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Introduction: Current Issues in the Study of "Nonverbal Communication"

1.0. Introduction

The articles collected together in this volume comprise a selection from those articles published in *Semiotica*, up to the end of 1979, which may be regarded as being concerned with the phenomena of what has come to be termed 'nonverbal communication'. In selecting them an attempt has been made to include those articles that have proved to be particularly seminal over the years and to ensure that the full range of issues and approaches that have been dealt with in *Semiotica* are represented. The result is a collection which, we believe, presents a good cross section of the work currently being done in this field.

In Part I, four articles have been included the import of which is primarily theoretical or methodological. In the first of these, Ekman and Friesen not only propose a classificatory scheme for different aspects of behavior from a communicational perspective but also discuss a number of general issues. Poyatos discusses the uses that novelists make of 'nonverbal communication' in their characterizations and in their descriptions of encounters. This raises several interesting issues of theory and method. For instance, it raises the question of how features of voice and movement are to be described in words. It raises the question of how the function of 'nonverbal' information in human behavior is perceived by the novelist and what uses he makes of it in developing narrative and characterization. The other two articles in Part I, by Freedman and Seaford, address questions of the description and measurement of behavior. Freedman's article, a review of Bouissac's *La Mesure des Gestes*, touches on a number of different ways in which the problem of 'measuring' bodily movement has been approached and deals with the important question of what is to count as a unit of action. Seaford's article is an argument for developing descriptions of facial action based upon an analysis of the visible consequences of muscular action, the descriptions to be cast in terms of the actions of the muscles themselves. Included in this paper is an account of a study of 'facial dialects' to date the only such discussion to have appeared anywhere.

In Part II of this selection we have grouped articles in which instances of

interaction are examined and an attempt is made to give an account of how the behavior that can be observed in them functions in the interaction process. The section begins with papers by Collett, et al. and by Givens, which are concerned with how people behave with respect to one another when they are in each other's presence, but not engaged in some joint activity, such as conversation. Next comes an article by Schiffrin, which deals with the uses of the handshake. Then follow four articles (by De Long, Argyle, et al., Beattie, and Kendon) which deal with various aspects of behavior within ongoing interaction and how it serves in the regulation of the actions of the participants. Finally, in a paper by Rosenberg, an analysis is presented which shows how speech, gesture, and action are all integrated within interaction. This paper further shows how one may look upon the patterning of action in interaction from the point of view of how the participants, through this action, continually renegotiate or reconfirm the nature of their relationship and how their actions are to be defined.

In Part III we present articles on what may broadly be referred to as 'gesture'. Here we have a set of articles which deal with specific actions, mostly of the forelimbs, which are usually deemed to have specific significance. Poyatos reviews three works that are concerned with providing inventories of gestures and in the course of doing so provides a useful outline of several of the different issues that are involved. Johnson, et al., Sparhawk, and Kirk and Burton deal with one kind of gesture, widely known as an 'emblem'. Rosenfeld, et al. show how minor movements of the head and face, though not usually recognized as 'gesture', may nevertheless convey quite specific information. The paper by Smith, et al. illustrates yet another approach to finding out the communicational significance of a specific action, in this case the action of protruding the tongue.

In the discussion to follow, an attempt will be made to place these articles in the wider context of studies of this sort. In this way, the significance of each article as a contribution to the development of an understanding of how human visible behavior functions communicatively may be made more apparent. This discussion will also contribute, it is hoped, to an assessment of the present 'state of the art' in the field.

2.0.   The concept of 'nonverbal communication'

2.1.   *The purview of 'nonverbal communication'*

We have said that we have sought to include in this volume just those articles from *Semiotica* that have addressed the phenomena of what is commonly referred to as 'nonverbal communication'. Anyone taking this term literally,

however, might reasonably ask why it is that this collection does not include such papers as Taylor's 'Nonverbal communication systems in Native America' (Taylor, 1975) or why it does not include papers on such nonverbal communication systems as national flags (Weitman, 1973; Pasch, 1975), architecture (Eco, 1972; Wallis, 1973; Ghioca, 1975), traffic signs (Studnicki, 1970) or dancing (Ikegami, 1971; Lasher, 1978; Hanna, 1979). In fact articles on these matters were not even considered for inclusion in this collection, nor were such papers as those by Stokoe (1974a), Cicourel and Boese (1972), or Williams (1977) on sign languages. This is because we have been guided by a certain usage that the term 'nonverbal communication' has come to have. A brief consideration of the nature of this usage and how it has come about will prove a useful way of opening up some of the fundamental theoretical issues with which this field of inquiry must be concerned.

The term 'nonverbal communication', as it is currently employed, is most frequently used to refer to all of the ways in which communication is effected between persons when in each other's presence, by means other than words. It refers to the communicational functioning of bodily activity, gesture, facial expression and orientation, posture and spacing, touch and smell, and of those aspects of utterance that can be considered apart from the referential content of what is said. Studies of 'nonverbal communication' are usually concerned with the part these aspects of behavior play in establishing and maintaining interaction and interpersonal relationships.

It will be seen from this that there are three main limits governing the use of the term, its literal meaning notwithstanding. First, it is used mainly in reference to communications between persons who are directly present to one another. That is to say, it is used mainly in reference to communication that occurs when people are able to respond directly to each other's actions and are able to directly affect one another through such responses. It generally has not considered the various ways that people can communicate with one another when they are not copresent (cf. Sigman, 1979 for a discussion of communication between absent persons and Basso, 1974 for a discussion of the uses of writing for such communication).

Second, 'nonverbal communication' is generally considered to refer to communication as it is effected through behavior whose communicative significance cannot be achieved in any other way. From the point of view of the propositional significance of an utterance such as 'the cat is on the mat' it makes no difference whether I speak this or whether I present you with the proposition in written form. Furthermore, just the same information may be conveyed, whether I say it in Chinese, French, or Warlpiri. However, the communicative significance of the tone of voice in which I produce this utterance, the timing what I employ in making it in relation to the timing of the utterances of the others with whom I am in conversation, of the speed

with which I pronounce the words, and so on, depends upon my recipient's apprehension of just those features. Whereas the proposition 'the cat is on the mat' is, one might say, 'detachable' from the means by which it may be conveyed to another, the messages conveyed by the features of the act of utterance itself are not detachable. It is to these 'undetachable' or 'embodied' aspects of communication that the term 'nonverbal communication' has usually been applied.

A third characteristic of 'nonverbal communication' is that messages that are at the center of interest (whether in fact conveyed by words or not), are typically those messages that are not given explicit formulation. They are the messages that may be inferred from or are implied by a person's actions. It is for this reason, in particular, perhaps, that such 'nonverbal' codes as sign language are not usually regarded as being part of the purview of 'nonverbal communication' studies. Sign language, like spoken language, is a vehicle for highly 'detachable' messages and it no more seems to 'embody' what it conveys than spoken language does. It can be considered abstractly, in its own right, and it is employed consciously for explicit communicational purposes.

2.2.   *The emergence of 'nonverbal communication'*

The term 'nonverbal communication' made one of its earliest appearances in the usage we have just outlined, as the title of a book by Ruesch and Kees (1956). This book was an attempt to present for the general reader the implications for the understanding of communication in human interaction of the conceptual discoveries of cybernetics and the mathematical theory of information. Cybernetics and the mathematical theory of information were developed in the context of computer technology and telecommunications engineering. However, the concepts involved were of sufficient generality that they had applications far beyond these particular fields. Wiener (1948), who pioneered cybernetics, and Weaver (Shannon and Weaver, 1949), who was an important contributor to the development of information theory, participated from an early date in discussions with physiologists, psychiatrists, psychologists, and other social scientists in which the implications of these ideas were explored (Von Foerster, et al., 1949–1953; Heims, 1977). Ruesch, a psychiatrist, was much influenced by this and, together with Gregory Bateson, an anthropologist, produced a pioneering discussion of human communication in these terms (Reusch and Bateson, 1951; see also Ruesch, 1953, 1955). Cherry (1957) provides a very useful survey of the development of information theory.

The notion of 'quantity of information' which the mathematical theory of information had evolved in the course of an endeavor to measure the efficiency of telephone lines, required a way of thinking about information without any

reference to the nature of the messages transmitted. This meant that the information value of something could be considered regardless of the sorts of messages involved and regardless of whether any deliberate attempt to transmit messages had been made. This idea became important for the study of communication in human interaction for it led to the idea that *all* aspects of behavior that are detectable could be treated in information theory terms. That is to say, the perspective of information theory, when applied to human behavior suggested that not only are such actions as speech and gesture to be considered as a signal, but all other aspects of behavior may be considered from this point of view as well, whether or not intended or designed to transmit messages. Weaver, one of the pioneers of information theory makes this quite clear when he writes (in Shannon and Weaver, 1949: 95): 'The word communication will be used . . . in a very broad sense to include all of the procedures by which one mind may affect another. This , of course, involves not only written and oral speech, but also music, the pictorial arts, the theatre, the ballet, *and in fact all human behavior*' (italics added).

This realization, that any aspect of human behavior could be treated as a source of information, led to an expansion of what, in human action, could be considered relevant for an understanding of communication in interpersonal relations. It is not only what A *says* to B that sends messages to him, but it is also what A does. Ruesch appears to have been one of the first authors to make this explicit. He makes it quite clear that he does so as a result of his attempts to apply notions from information theory to human behavior in interaction (Ruesch and Bateson, 1951; Ruesch 1953, 1955).

