10. Gossip, too talkative | 33. Quickly, hurry |
| 11. Do you have a match? | 34. Brief |
| 12. Tall person | 35. Shoot a man (front) |
| 13. It's near, close by | 36. Screw you, up yours, fuck you |
| 14. A woman, nice figure | 37. Kill (stab) |
| 15. Sit down beside me | 38. Proud of myself (beat chest) |
| 16. Stay here | 39. What time is it? Time to go |
| 17. Suicide (gun) | 40. Sharpen a pencil |
| 18. Handcuffed | 41. Peeling fruit |
| 19. Clean a window | 42. Follow behind me |
| 20. Thin person | 43. I can't hear you |
| 21. Take it away | 44. I'm broke |
| 22. Fighting | 45. Look, I see something |
| 23. Be silent, hush | 46. Walking |

Appendix F (cont.)

- | | |
|---------------------------------|-----------------------------------------|
| 47. I'm ashamed | 70. Go away, rejection |
| 48. I'm happy | 71. Have a bath |
| 49. I'm fed up | 72. Sexually attractive breasts |
| 50. You | 73. What do you want? |
| 51. I'm going to cry | 74. Fat person |
| 52. Suicide (stab) | 75. Pleading |
| 53. We're pals, close friends | 76. The devil |
| 54. You don't fool me | 77. Stop |
| 55. It's cold, I'm cold | 78. I'm afraid, scared |
| 56. Digging | 79. A short person |
| 57. Go this way | 80. I'm surprised |
| 58. I'm going to throw up | 81. I'm strong |
| 59. Look out! | 82. I've got an earache |
| 60. Follow me | 83. Love |
| 61. I'm sad, grief | 84. I'm angry |
| 62. Something stinks | 85. It's hot, I'm hot |
| 63. I want a drink | 86. Pregnant |
| 64. Whoopee, wow | 87. Me |
| 65. Sexual intercourse | 88. Married, marriage |
| 66. Get up from there | 89. No, I disagree |
| 67. Proud of myself (pectorals) | 90. Vagina |
| 68. Disgusted with a person | 91. Tastes good, food was delicious |
| 69. I doubt it | 92. Fuck you, up yours, screw you (arm) |

Appendix F (cont.)

- | | |
|------------------------------|---------------------------------------|
| 93. Hard to think about this | 116. So-so, about average |
| 94. Shame on you | 117. Counting |
| 95. Absolutely no | 118. How could I be so dumb |
| 96. I don't know | 119. Okay (circle) |
| 97. I've got an idea | 120. Go left |
| 98. The hell with you | 121. Wash hands at a feast |
| 99. I'm full of food | 122. Goodbye |
| 100. I promise | 123. I'll poke your eyes out |
| 101. You are smart | 124. Get lost |
| 102. Yes, I agree | 125. Sleepy |
| 103. I warn you | 126. Peace, victory |
| 104. He's crazy, stupid | 127. Wash hands of someone |
| 105. I'm tired | 128. I want to eat, I'm hungry |
| 106. I dislike it | 129. Hello |
| 107. Friendship | 130. Bless you |
| 108. Absolutely yes | 131. Power to the people |
| 109. Be calm | 132. Shove it. up your ass (thumb up) |
| 110. I am smart | 133. I've got it |
| 111. Go right | 134. I've got a headache |
| 112. Don't hit me | 135. He's safe |
| 113. I'm sorry | 136. He' stuck-up, a snob |
| 114. That was a close shave | 137. I've got a toothache |
| 115. Okay (thumb up) | 138. Hanged |

Appendix G

Additional Messages

1. Doubtful about him (French)
2. Good luck (ADD)
3. He's drunk (French)
4. Anticipation (rub hands) (ADD)
5. Didn't get a sou (French)
6. Surprise (hands only) (ADD)
7. Hitch-hiking (ADD)
8. Shoot a man (sideways) (ADD)
9. Only fooling (ADD)
10. Time to go (ADD)
11. Happy (hands only) (ADD)
12. Cut-throat (ADD)
13. Cuckold (French)
14. Magnifique (French)