As Ruesch also pointed out, however, although ordinary practical actions can be viewed as conveying information just as utterances and gestures may do, it is also clear that they do so in a different way. Ruesch suggested that this difference could best be expressed in terms of the notions of encoding that information theorists had proposed. Messages can be encoded either *digitally* or *analogically*. In digital encoding discrete units, such as numbers, are employed. In analogic encoding (sometimes referred to as iconic encoding) there is a continuous relationship between the events serving to convey information about something and whatever it is that is being conveyed. Words and other discrete symbol systems, it seems clear, convey their messages digitally. Actions, whether practical or expressive, convey their messages analogically. Emotional expressions seem to vary continuously with the intensity of the emotion. However, verbal statements about emotion, though they can encode differences in intensity of feeling, must do so in a discrete, arbitrary, and therefore digital, fashion. Ruesch (1955) provided a detailed comparison between what he termed 'nonverbal codification' and 'verbal codification'. He not only pointed out that humans could transmit information to one another according to these apparently quite different principles, but he also

suggested that the kind of information transmitted analogically (or non-verbally) was different from the information transmitted in words. Thus Ruesch supposed that analogically encoded information pertained to the immediate state of feeling of the individual. It served to provide information about the state of the relationship between interacting individuals, whereas digitally or verbally encoded information pertained to propositions about states of affairs that were not necessarily tied temporally and spatially to the prevailing interaction. Ruesch maintained, as many others also came to do (cf. Sebeck, 1962; Watzslawich, et al., 1967; Wilden, 1972) that nonverbal or analogic codifications were the first kinds of codifications to be mastered in the developmental sequence, that they were more closely related to phylo-genetically older modes of codification and that they were less fully subject to conscious control.

The view of 'nonverbal communication' that emerged from this line of thought has been very succinctly expressed by Gregory Bateson. He has written:

> . . . our iconic communication serves functions totally different from those of language and, indeed, performs functions which verbal language is unsuited to perform. . . . it seems that the discourse of nonverbal communication is precisely concerned with matters of relationship — love, hate, respect, fear, dependency, etc. — between self and vis-a-vis or between self and environment and that the nature of human society is such that falsification of this discourse rapidly becomes pathogenic. From an adaptive point of view it is important therefore that this discourse be carried on by techniques which are relatively unconscious and only imperfectly subject to voluntary control (Bateson, 1968: 615).

2.3. Some consequences of the concept

The formulation of the notion of 'nonverbal communication' in these terms had several consequences. First of all, as we have suggested, it led to the investigation from a communicational point of view of many aspects of be-havior that hitherto had been overlooked. Not only did it provide a new perspective for the long tradition in psychology of studies of 'expression', expecially facial expression, but it also meant that aspects of behavior such as gaze direction, posture, and interpersonal spacing came to be studied. It came to be realized, as a consequence of this notion, that the way in which one person came to adjust or alter his behavior when in the presence of another was to be understood neither in purely practical terms nor in terms of some notion of 'expression', where this is thought of simply as the translation into external forms of inner states. It came to be realized that persons in each

other's presence guided their behavior in relation to one another in the light of information the behavior of each provided. Thus actions of all sorts came to be viewed in terms of their possible significance as message in interaction. All aspects of behavior, it appeared, could function communicationally.

The notion of 'nonverbal communication' has also encouraged the view, however, that communication by actions can be studied independently of words. It has suggested that there is a great divide in human communication, with words on one side and all else on the other. Yet, as soon became apparent, the sharp distinction which the concept of 'nonverbal communication' proposes is impossible to sustain. It is impossible to establish consistent criteria by which to distinguish 'words', and what they convey, from everything else (cf. Lyons, 1972). Furthermore, from a functional point of view, as developments in the analysis of the pragmatics of language (Bates, 1976; Ochs and Schiefflin, 1979), 'conversation analysis' (Schenkein, 1978), and 'discourse analysis' (Coulthard, 1977) have made abundantly clear, verbal utterance plays as crucial a role in the establishment and maintenance of interactive relationships as nonverbal aspects of human action do. At the same time, as studies of gesture show, aspects of human action that are definitely not 'verbal' may nevertheless serve in the place of words or may serve as an essential component in referential communication (see 5.0 below).

3.0. Theoretical and methodological issues

A further drawback of the concept of 'nonverbal communication' is that it tempts one to think of it as one sort of communication only. Yet in fact, as Ruesch pointed out in his early discussions, there are many different kinds of 'nonverbal language'. Ruesch (Ruesch and Kees, 1956) suggested that a distinction should be drawn between what he called *sign language, action language*, and *object language*. Sign language for him 'includes all those forms of codification in which words, numbers and punctuation signs have been supplanted by gestures'. *Action language* refers to the communicative consequences of ordinary actions. Object language 'comprises all intentional and nonintentional displays of material things'. Ruesch goes on to point out that not only do these different 'languages' differ from one another in mode of codification and in whether they comprise actions or the results of actions but they also differ in terms of the kinds of information they convey. He suggested, for example, that the kinds of messages which 'action language' convey are different from the kinds of messages that are conveyed by the explicit use of gestures (or 'sign language', in his terms).

The paper by Ekman and Friesen, which is the first in the present collection, addresses just this issue. Ekman and Friesen suggest that their article

'may make it more difficult to conceive of nonverbal behavior as a simple, unified phenomenon'. In this paper they set out to suggest that in considering any action (by implication from a communicational perspective) one must see that it may differ in how it was acquired, the circumstances in which it may be employed, and in how it encodes whatever message it may convey. They further propose five 'types' of nonverbal behavior: 'emblems', 'illustrators', 'affect displays', 'regulators', and 'adaptors'.

In several respects, as we shall explain shortly, this paper has been superseded by later work by Ekman and his colleagues. We reprint it here, however, both because it has some historic importance and because it touches on several theoretical issues that are still very much with us. Several of these issues will now be discussed.

3.1.   *Intentionality and the concept of communication*

We may begin with the question of how the term 'communication' is to be used. Ekman and Friesen suggest that behavior should only be considered 'communicative' if the person providing it *intended* thereby to convey some message, regardless of whether or not anyone else is able to receive the message. Ekman and Friesen suggest that behavior, from the point of view of its meaning, may be either idiosyncratic (its meaning known only to one person) or shared. Behavior which has shared meaning is said to be *informative*, insofar as it conveys information to someone other than the producer, but such behavior will only also be *communicative* if the producer intended to send the information that was received. Ekman and Friesen further suggest that behavior may be said to be *interactive* if, within the context of an interaction, it can be shown to influence the behavior of the other.

Ekman and Friesen offer these terms and these distinctions in opposition to a use of the term communication which they attribute to Birdwhistell and Scheflen (cf. Birdwhistell, 1970; Scheflen, 1973) in which it is supposed that 'all behavior is communication'. This way of using the term 'communication' arose, as we have seen, as a consequence of developments in information theory which showed that, from this point of view, any event can be treated as signal. Writers such as Birdwhistell and Scheflen, and also Bateson and Ruesch, use the term 'communication', thus, to refer to the process of conveying information in any form whatever. This is the sense of the term intended by Shannon and Weaver (1949) and other information theorists. In this sense of the term, the focus is entirely upon the effect of the behavior upon a perceiver of it. No reference is made to the intentions or motives or causes that may lie behind the behavior that is perceived to occur. Ekman and Friesen, however, are proposing to include in the definition of the term 'communication' a reference to

what was intended by the person in producing the behavior in question. This is a different, and more restricted, sense of the term than the usage of it that had come to be proposed by those influenced by communication theory.

Ekman and Friesen are not alone in wishing to make this restriction. MacKay (1972) and Wiener, et al. (1972) have advanced a very similar argument. If 'communication' is conceived as the general process of information transfer, however, the question of the intention that governs the production of any item of behavior is irrelevant. Furthermore, a little consideration shows that the 'message intended' is not determinable. The communicative intent of an action is thus not suitable as a criterion for deciding what should and what should not be considered as 'communication'.

The question of intentionality is irrelevant because, as we have seen, to witness a behavioral event is to receive information and the process of communication has, accordingly, taken place, regardless of what was intended by the production of the behavior. The question of intentionality is not determinable because whatever message an actor may have intended to convey there are always messages at other levels that are conveyed simultaneously. Which of these the actor may have intended can never be known for certain. If P thumbs his nose at Q, not only does he thereby convey an insult to Q but also, insofar as it is recognized as a deliberate act, the nose thumbing conveys the message that P intended to address Q and, that he did address him is itself a message, when this is taken in contrast to its absence (cf. Ruesch and Bateson, 1951: 213). In addition, actions never occur except within a context both of other actions and of a situation, and the relationship an act bears on its context is itself a source of message. If the nose thumbing is done at a party in the context of a jocular conversation it will have a very different significance from its occurrence in the course of an argument in the street. There are, thus, many 'layers' of message for any distinguishable act, and many of these layers cannot be part of the actor's intent, at least not as he is able to report it. Certainly, we can never be in a position to determine the extent to which they are. Thus for those writing from an information theory perspective, because the issue of whether or not a certain meaning was intended or not cannot be determined it cannot be put forward as a criterion for deciding which sort of action is to be admitted as 'communicative' and which is not.

If analysts of behavior from a communicational perspective cannot use the intention that may or may not lie behind any action as a criterion for considerating the action's relevance for communication, it nevertheless remains that participants in interaction themselves act as if such intentions are readily discernible. Participants in interaction continually distinguish actions that are 'intentional' from those that are not. Actions that are considered 'intentional' are responded to very differently from those considered to be

involuntary or merely done in the course of something else and not designed to send any particular messages. Goffman (1963) makes this point very clearly in his useful discussion of the differences between what he calls 'given' and 'given off' information. Information that is 'given', according to this discussion, is information that is provided through actions such as utterances and gestures that are regarded by those who receive them as fully intentional. The messages of such actions are considered to be fully the consequences of the other's intentional action. He is held fully responsible for them and he may be challenged and held to account. Information that is 'given off', however, is information which is, as Goffman puts it, 'gleaned' from another. It is picked up from the other, regardless of whether he intended it or not. The individual from whom information is gleaned is not deemed to be fully responsible for it and he is not liable to be challenged about it and if he is, he is often able to deny having any intention of providing it. Information that is treated as 'given off' by someone includes information that is provided by his bodily size, shape and coloring, his clothing and adornments, his manner of moving and speaking.

Information that is made available in this way, though not treated as being provided deliberately in the same way that information provided by spoken utterance or gesture is treated, may nevertheless be under some degree of control of the individual. People often go to considerable lengths to insure that their clothing, appearance, and manner will create the right 'impression'. It will be seen, thus, that what is actually intentional and what is not need not by any means be the same as the way it is treated by others. Accordingly, although it is fruitless to try to decide what messages a person *actually* intends to convey and what he does not, how people treat each other in this regard should nevertheless be carefully attended to. That is, it is very important to consider what aspects of the flow of information participants treat *as if* they have been provided intentionally and what aspects they treat *as if* they are unintentional. As a corollary to this, it then becomes a matter of great interest to investigate which features actions must have to be treated as intentional and which they must have to be treated otherwise. To the best of my knowledge, this question remains one to be investigated systematically, although Weiner, et al. (1972) offer some interesting suggestions that are relevant here.

3.2. Origins, codes, and categories

A second issue Ekman and Friesen refer to is the issue of the 'origins' of behavior. By this they mean the question of how a pattern of behavior came to be established in an individual's repertoire: has it arisen because it is 'wired in' or has it been acquired through a process of learning? An important part of the work Ekman has done, much of it subsequent to the publication of this

article, has been concerned with this question. In particular, he has sought to answer this question with respect to facial expressions of emotion. His basic position on this issue is discussed at some length in the paper we reprint here in the section devoted to 'affect displays'. The thrust of the work has been to argue that facial expressions of emotion are manifestations of biologically determined patterns of action. He distinguishes six basic patterns which are considered to be discretely different from one another, which he suggests can occur in certain blends or combinations to generate a wide range of complex affect displays. Ekman offers in the present paper an early version of what he has come to refer to as the 'neurocultural' theory of affect display in terms of which cultural variations in facial expressions are to be explained in terms of cultural variations in 'display rules' — rules which govern when and how affect displays may be manifested. Ekman's work on this issue may be found in Ekman, Friesen, and Ellsworth (1972) and Ekman (1973), which also contains useful reviews of many aspects of work on facial expression. The most recent statement of the neurocultural theory of affect is provided in Ekman (1977). A detailed discussion of the whole issue of the origins of facial expression in relation to evolutionary theory is to be found in Ekman (1980).

The other issue of theoretical importance which Ekman and Friesen discuss is that of 'coding' by which they mean the 'principle of correspondence between the act and its meaning'. This issue is, of course, central to the development of any theory of communication; we have already seen that the distinction between 'analogic' and 'digital' encoding provided the starting point for the whole concept of 'nonverbal communication'. We shall delay any further discussion of it until section 5.0 of this Introduction, however, when we shall deal with some of the issues of coding in reference to gesture. The discussion of coding which Ekman and Friesen offer in the paper reprinted here, it will be seen, has relevance chiefly to the phenomena of gesture.

Ekman and Friesen's paper is perhaps most well known for its definition of five categories of nonverbal behavior termed 'emblems', 'illustrators', 'adaptors', 'affect displays', and 'regulators'. A critique of these categories would be out of place in this Introduction. However, it will be noted that in setting up such categories Ekman and Friesen appear to believe that it is possible to assign actions to such categories on an exclusive basis. For example, of their category 'regulator' they write: 'though a whole variety of behaviors can serve regulatory functions, we reserve the lable *regulators* for those behaviors which do not fit into one of our other categories; that is, for behaviors which seem only to regulate' (p. 90).

I would like to point out how markedly such an approach differs from the one suggested by the theory of communication initiated by Ruesch and Bateson under the influence of information theory. From this approach it would be argued that a final assignment of any item of behavior to an absolute

category of communicational function cannot be accomplished because any distinguishable act participates simultaneously in a multiplicity of communicational functions. From this point of view, absolute behavioral types cannot be established. From Ekman and Friesen's paper one comes away with the view that people have repertoires of sharply distinguishable types of acts that can, independently of the contexts of their occurrence, be labled exclusively as either an emblem or an illustrator or an adaptor, or the like. However, from the point of view of a communications theory approach, no action can be understood to 'be' anything, apart from the context in which it occurs, including the perspective in terms of which it is dealt with by its recipient. No action can ever absolutely be a regulator, an emblem, an illustrator, and nothing else. To refer once again to P thumbing his nose at Q: such an act is indeed highly coded and when shown outside of any context of discourse it may be recognized as an insulting gesture (Morris, et al., 1979). Yet, though P, in using this gesture in an address to Q, may insult him, he is also performing an act which takes its place in whatever turn structure the interactional event in which it occurs may have, and it thereby participates in regulating the interaction. It will also be performed in a particular manner or style which will certainly convey information about P's affective state, among other things. Rather than establish it in an absolute category, therefore, the alternative approach we here refer to would recommend that it be considered in terms of how it participates in the multiplicity of communicational functions which the situation calls for.

We have considered Ekman and Friesen's paper at some length because it ranges over so many of the theoretical issues that are quite central to the field we are concerned with here. It is perhaps surprising to note that efforts comparable in scope to that of Ekman and Friesen are rather few. Ruesch's papers we have already mentioned and, as we have already indicated, the discussion in Ruesch and Kees (1956) remains one of the most comprehensive theoretical discussions in the field. Other essays on a comprehensive theoretical treatment for 'nonverbal communication' include the discussion by Wiener, et al. (1972), discussions by Scheflen (1963, 1964, 1966, 1973, 1979, 1980), by Birdwhistell (1970), and in Sebeok, Hayes, and Bateson (1964). Important treatments may also be found in Hinde (1972), especially in the chapters in that volume by MacKay, Lyons, and Leach. Gregory Bateson's general position may be found in Ruesch and Bateson (1951), Bateson (1970), and in Bateson, Weakland, Haley, and Jackson (1956). Bateson addresses himself explicitly to the phenomena of nonverbal communication in Bateson (1968). Lipset (1980) provides a useful guide to Bateson's thinking as a whole.

3.3. *Differential functions of 'nonverbal communication'*

Ekman and Friesen, by proposing that behavior may be classified into several different categories, imply that different aspects of human behavior convey different kinds of information. The kinds of information conveyed by gestures – well-bounded, short-lived actions, perceived as fully deliberate – are different from the kinds of information conveyed by bodily posture, for example. A systematic treatment of this point has not been attempted anywhere, although it would seem well worth an exploration. The article by Poyatos on 'The forms and functions of nonverbal communication in the novel' is relevant to this, however. He discusses the uses that novelists make of descriptions of various nonverbal aspects of behavior of their characters. He shows how this may be used in a variety of ways to convey certain kinds of information about the characters. A further exploration of this, for which Poyatos' article merely provides a beginning, might be quite illuminating from the point of view of this question. Folklorists interested in gesture have made use of literary sources (e.g., Taylor, 1971) and there are a few papers that have looked at the use of nonverbal communication by writers (e.g., Marks, 1971, 1974). The present article offers, however, a systematic exploration of the many different uses which novelists make of nonverbal communication and it provides a starting point for more extensive investigation of this question.

Poyatos also discusses the question of the technical problems faced by a writer who would like to portray manners of speech, nuances of facial expression, or gesture. He points out that there are few devices available to the writer, other than verbal description, by which an author may portray various aspects of speech, such as pauses, hesitancy, rapidity, and volume, and by which he can indicate certain aspects of intonation and stress, and these are all quite limited. Furthermore, there are no conventional devices by which kinesic aspects of behavior can be written down.

Poyatos seems to consider this a lack, and he sees no reason why conventional written forms for at least some of the extralinguistic aspects should not be invented (cf. Poyatos, 1975). However, one may perhaps also approach this observation from another point of view. One may ask why it should be that there are well-established devices for writing down the verbal aspects of speech as well as a limited set of devices for other aspects of speech which are essential to a clear comprehension of the written text, but no devices for anything else. To convey tone of voice, pattern of facial expression, mode of gesture, the author can only resort to written description. To accompany one's written text with a kinetic and paralinguistic score might be a device useful for playwrights, but it seems that this would not at all be in the interests of the improvement of literary power. This is because scores or notation systems are instructions for action. A written text has a different function to

perform. It serves as a means of transmitting images and concepts by way of language.