Appendix H

Item Sequence Log: Emblem Exemplar Tapes A, B, and C

1. Please go ahead	27. A woman
2. Money	28. Kill (stab)
3. Come here	29. Sit down beside me
4. Doubtful about him (Fr.)	30. Proud of myself (beat chest)
5. Go the other way	31. Good luck (ADD)
6. Reading	32. Stay here
7. Something small	33. What time is it?
8. Wait a minute	34. Suicide (gun)
9. It's realyy hard work	35. Sharpen a pencil
10. It's finished	36. Handcuffed
11. Your fly is open	37. Peeling fruit
12. Bald head	38. Clean a window
13. Shut the door	39. Follow behind me
14. It's far away, over there	40. Thin person
15. Writing	41. I can't hear you
16. Take a picture	42. Take it away
17. Pickpocket	43. I'm broke
18. Give me a cigarette	44. Fighting
19. Gossip	45. Look, I see something
20. Quickly, hurry	46. Be silent, hush
21. Do you have a match?	47. Walking
22. Brief	48. I'm ashamed
23. Tall person	49. Go away, rejection
24. Shoot a man (front)	50. I'm happy
25. It's near	51. Have a bath
26. Screw you (finger)	

Appendix H (cont.)

Tape B

-
- | | |
|---------------------------|--------------------------------------|
| 52. I'm fed up | 79. Anticipation (ADD) |
| 53. Driving | 80. I'm angry |
| 54. Big boobs | 81. Something stinks |
| 55. You | 82. It's hot, I'm hot |
| 56. What do you want? | 83. I want a drink |
| 57. He's drunk (Fr.) | 84. Pregnant |
| 58. I'm going to cry | 85. Whoopee, wow |
| 59. Fat person | 86. Me |
| 60. Suicide (stab) | 87. Sexual intercourse |
| 61. I beg of you | 88. Married |
| 62. We're pals | 89. Get up from there |
| 63. The devil | 90. No, I disagree |
| 64. You don't fool me | 91. Proud of myself (pectorals) |
| 65. Stop | 92. Vagina |
| 66. It's cold, I'm cold | 93. Disgusted with a person, disdain |
| 67. I'm afraid | 94. Tastes good |
| 68. Digging | 95. I doubt it |
| 69. A short person | 96. Fuck you (arm) |
| 70. Go this way | 97. Hard to think about this |
| 71. I'm surprised | 98. So-so, about average |
| 72. I'm going to throw up | 99. Shame on you |
| 73. I'm strong | 100. Counting |
| 74. Look out! | 101. Absolutely no |
| 75. I've got an earache | 102. How could I be so dumb! |
| 76. Follow me | |
| 77. Love | |
| 78. I'm sad, grief | |

Appendix H (cont.)

Tape C

- | | |
|------------------------------------|-----------------------------|
| 103. I don't know | 129. I'm tired |
| 104. Ok (finger circle) | 130. I'm hungry |
| 105. I've got an idea | 131. I dislike it |
| 106. Go left | 132. Hello |
| 107. The hell with you | 133. Friendship |
| 108. Didn't get a sou (Fr.) | 134. Bless you |
| 109. Wash hands | 135. Absolutely yes |
| 110. I'm full | 136. Power to the people |
| 111. Goodbye | 137. Be calm |
| 112. Surprise (hands) (ADD) | 138. Shove it, up your ass |
| 113. I promise, cross my heart | 139. I am smart |
| 114. I'll poke your eyes out | 140. I've got it |
| 115. You are smart, crafty, shrewd | 141. Go right |
| 116. Get lost | 142. I've got a headache |
| 117. Yes, I agree | 143. Don't hit me |
| 118. Sleepy | 144. He's safe |
| 119. I warn you | 145. That was a close shave |
| 120. Peace, victory | 146. I'm sorry |
| 121. Hitchhiking (ADD) | 147. He's a snob, stuck-up |
| 122. He's crazy, stupid | 148. I've got a toothache |
| 123. Shoot a man (side) (ADD) | 149. Okay (thumb up) |
| 124. Fooling (behind back) (ADD) | 150. Hanged |
| 125. Time to go (ADD) | 151. Cuckold (Fr.) |
| 126. Wash hands of someone | 152. Magnifique (Fr.) |
| 127. Happy (hands) (ADD) | |
| 128. Cut-throat (ADD) | |

Appendix I

DEMOGRAPHIC AND CULTURAL DATA SHEET

INSTRUCTIONS AND SAMPLE ANSWER SHEET FOR DECODER JUDGES

NAME _____ DATE _____

MALE _____ FEMALE _____

AGE _____

(Please check one category)

Caucasian__ Afro-American__ Asian-American__ Mexican-American__ Other_____

Were you born in the United States? YES__ NO__

Were your parents born in the United States? YES__ NO__

Are you a high-school graduate? YES__ NO__

Your present occupation_____

Your father's major occupation_____

Have you spent most of your life in American "mainstream" culture? YES__ NO__

Appendix 1 (cont.)