3.4.   *Problems in the description of behavior*

Any attempt to analyze how the behavior of participants in interaction functions communicatively necessarily involves an analysis of the behavior itself. Some means have to be found of giving an account of the body movements, orientations, and patterns of facial actions that occur with a view to specifying which dimensions and which variations in such actions are significant. A major branch of the study of language, *phonetics*, is concerned with the analysis of the nature of the acoustic signal of speech and how it is produced. One can envisage an analogous development for the study of other aspects of behavior that function communicationally. How is such a task to be approached? There have been numerous attempts to develop notation systems for various aspects of behavior besides speech, including gesture (Austin, 1806; Birdwhistell, 1952; Stokoe, 1960; West, 1960) and facial expression (Kendon, 1975b; Blurton-Jones, 1971, Birdwhistell, 1952). Choreographers, perhaps, have advanced the art of movement notation the farthest. Labanotation, developed by Rudolf Laban (Laban, 1950, 1956; Hutchinson, 1966) is one widely used system which is quite comprehensive and may well prove capable of adaptation to any situation where there is a need for the transcription of bodily movement. Eshkol-Wachmann (Eshkol and Wachman, 1958) is another system that is also comprehensive and developed for choreographic purposes. It has been applied to the study of behavior of interaction among animals, notably jackals (Golani and Zeidel, 1969; Golani, 1976) and it has also been used for the description of signs in Israeli sign language (Cohen, Namir, and Schlesinger, 1977). Key (1977) provides a useful compilation, with a very extensive bibliography, of the many different attempts that have been made in the notation of bodily movement. Rosenfeld (in press) provides a recent critical survey.

The article by Freedman that is reprinted here is a review of Paul Bouissac's *La Mesure des Gestes* which, as Freedman makes clear, is a very useful discussion of many different movement notation systems. It is also an attempt to argue for an approach to the recording of movement in a completely objective and digital form by way of a mechanical recording device. The device that Bouissac proposes in this book is a device that would serve, for him, as an ideal solution to the problem of the recording of bodily movement as a preliminary to the analysis of its communicational function. As explained by Freedman, Bouissac maintains that any notation system is bound to distort the phenomena being notated. Particular aspects are bound to be given em-

phasis because of the biases the investigator's theoretical outlook impose on his perceptions. Furthermore, a notation system involves an analysis of the behavior in terms of units of some sort. Since behavior is actually continuous, the segmentation of this continuous flow into units which any notation system will involve constitutes another way in which the theory implicit in the notation system is imposed upon the phenomena to be studied. Many writers have been concerned with this problem, of course, and numerous attempts to find a way of making unbiased notations have been made. Bouissac reviews and criticizes many of these attempts and offers a solution of his own.

Freedman provides a very perceptive discussion of the problems inherent in any project of this sort. He points out that, for example, quite apart from the fact that it is probably impossible to devise a machine that will objectively record all aspects of behavior, if something like this were to be achieved we would have no way of interpreting such a record. Bouissac's totally objective record, it appears, seeks to describe bodily movement as a succession of spatial volumes. Freedman reminds us that the human body is organized into distinguishable anatomical systems that tend to be employed differentially with respect to different communicational functions. A totally nonselective recording system that did not make such anatomical discriminations would present insuperable problems for interpretation.

Second, Freedman points out that the significant units of behavior in terms of which people respond to one another are units of action of which bodily motion may only be a part. Thus he suggests that the significance of a given movement of, say, an arm or hand movement may depend upon whether it is embedded within a spoken discourse structure or not. No sense could be made of any purely objective recording of movement in itself, separate from everything else, until we are able to establish its context with respect to whether or not it is focused interaction, for instance, and whether or not it is produced by the recipient of an utterance or by the producer, and how it may be integrated with the verbal content of the utterance that is produced.

This last point relates to Freedman's conclusion in which he argues that the first step in any analysis of behavior is not to record everything as objectively as possible. Rather, our first step must be to seek to establish through 'naturalistic observation' those aspects of behavior that appear to be most relevant for a given functional system. Once this step has been taken, but only then, does it become appropriate to engage in some kind of precise measurement. For example, it becomes appropriate to undertake precise quantitative analyses of spatial arrangement in interaction only after naturalistic observation has suggested how in different kinds of interaction of situations different spatial arrangements are employed. Only when we have established the relevance of studying patterns of action in the face does it become appropriate to devise a means of recording facial action in greater detail.

In short, in approaching the phenomenon of behavior in interaction, one must first develop an hypothesis about its organization and use this hypothesis to specify which aspects of behavior are relevant and which are not. Greater precision of analysis, involving refined techniques of recording of selected aspects of behavior, comprises a later step in the analytic process. The first step in analysis is not to record 'everything' objectively. The first step in analysis is to develop some notions about its organization.

The last paper included in Part I of this collection is also concerned with the problem of behavioral description, in this case that of the behavior of one functional — anatomical system (or 'instrument' of human communication) — the face. The face has always been recognized as an instrument of human communication second only to that of the voice and it has attracted scientific attention at least since the work of Sir Charles Bell (1847). Bell, an anatomist, sought to establish by what muscular movements the different emotional expressions of the face were produced. Such a project was also pursued by Duchenne (1862) who, by stimulating the muscles of the face electrically (first in the faces of recently guillotined criminals, later in the face of a man who could feel no pain) provided a photographic atlas of all of the different facial expressions produced by different muscular contractions.

The cues by which people recognize emotion in the face has been a persistent theme of subsequent investigations, given special impetus by the work of Darwin (1872) who claimed that facial expressions were the products of evolution by natural selection and that therefore both the production of expressions and their recognition was a matter of instinct rather than of learning.

The relevance of the face to the study of human communication is thus not in doubt. However, it presents enormous problems of description, as Seaford indicates. Seaford reviews a number of the schemes that have been developed for the description of the face but concludes that none of these allow for the replication of description. If the descriptions are given in terms of the actions of the facial muscles, however, such replicability, he argues, can be achieved.

Since Seaford's paper was published, Ekman and Friesen have published a very detailed system for describing facial action, firmly grounded in an analysis of the visible effects of muscle contractions. They have specified some 35 'action units', defined in terms of the actions of specific groups of facial muscles, and it is in terms of these that their descriptions are made. Their system is notable for the great detail in which the criteria for the recognition of these 'action units' have been spelled out, making it possible for analysts of facial action to be systematically trained. Ekman and Friesen acknowledge that it was Seaford who finally convinced them that an anatomically based description was both feasible and necessary (Ekman and Friesen, 1976: 4). Their system replaces earlier attempts which had not been based on the

musculature (for example, the so-called FAST system reported by Ekman, Friesen, and Tomkins, 1971). Accounts of Ekman and Friesen's Facial Action Coding System (FACS) may be found in Ekman and Friesen (1976, 1978). Studies making use of it have only begun to appear quite recently. They include Oster (1978) and Liddell (1978). For a review see Ekman and Oster (1979).

Seaford's paper also includes a study of a 'facial dialect'. It has often been suggested that people in different cultural regions or people who belong to different subcultural groups have characteristically different ways of holding their faces. Seaford's study, highly preliminary though it remains, is in fact the only one so far to have been published that deals with this aspect of facial behavior. It remains an intriguing field for further study.

4.0. Organization of behavior in face-to-face interaction

It is to the study of how human action functions communicationally within the context of the face-to-face social encounter that most of the work on 'nonverbal communication' has been directed and, as we have suggested, this area of concern seems to be a defining feature of the field. In Part II we present eight papers which together cover a representative sample of the various problems that have been tackled.

The limit of the concern with face-to-face interaction may be taken to be the limit of *copresence*, a term used by Goffman (1963) to refer to any occasion where two or more persons are able to detect each other's presence by their unaided senses. Goffman has further proposed a useful distinction between 'unfocused' and 'focused' interaction. 'Unfocused' interaction refers to the mutual adaptation in behavior that people display whenever they are merely copresent to one another. 'Focused' interaction refers to any instance, however fleeting, where two or more individuals come to jointly sustain a common focus of attention.

4.1. Strangers in public places

We begin the present Part with two papers that are concerned mainly with unfocused interaction. They are both concerned with how people adjust to one another as they pass by one another in pedestrian settings.

Such passings by represent one kind of minimal interaction and have attracted attention for this reason. As Collett and Marsh point out, managing to avoid collisions with others is necessary for efficient living in urban environments. It thus presents itself as an issue for investigation.

The starting point of all of the recent studies of pedestrian interaction is

Goffman's discussion (Goffman, 1963, 1971). In this discussion Goffman proposed a specific pattern of gaze management by which people could both acquire information about the direction of movement of the other and also avoid indicating to the other that they were an object of special curiosity or design. This presents a point of particular interest to students of interaction: the eyes, as has been widely observed, are of great salience, being at once the principle means by which we acquire information about the environment around us, including others, and also the principle clue by which someone else may gather the direction of our attention and interest. For this reason the management of the glance in the pedestrian setting seems to be a matter of particular delicacy. One must look at others so as to avoid bumping into them. However, in these circumstances, we must not look at them too directly, lest they think they are of special interest.

Collett and Marsh report a pattern of gaze in pedestrians in the setting which they studied which suggested that passers by picked up information about each other's direction of movement from the movement of their body and they did not, as Goffman suggested, assess each others intentions by exchanging glances. Givens selected for observation only those pairs of pedestrians who had either already looked at one another or who had actively begun to avoid the other as they approached on the sidewalk. He thus confined his observations to how people handled one another when each had already been noticed. His findings suggested that, in these circumstances, when persons unacquainted with one another behaved in a way that indicated definite attention to the other, avoidance displays could be observed.

Studies of patterns of gazing and facial expression in passing pedestrians using film analysis have been conducted by Carey (1978, 1979). He shows that there is considerable variation in looking patterns in these circumstances. He finds that there is little difference between the way pedestrians behave when passing one another and the way they behave when by themselves. He does find, however, that when males and females pass by one another they are more likely to look at one another than are same-sex passers by.

It should be pointed out that no one has systematically compared settings in studies of this sort. Carey's observations were conducted on the campus of a large university. Givens' observations were conducted in several different settings, but all of them crowded and urban. Goffman does not specify any particular settings for his observations. Yet, as Goffman's discussion also reminds us, the way in which unacquainted individuals are likely to treat one another as they pass one another in public tends to vary considerably with circumstances. In lonely places passers by often offer each other gestures of greeting and in very lonely places, such as the North African desert, passers by, who are very rare, are under an obligation to approach and greet one another (Youssouf, Grimshaw, and Bird, 1975). This has been interpreted in

terms of the idea that in such circumstances people need to reassure each other about their intentions. Further studies of how passing strangers deal with one another should include systematic comparisons of settings.

4.2. Greetings

Greetings, which may most simply be defined as an exchange of actions by which two individuals acknowledge that they have seen each other and by which each provides the other with information about how the other will be treated, have received considerable attention in recent years. They offer themselves as a seemingly well-defined unit of interaction and they are, of course, functionally important. It is through the ritual of the greeting that people define their social access to one another. Schiffren's paper on the handshake is a fine example of how a single ritual act, commonly part of greetings, but found in other (related) contexts as well, can be traced out in its various usages. It may be compared with Goffman's treatment of hand-holding as a 'tie-sign' (Goffman, 1971) and MaCannell's treatment of hat-tipping (MaCannell, 1973). Schiffrin's article may be said to exemplify an approach to the study of a particular behavioral form and the contexts in which it occurs. Other studies of particular behavioral forms that are used in greetings include Eibl-Eibesfeldt's studies of the eyebrow flash (1972, 1975). Descriptions of other greeting gestures may be found in H. Ling Roth (1889), Firth (1973), and Eibl-Eibesfeldt (1974).

There are also a number of studies which have analyzed the structure of the greeting encounter as it unfolds in time. Thus Kendon and Ferber (1973) and Kendon (1980b) have proposed that greeting encounters may be divided into a number of stages. For example, it is pointed out that the accomplishment of a 'close salutation' such as a handshake depends upon the accomplishment of a number of preceding steps. To begin with the two parties to the greeting must sight one another. Following this, there must be a step which serves as a pregreeting agreement to greet. This is often explicitly ratified in a 'distance greeting'. This will then be followed by a phase in which the participants must cooperate with one another to establish the appropriate spatial and orientational relationship for carrying out the 'close salutation', whatever it is to be. They must also exchange signals by which they can agree on the sort of close salutational ritual that is to be performed. Youssouf, Grimshaw, and Bird (1975) have offered an analysis of the greetings that occur between Tuareg travellers when they pass one another by in the desert. They show how these greetings likewise go though a number of steps which are very similar to those proposed by Kendon and Ferber (1973) and Kendon (1980b), whose studies were done largely with greetings filmed at a garden party near

New York City. Schiffrin (1977) has offered an analysis of encounter openings based on encounters in urban situations. She has confined herself mainly to a consideration of the verbal exchanges of such encounters but once again the steps she suggests are closely comparable to those suggested by Kendon and Ferber (1973) and Youssouf, Grimshaw, and Bird (1975).

Most studies of greeting have concentrated on what Kendon and Ferber (1973) refer to as the *close salutation*. There are many scattered descriptions of such salutations which, as the compilation of H. Ling Roth shows, display a remarkable diversity. Discussion by Firth (1973) and Eibl-Eibesfeldt (1974b, 1980), however, do suggest that there are certain principles by which this diversity can be accounted for. In particular, the close salutation serves as a means whereby relative status between greeters is expressed. Despite superficial differences, the underlying principle, the greater the disparity of status, the greater the asymmetry of the performances of the respective participants, seems to be widely upheld. Studies of variations in greeting rituals within a particular society, relating this variation to specific kinds of social relations have been presented by Kommenich (1977) and Goody (1972).

Greetings, as Goffman (1971) has shown, may be regarded as a species of access ritual of which departure rituals are the converse. There are far fewer studies of departure than of greeting, however. Apart from the descriptions that may be found in ethnographic reports, departures have been studied systematically by Sacks and Schegloff (1973), Knapp, et al. (1973), Albert and Kessler (1976, 1978), Laver (1975), Lockard, et al. (1978), and Deutsch (1979).

4.3.   *Coordination of action in interaction*

Greetings have a number of functions. While they always can be interpreted as serving to mark an increase in social access, they also serve as a way of establishing a common frame or perspective for the focused encounter. This shared frame may be established in a number of ways but the ritual of greeting exchanges provides an important way of doing this. The focused encounter, of which conversation is an instance, is the locus of most of the work that has been done on the communicational functions of behavior. One issue that has attracted particular attention is that of the coordination of turns at talk. One approach to this question has been to suppose that such coordination may be achieved through a mutual adjustment of the temporal pacing of utterances. Chapple (1940), in his pioneering work on the measurement of the temporal patterning of utterances in conversation, proposed that coordination is achieved through the mutual adjustment of each participant's interactional rhythm. Chapple's work led to the development of diagnostic studies of 'interaction

styles'. Such styles were measured in terms of the temporal patterning of utterances in conversation and in terms of the way in which individuals differed in how they responded to changes in the temporal patterning of utterances of their partners. Accounts of this work are to be found in Chapple, Chapple, and Repp (1955) and in Chapple (1949, 1970). Readers interested in this approach should also consult the work of Matarazzo and his colleagues (e.g., Matarazzo, Wiens, Matarazzo, and Saslow, 1968). For more recent work see Jaffe and Feldstein (1970) and the collection of papers in Seigman and Feldstein (1979).

A second approach to the problem of coordination of action in interaction is one that begins by considering features of behavior in an interactant that could serve as cues to another as to whether a participant was about to begin an action such as a turn at talk, whether they were to shortly bring it to an end, whether they were to continue it, or whether they were to pass by an opportunity to take their turn at talk. Kendon (1967), for example, reported observations on the regularity of patterning of gaze direction changes in two-person conversations and presented evidence that such patterning functioned in the process of coordinating 'floor apportionment' or 'turn taking' as it is now usually referred to. Duncan, in a series of papers (Duncan, 1972, 1973, 1974, 1975), has pursued the issue of turn-taking cues with great thoroughness and has shown that several different aspects of both bodily movement and speech may function as turn-taking cures, either singly or in combination. This work is well summarized in Duncan and Fiske (1977). Other contributors to this line of investigation include Wiemann and Knapp (1975), Beattie (1978, 1979) and Rutter and Stephenson (1977) and Rutter et al. (1978). These last two authors have continued the investigation of the turn-taking function of gaze. Their findings suggest that Kendon's widely quoted conclusions on this point may need considerable modification.

De Long's study, which we include here, is of interest because it is one of the few studies of turn-taking cues in children (another study is by Dittman, 1977). De Long's study is also of interest because he provides detailed case by case analyses which show the diversity of kinesic action that can function as a turn-taking cue. He finds that the four- and five-year-old children he studied did not offer turn-initiation cues as much as they signalled turn-termination cues. Whether or not this is a general phenomenon for children of that age is not known. However, it is of interest in that it suggests that children of that age may not monitor the turn-taking structure of the conversation they are engaged in in the same way that older individuals do. There is room here for a considerable amount of study.

It should be observed that all of the studies of turn-taking cues hitherto have been confined to studies of two-person interactions. In encounters of three or more participants one is immediately confronted by new problems.

For example, where there are two or more potential speakers competing for the same stretch of time for talking, devices for establishing turn-queues may arise. A particular individual may have to establish a recipient for himself from among the several that are potentially available. Individuals will also have to indicate to whom their utterance is addressed. None of these arise in the two-person situations that have so far been the locus of turn-taking studies.

4.4.   *Direction of gaze in interaction*

We have already mentioned the study by Kendon (1967) in which changes in gaze direction in relation to the occurrence of spoken utterances in conversation was studied. This paper suggested not only that interactants thereby signaled their intent with regard to beginning or ceasing to speak but it also suggested a number of other functions of gaze in conversational interaction. This paper, along with the work of Nielsen (1964), Exline (1963), and Argyle and Dean (1965) comprise the beginnings of the systematic study of gaze in interaction. Since that time, the study of gaze has grown very considerably indeed. Argyle and Cook's (1976) survey lists some 400 references. Another recent survey, Harper, Wiens, and Matarazzo (1978), which is somewhat less comprehensive, covers 243 references.

The peculiar feature of gaze, which is part of what makes it so attractive for researchers is that it is at once the means by which persons gain important information about what is going on around them and also, because they can be seen by others to be looking, a means by which others can tell from where in an environment an individual is deriving visual information. The direction in which the eyes are pointing provides an index of the direction of the individual's attention.

The paper by Argyle, et al. seeks, by measuring under different conditions the amounts of time P spends looking in the direction of a conversational partner, to assess the extent to which gaze serves in six different functions that the authors' outline. By using a one-way screen the authors are able to vary who can see whom during the conversation. Assuming that all six of the different functions suggested may be operating at once, the authors are able to make predictions about how the amount of time spent looking in the direction of the interlocutor will vary from one circumstance to another.