You will view a series of clips of nonverbal gestures. For each gesture:

- (1) Write the message conveyed by the gesture. If a gesture has more than one meaning, write down as many as you know. If no message is conveyed by the gesture, write "None."
- (2) Make a rating between 1 and 7 on how certain you are about the message, with a 1 being "Completely Uncertain" and a 7 being "Completely Certain."
- (3) Make a decision as to whether the gesture is NATURAL or ARTIFICIAL. If the gesture is part of ordinary situations, something you have seen before --- call it NATURAL. A NATURAL gesture might occur when people are conversing, or it might be shown in one of the everyday situations when people can't use words to communicate, for example, signalling to another person across a noisy street. If the gesture is not part of ordinary life, call it ARTIFICIAL. An ARTIFICIAL gesture might occur when people are playing, in charades or pantomime. Or, it might be something that a particular person makes-up and does; but not in ordinary use.
- (4) Make a rating between 1 and 7 to indicate how certain you are about your judgment about whether the gesture is NATURAL or ARTIFICIAL.

Here's an example. Suppose you saw a person nod his head up and down. You would score it like this:

MESSAGE

Uncertain 1 2 3 4 5 6 ⑦ Certain

ARTIFICIAL or NATURAL

Uncertain 1 2 3 4 5 6 ⑦ Certain

The messages are very clear, the gesture means "Yes" or "I agree," and you write down both messages. Whenever a gesture has more than one meaning, please be certain to write down as many of the meanings as you know. In this instance, we have assumed that both "Yes" and "I agree"

Appendix I (cont.)

are equally obvious, so they are circled together, and a 7 for maximum certainty has been circled. If you have two messages and they are not equally obvious, circle only the message that you are most certain of and your certainty rating will apply only to this message.

The "Head nod" gesture is commonly used in ordinary situations, in conversations or when people can't use words; e.g., to signal someone across the room during a lecture. So, it was checked as NATURAL and as a 7 for maximum certainty.

Here's another example. You see someone going through the motion of hammering a nail into the wall but the objects are "imaginary" --- all you see are the hammering motions. You would score it like this:

MESSAGE Hammering

Uncertain 1 2 3 4 5 6 7 Certain

ARTIFICIAL or NATURAL

Uncertain 1 2 3 4 5 6 7 Certain

The message was clear and certain, so it is circled and marked as a 7. However, this gesture would rarely, if ever, be used in conversations or in ordinary situations. It could be used in charades; e.g., to identify an author named "Hammer." A mime could use it on stage in a sketch. So, it is checked as being ARTIFICIAL with a certainty rating of 7.

Here's one more example. You see someone reaching down and pulling something (imaginary) from the bottom of his shoe. You might score it like this:

MESSAGE Stepped on a tack or gum on shoe or dog doo

Uncertain 1 2 3 4 5 6 7 Certain

Appendix I (cont.)

ARTIFICIAL or NATURAL

Uncertain 1 2 3 4 5 6 ⑦ Certain

You're really not certain of the specific message. Write down all three. Let's suppose you're most certain of stepping on a tack, so circle it, and it's scored as a 3 towards Uncertainty. Again, you're certain that the gesture is artificial so it's marked a 7 on the Certainty scale.

If you do not know any message at all for a gesture, just write "None," and do not mark any of the other scales. If you make a wild guess as to the message, you would mark a 1 or 2 on the MESSAGE certainty scale. There also could be gestures that you are very uncertain about their use; these would be marked as a 1 or 2 on the GESTURE USAGE scale.

Use the middle rating appropriately to indicate your degree of certainty between the extremes of 1 and 7.

Don't agonize over your ratings. They should be made quickly, within 10 seconds or so. You'll find the tasks actually quite simple.

SAMPLE ANSWER SHEET BLOCK

001 MESSAGE

Uncertain 1 2 3 4 5 6 7 Certain

ARTIFICIAL or NATURAL

Uncertain 1 2 3 4 5 6 7 Certain

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