Argyle, et al.'s paper illustrates a highly experimental approach to the study of the functions of gaze. Beattie's paper that follows represents what can be achieved through the close analysis of naturally occurring interaction sequences that have been recorded on video-tape. In this paper, Beattie reviews the various functions of gaze that have been distinguished and he then focuses

on the issue of how speakers pattern their lookings and lookings away in relation to features of their speech which can be related to the planning processes that underlie speech production. In general he finds that the cycling of looking-at–looking-away from one's interlocutor is coordinated with the organization of planning and production phases of the utterance. During planning phases, indicated by pausing, the speaker looks away. During speech production the speaker looks at the interlocutor. He also finds that listeners offer head nods or other listener responses at the boundaries of speech units preceded by planning pauses, indicating that speech is dealt with by the recipient in units that are similar to those in terms of which it is produced. Beattie's findings are in accord with those reported by Kendon (1967) and Allen and Guy (1977).

It will be clear from several places in Beattie's discussion, however, that it is insufficient to treat gaze merely as a symptom of inner processes. Its fluctuations cannot be accounted for on the basis of this alone. Since, as we have seen, gaze is taken by others to be an index of direction of attention, individuals come to deploy their gaze as a means of signalling their attention. Gaze direction becomes a device for displaying attention direction. Focused interaction is characterized by a jointly sustained focus of attention between the interactants. Accordingly, rules arise governing the ways in which gaze direction (among other aspects of behavior) is to be deployed in interaction if a proper show of attention in the situation is to be sustained (cf. Goffman, 1957). Thus patterns of gaze direction in interaction must also take into account the rules that govern the use of gaze within interaction and they must also take into account the strategies that the participants are following in interaction. As Duncan and Fiske (1977) have argued, if there are rules that govern behavior, participants in interaction will relate to those rules in various ways. How they pattern their behavior in relation to what is expected in the situation is part of the way in which interactants establish and sustain a particular 'line' (cf. Goffman, 1955). A full account of the use of gaze in interaction, thus, as indeed for other behavior as well, requires that these rules of usage be made explicit.

4.5. *Multiple levels in communicational functioning*

The last two papers included in Part II, though very different from one another in several respects, are both thoroughly interactionist in their outlook. That is to say, they attempt to look upon the behavior that may be observed in a strip of social interaction strictly from the point of view of how it serves the interaction in question. Rosenberg establishes this as the second of his two methodological tenets. Kendon is less explicit but he presents his paper as an

attempt to approach patterns of action in the face from the point of view of their interactive functions rather than as symptoms of emotions or feelings. Second, in both of these papers a single specimen of interaction is analyzed for its internal structure. In both cases it is supposed that the interactional event that has been recorded is highly structured and it is the aim of the analysis to display that structure.

The paper by Kendon (which is unusual because it is one of the few studies of a kind of interaction *other than* conversation), seeks to show, by examining the patterning of action in a kissing round in relation to the pattern of changes in the facial expressions of the participants, that it is possible to see how these changes in facial expression appear to function as signals regulating the progress of the action. The analysis deals with facial expression, thus, not from the point of view of its functions as a symptom or manifestation of emotion but from the point of view of how facial expression may function interactionally. There are still few papers that take this approach to the face and much remains to be done in this regard. Kendon offers a brief discussion of this issue and he refers to a number of previous studies of the face which have approached it from this point of view. More recent papers on the face which include discussions of its interactional functions include papers by Zivin (1977a, 1977b) and Ekman (1980).

In considering the 'kissing round' it was found that several different phases or subroutines of interaction could be distinguished. The question was raised as to how the two individuals moved from one subroutine of action to another. It was shown that these changes in interactional routines are joint accomplishments of the two participants and that they are achieved through the operation of patterns of action that serve to presage or forewarn of the impending change of action. Each, thus, is given the opportunity to be appraised of how the other would like to change the interaction before the interaction actually changes. Of particular interest is the suggestion, in this analysis, of how, as changes in interaction routines are negotiated, the action that serves to forewarn of these changes can be seen both to refer to what pattern of action the participant would next like to move to, and also to the context or organizing frame within which the action is to be approached. Specifically, in this case, it is found that actions which presage a change of interactional routine carry with them a reference to the frame 'kissing' if the kissing round is to continue, but they carry with them a reference to a frame of action beyond kissing, or separate from it, if the interaction is to change from kissing to some other activity.

The issue that underlies this discussion is fundamental for the understanding of human interaction. Human beings are not constrained to respond to each other's actions in specific ways, as courting sticklebacks or herring gulls are said to be constrained. For humans, any action of P can be interpreted in a

number of possible different ways by another. Therefore by doing X, P is in no position to be sure that Q will do Y. Yet is it impossible for P to formulate a coherent program of action without some basis for supposing that it will be responded to in a particular way. Thus the establishment of conditions in which one may be able to expect particular responses in one's partner seems to be a fundamental condition of coherent interaction. A basic problem for interactants, therefore, is to become assured of what sort of action they can expect from another. A common organizing perspective or 'frame' must be established, a context of interpretation which both can share (Goffman, 1961, 1974). It is a feature of human interaction, accordingly, that in producing an action a participant not only thereby responds to the other, but he also conveys information about what sort of a response his response is and thus he informs the other as to what sort of an action he took the other's action to be. Participants in interaction may be said to be continuously instructing each other in what they take the other's frame of interpretation to be, at the same time as they instruct the other in how their own actions are to be taken. This aspect of communicative functioning has been referred to as 'metacommunication', a concept first formulated by Bateson (Ruesch and Bateson, 1951).

Rosenberg, in his paper, makes explicit use of the concept of metacommunication. In his analysis, Rosenberg suggests how statements or actions by one participant in the interaction at once can be seen as 'responses' to the previous action or statement by the other, but simultaneously they can be seen to refer to the common framework in terms of which the interaction is now being governed. They also can refer to the framework in terms of which P expects his action to be interpreted. Thus, for Rosenberg, anything Q does in the context of an interaction situation serves both as a contribution to the interaction and as a contribution to the definition of the situation. Rosenberg's analysis provides us with a vivid illustration of the way in which actions in interaction serve to refer to a multiplicity of levels of meaning. This, as we have stressed more than once, seems to be a fundamental feature of human interaction.

It is also to be noted that Rosenberg shows how both verbal utterance, gesture and expressive action, and practical actions, such as drinking coffee or reading, are fully orchestrated in the communicational structure. His paper is a nice demonstration of how there is no separate 'nonverbal communication', only a number of distinguishable infracommunicational systems.

4.6. *Further issues in methodology*

The papers by Kendon and Rosenberg both proceed on the assumption that human action is interpreted in interaction as if it functions communicationally

at multiple levels simultaneously. They also both propose that meaningful conclusions can be drawn from the analysis of very short stretches of interaction. Rosenberg's analysis is built upon a study of a ninety-second stretch. Kendon's analysis is based upon two segments, each approximately two minutes in length. It could be argued that no conclusions of any sort could possibly be drawn from such short samples. Since the intensive analysis of short specimens of interaction constitutes a particular tradition in human interaction study (cf. McQuown, 1971; Birdwhistell 1970; Bateson and Mead 1942; Scheflen 1963, 1964, 1966, 1973; Kendon 1970, 1972b, 1977; McDermott, Gospodinott, and Aron 1978; McDermott and Roth, 1978) it is worth briefly dwelling on the justification for it.

First of all it is assumed by those who work in this tradition that all aspects of behavior are potentially functional in communication, a point already dealt with in our discussion of the paper by Ekman and Friesen. It will be seen that if this assumption is made, then it becomes important to be able to examine as many aspects of behavior as possible. This means that one must rely upon specimens of interaction, that is, films or video-tapes of interactional events, which allow one to examine and reexamine the behavior which constitutes them.

It is further supposed that in human communication the interactional significance of an action, how it is dealt with by a coparticipant, cannot be understood except when it is considered in context. This means that, in approaching the analysis of the specimens at hand, rather than singling out one or more aspects of behavior for separate measurement and analyzing their patterning statistically over a large sample, one proceeds by examining several different aspects of behavior to see how they pattern in relation to one another in the context of a given interactional event.

It is assumed that human interaction is highly organized. It is assumed that people in interaction behave in highly organized, patterned ways. If we can dissect the pattern into a single episode, we thereby illuminate the way in which this pattern manifests itself in other episodes that are comparable. Rather as a critic may seek to display how a poem works by a careful analysis of the way in which its various components have been organized in relation to one another, so one may take an interactional episode and show how it works by analyzing the patterning of its component parts.

The critic, in analyzing a poem, presupposes that there is a separable unit, a poem, that is distinguishable for analysis. In the same way, the analyst of the structure of interaction presupposes that a structural unit, an 'interactional episode', of some sort can be distinguished for analysis. Rosenberg is not explicit about the criteria he followed in deciding what segment of the fifteen-minute video-tape to select for his analysis, however it is clear that he begins it when the conversation is initiated and he terminates it when something new

has begun. Kendon was not free to select his own material but, being provided with footage collected by someone else, finds episodes within it. In fact the cameraman who took the footage in question undertook his own segmentation: he started the camera whenever he saw 'action' and stopped it when the 'action' was over.

The question of how to distinguish episodes of interaction is one of the fundamental questions of the field. Discussions of the problems involved with proposals for various kinds of solutions may be found in Barker and Wright (1955), Barker (1963), Pike (1967) and Frake (1964, 1975). For an attempt to investigate the segmentation of behavior as a problem in perception see From (1971) and Newtson (1976a, 1976b).

The assumption must always be made, it will be seen, that 'episodes' may be selected which have a certain recognizability as a unit and that these episodes have a structural coherence. A detailed analysis of what goes on inside the episode will reveal the nature of this structural coherence and will thus show how human action is deployed in its production. Thus the analysis of single episodes can be highly illuminating for our understanding of how human action is meaningful in face-to-face interaction.

A further, and final, point may now be made. Just as the analyst relies upon his common understanding, initially, in selecting an episode for analysis, so he also relies upon it in carrying out the analysis. The assumption that human action is intelligible for the analyst in just the same way that it is intelligible for the participants in the interaction being analyzed runs right through papers such as those by Rosenberg and Kendon. In this respect the method employed is reminiscent of the central methodological tenet of 'conversation analysis' (Schenkein, 1972; Schegloff and Sacks, 1973; Sacks, Schegloff, and Jefferson, 1974). Here the analyst seeks to establish the procedures or methods which the conversationalists themselves are following as they construct conversations with one another that are, for them, intelligible. This is done by looking at how the conversationalists themselves interpret one another's utterances. Such interpretation is revealed, according to this view, in the very responses that the participants provide one another. This method can only be followed, however, if the analysts themselves share the very same procedures of the conversationalists they are studying. What is sought after is a detailed account of the methods being followed by an appeal to specific examples. This is just the method that Rosenberg himself is following (cf. McDermott and Wertz, 1976, for another discussion of this point).

5.0. Gesture

5.1. Background

A *gesture* is usually deemed to be an action by which a thought, feeling, or intention is given conventional and voluntary expression. Gestures are thus considered to be different from expressions of emotion, involuntary mannerisms, however revealing, and actions that are taken in the pursuit of some practical aim, however informative such actions may be. Gestures have been studied somewhat separately from other aspects of behavior and in recent years they have attracted relatively little attention. This may be because they are perceived as being too close to language to command the interest of most students of 'nonverbal communication'. Linguists, however, find gestures altogether quite different from language and although several have recognized their interest and importance (cf. Sapir, 1949; Pike, 1967; Bolinger, 1968) none have undertaken to investigate them.

In some circumstances gestures can become elaborated into a more or less fully developed linguistic system. In these instances we speak of a sign language. Sign languages are most widely used by the deaf (Stokoe, 1980a). However, they have also developed in circumstances where speech is proscribed by social custom, as among Australian aborigines (Meggitt, 1954; Umiker-Sebeok and Sebeok, 1978; Kendon, 1980c) or among Cistercian monks (Barakat, 1975). They have also developed as a *lingua franca* in situations where many different languages come into contact, as appears to be the case among the Plains Indians of North America (Taylor, 1975). For most people most of the time, however, gesture seems to serve only as an adjunct to speech. In relation to verbal expression, it appears to be used as a means of decoration or dramatization, occasionally as a substitute, but only in a sporadic and seemingly unsystematic way.

In the present collection we have only included papers which deal with everyday gestures. Papers on sign language and other gesture systems which have appeared in *Semiotica* have not been considered because, as we explained in (1.0) above, the field of 'nonverbal communication', as it has emerged in recent years, does not comfortably contain them. However, any collection dealing with sign languages and gesture systems would also have to include papers on 'everyday' gestures such as those considered here. Sign languages are but special elaborations of gestural expression. They do not constitute a completely separate phenomenon.

Studies of gesture are very old. The earliest tradition concerned with them is that associated with the Classical and Mediaeval study of Rhetoric. Rhetoric was, since Quintilian (1922 [100]), divided into five divisions, of which the fifth, *pronunciatio*, was concerned with the actual conduct of the orator as

he delivered his speech. This included a careful consideration of gestures and Quintilian's treatise on rhetoric includes an extensive discussion. The first book to have been devoted entirely to gesture appears to have been the volume by Bulwer (1969 [1644]). This book includes not only detailed recommendations on how the orator should conduct himself but also, in the first part of the volume, an attempt to establish a natural history of gesture. In this, Bulwer was inspired by Francis Bacon who had proposed in his *Advancement of Learning* that a science of gesture should be established.

The influence of Bulwer's treatise is not clear (Cleary, 1959, 1974), but a later work by Gilbert Austin (1966 [1802]), which probably is indebted to Bulwer, was very influential in the development of Rhetoric in the nineteenth century (Robb and Thorssen, 1966). By that time, Rhetoric was almost exclusively confined to matters of delivery, or Elocution, as it was termed (Howell, 1959). Austin's book, which included a well developed notational system for gesture, was important as a source for the development of the teaching of gestures.

Gesture was also of considerable interest to philosophers concerned with the question of the nature and origin of language, especially in France during the Enlightenment. Condillac, for example, urged that gesture, especially as it was used by the deaf, provided an important key to the understanding of this question. He considered gesture to have been the foundation of the first form of language (Condillac, 1974 [1756]; Aarsleff, 1976). In France, at that time, there was also widespread interest in the possibility of a universal language and the natural language of gesture seemed to offer itself as a possible candidate for such a language (Knowlson, 1965, Seigel, 1969).

This interest in gesture was preserved and extended in the late nineteenth century in the work of anthropologists and psychologists when the whole question of language origins was reopened under the impact of Darwin's work (Stam, 1976). Both E. B. Tylor, a 'founding father' of modern anthropology, and Wilhelm Wundt, who was perhaps the first experimental psychologist, devoted considerable attention to gesture. Both of them gave careful consideration to the use of gesture by the deaf. Both thought that, in the study of gesture, it was possible to observe a kind of transition from natural expression to conventionalized symbolic action, and thus to glimpse the process by which language could have arisen (Tylor, 1878; Wundt, 1973 [1921]). Mention should also be made of the work of Mallery. He made a thorough study of the sign language of the North American Plains Indians, but he had a broad concern with the whole phenomenon of gesture, and indeed with the whole phenomenon of the representation and expression of thoughts in media other than words. His best known publication (Mallery, 1888) remains one of the best general discussions of this topic.

After the beginning of the twentieth century the systematic study of ges-

ture appears to have gone into decline. Although a large number of scattered and unsystematic accounts of specific gestures have accumulated (Hayes, 1957), there appear to be only six scholarly books on gesture published in English between 1900 and 1979. Of these, Critchley (1939), Efron (1941), and Morris, et al. (1979) are the most important.

Critchley's (1939) volume is a short survey of the whole field containing much valuable reference to the Classical interest in gesture (a second edition, Critchley [1977], has appeared but its usefulness is gravely impaired for it completely lacks a bibliography). Efron's book is justly famous for it provided the first and, until recently, it remained the only thorough observational study of gesture. Efron's concern was to examine gesturing styles in two contrasting U. S. immigrant cultural groups — East European Jewish and Southern Italian — and to compare their styles with the gesturing styles employed by assimilated descendants of these two groups. He showed not only that the Italians and the Jews differed markedly in their style and use of gesture, he also showed that the assimilated descendants had lost much of their distinctive styles and had adopted the style of the majority culture. In the course of this study, which was well ahead of its time in methodology (and in some ways has yet to be equalled), Efron offered many acute observations on the nature of gesture. He provided an initial classification of gestures which has formed the basis for the distinctions that Ekman and Friesen offer in their own classification of gesture. Morris, et al. (1979) is a study of a small selection of 'symbolic gestures' or emblems in which geographical variations in their usages and meanings have been studied in various places in Western Europe. It is a pioneering attempt to examine systematically the cultural variations found in this form of communication.

Efron, a student of Boas, approached the study of gesture from the perspective of cultural anthropology. He saw it as a cultural product, part of the shared system of communication codes of a culture. In this he proved to be a precursor of the tradition later developed by Birdwhistell who, in founding the field of kinesics (Birdwhistell, 1952), must be seen as the next most influential figure in the development of the study of gesture (See Kendon, 1972a for an assessment). Birdwhistell's program was to establish the study of bodily movement as a communicative code, analogous to language. He proposed to use the concepts and methods then employed in the analysis of languages to this purpose. He hoped to show that the kinesic code could be seen as an hierarchically organized system of kinemes, kinemorphs, and kinemorphic constructions. He thus resisted the idea that one could isolate a set of 'gestures' and treat them separately, as many authors have sought to do. Though his work has remained largely programmatic, it has nevertheless exerted considerable influence in serving to draw attention to the possibility of studying body motion communication codes. Recent students of gesture,

such as Saitz and Cervenka (1972) and Green (1968) have clearly been much inspired by Birdwhistell, even if they have not followed his method.

Interest in the phenomenon of gesture has lately begun to revive. Hewes (1973a, 1973b, 1977) has restated the view that language-like communication first emerged in the course of human evolution in gestural form, speech being a later development. His well-argued essays on this topic have provided an important impetus to the recent reopening of discussion on the question of language origins (Harnad, Steklis and Lancaster, 1976; Hockett, 1978). Interest in gesture has also revived as a consequence of the recent surge of studies in sign languages of the deaf, especially American Sign Language. The linguistic study of sign language was pioneered by Stokoe (1960), but it is only within the last five years or so that sign language studies have really developed (Klima and Bellugi, 1979; Wilbur, 1979; Siple, 1978; Lane and Grosjean, 1980; Stokoe, 1980a, 1980b). The climate now seems ripe for some major advances in our understanding of this mode of expression.

Efron, as we have already mentioned, distinguished between a number of different types of gesture. On the one hand, he distinguished gestures which are produced concurrently with speaking. These included ideographic gestures which are said to diagram the logical structure of what is being said; indexical gestures, in which something being referred to is pointed at; pictorial gestures, in which something that is being referred to is sketched out or in which an action is referred to by a pattern of movement; and batons, in which movements are made that beat time to the rhythm of the speech. On the other hand, he recognized symbolic gestures or emblems which can be produced in the absence of speech and stand for something in their own right and can function as an utterance. Ekman and Friesen offer a slightly revised version of this classification (and Ekman [1977] offers a further revision) but they, like Efron, retain the distinction between gestures which can serve independently of speech and those which only occur in close association with it. Those which occur in association with speech have been termed *illustrators* by Ekman and Friesen and under this term they subsume ideographs, pointers, pictorial gestures, and batons as subtypes of this general category. Gestures which can function independently of speech, which have a stable form, they term *emblems*.

The first four papers in Part III of this collection are concerned mainly with emblems as these would be defined by Ekman. The last two papers are concerned with well-circumscribed acts which have many of the functions of gesture but which do not really fit well with any of the categories that have so far been offered. We include them here, for not only are they useful studies in their own right but they also allow us to raise the question as to what is and what is not to count as a 'gesture'.

5.2. *Emblematic gestures*

The first article in this section is a review by Poyatos of Saitz and Cervenka's *Columbian Gestures* which serves a useful discussion not only of this book and of a similar book on Spanish gestures by Green but also of Efron's work. Poyatos is concerned with pointing out the various considerations of method that should guide anyone who sets out to construct an inventory of emblematic gestures. There are now a number of such inventories available. Besides those mentioned by Poyatos, lists of emblems have been published for Italy by di Jorio (1832), Munari (1963), and Cocciara (1932); for North African Arabic by Barakat (1973a); for France by Wylie (1977); for Western Kenya by Creider (1977), and for Iran by Sparhawk (1978), whose paper is reprinted here. Poyatos' comments on method would apply to most of these inventories. The ways in which these lists have been constructed are quite diverse and usually only sketchily referred to. Systematic comparative studies of emblematic gestures, which are much needed, will require a greater degree of systematicity in the elicitation of these gestures.

The paper by Johnson, Ekman, and Friesen, which follows the paper by Poyatos, offers a systematic procedure for the elicitation of emblems and for establishing an estimate of the degree to which knowledge of such gestures is shared within a given population. Inventories collected by this method from different societies could, perhaps, be usefully compared. So far, only Sparhawk has published results using this method and her findings are discussed in the paper reprinted next. It should be noted that, in addition to following the kind of systematic procedure which Ekman and his colleagues outline, it will be important to address in detail the question of how samples of informants are to be constructed. Poyatos' remarks on this and other problems are well worth taking into account.

Sparhawk's study offers an important advance in the study of emblematic gestures. In this paper she seeks to establish a description of Persian emblems in terms of the set of features which discriminate them from one another. She attempts to establish the repertoire of 'cheremes' which the Persian emblem collection makes use of in their formation. In following this approach, she is adopting a mode of analysis which is borrowed directly from the analysis of the 'cheremic' structure of American Sign Language pioneered by Stokoe (1960). This enables Sparhawk to make some specific comparisons between an emblem repertoire and the system of gestures in sign language. The differences that she reveals she suggests arise because American Sign Language relies far more upon 'digital' encoding principles than do emblems, which, she says, are largely 'iconic'. She suggests that American Sign Language is 'digital' because it is a 'main' communication system. She implies that a 'main' communication system is more likely to employ 'digital' encoding principles

because it has a larger repertoire of items that must be kept distinct from one another. This means that the features that serve to distinguish signs in a sign language tend to have contrastive significance only. They are not governed by the meaning of the sign. On the one hand, since emblems tend to occur separately from one another and not in complex sequences, and since there are fewer of them, they can still be formed according to 'iconic' principles. The features that characterize them in this case are retained because of their 'pictorial' value. In a sign language, on the other hand, a premium is placed upon making sure that the various signs in the repertoire are distinguishable from one another. Features which serve to do this will be retained, then, regardless of their 'pictorial' value. In this way a sign language, evolving out of a system of emblematic gestures, may be seen to change increasingly into a digital code.

The linguistic study of sign languages has grown markedly in recent years, as already mentioned. Despite the early writings on the subject of Tylor (1878), Mallery (1888) and Wundt (1973 [1921]), until the work of Stokoe (1960) it was widely supposed that sign languages were merely artificial devices for representing spoken language. It is now quite clear that a sign language such as American Sign Language follows its own principles of organization, largely independent of spoken language. Important sources for the modern study of sign language are Stokoe (1960, 1972, 1974a,b, 1980a, 1980b), Stokoe, Casterline, and Croneberg (1965), Friedman (1977), Siple (1978), Klima and Bellugi (1979), Wilbur (1979), and Grosjean and Lane (1980).

All of the work just cited has been concerned with American Sign Language, but other sign languages are now also being described including French (Sallagoity, 1975), French Canadian (Mayberry, 1978), Chinese (Yau, 1977), and Danish (Hansen 1975) and others. Besides such national sign languages, sign languages that have emerged locally have also been described. Washabaugh, et al. (1978) has reported on a sign language from Providence Island and Kendon has reported on a sign language from Papua New Guinea (Kendon, 1980a, in press a, b). Kuschel (1973) describes the remarkable case of a single deaf man on Rennell Island (British Solomans) who invented his own sign language so that he could communicate with those around him.

Many have recognized that when people are deprived of the capacity for speech they will resort to gesture and early students of sign language, such as Epée, Condilliac, Tylor, and Wundt, recognized that highly systematized gestural languages were the result. Recent work by Goldin-Meadow (Goldin-Meadow and Feldman, 1977) has not only revealed something of the processes by which such gestural communication emerges in children but also indicates that it will do so at a very early age.

There can be little doubt, then, that the propensity to use gesture as a means of linguistic communication is basic. The modern studies of sign language

show that when gestures are employed as the sole means of linguistic communication they quickly become organized into an autonomous system which has properties that are strictly analogous to those found in spoken languages, although differing in substance in important respects. Such gesture systems it seems clear, however, are further elaborations of gestural usage. They are not completely separate systems. Sparhawk by showing the applicability of a 'phonological' analysis of an emblem repertoire contributes to this point. Sparhawk also shows, however, that an analysis of Persian emblems in terms of a set of features that are fully contrastive throughout the entire system cannot be achieved. With respect to some features, these serve to contrast certain gestures with one another only when they are related to the meaning of the gesture. She finds, furthermore, that with regard to movement patterns, for which Stokoe, in his analysis of American Sign Language, established twenty-four distinct movement cheremes, for her analysis it was more useful to consider movement in terms of a limited number of parameters. This, she suggests, is due to the fact that emblems are often 'iconic' or 'analogic' and not encoded in a purely 'digital' fashion.

5.3.   The problem of 'iconicity'

Sparhawk's work on Persian emblems, it turns out, as well as recent work on American Sign Language by Friedman (1977), Mandel (1977), and DeMatteo (1977) and work by Washabaugh (1980) on Providence Island sign language, contributes to the recent revision in thinking that has developed with respect to the notion of 'iconicity'. This work has called into question the sharp distinction that is often proposed between 'arbitrary' or 'digital' encoding and 'iconic' or 'analogic' encoding. As we saw in the opening section of this essay, Ruesch, following the conceptualization then current in information theory, proposed two modes of symbolization in humans — analogic and digital — which came to be equated with 'nonverbal' and 'verbal' communication, respectively. Ekman and Friesen, in their discussion of coding suggest that we should consider three types of coding: 'intrinsic', 'iconic', and 'arbitrary'. It is now becoming clear, however, that sharp distinctions of this sort are not sustainable. As we shall see in a moment, indeed, the very notion of 'iconicity' as a principle of coding has been called into question.

It is usually said that a gesture is 'iconic' if it in some way resembles that to which it refers. Leaving aside, for the moment, the question of what might be a proper criterion of 'resemblance', as Washabaugh (1980) has lately pointed out, such a way of talking must, at best, be considered to be very loose. The referent of a gesture is not to a specific object or particular action. It is always a concept and concepts do not have concrete characteristics. A gesture in

which the index and middle fingers are extended forward away from the gesturer, with the hand held so that the palm faces toward the gesturer's median plane, the remaining fingers folded to the palm, occurs as an item in Sparhawk's list and it is said to refer to 'gun'. One is at once tempted to conclude that such an emblem is 'iconic' because it 'resembles' a gun. However, what the gesture refers to is the concept 'gun' and not to any particular object. Although it is true to say that there are certain features in common between the shape the hand here assumes and the shape of, say a revolver (the extended fingers 'modeling' [Mandel, 1977] the barrel of the revolver), there is no particular revolver which is serving as the object this gesture resembles. Furthermore, a revolver has many other features, and any one of these could have been selected as a basis for the gesture. The recognition that it was 'gun' that was intended by the gesture does not depend upon the gesture being 'like' any particular gun. It depends, rather, upon the fact that it serves to remind us of one of the features by which guns may be represented. However, that such a feature serves to denote 'gun' is purely a matter of convention. It does not come about through any connection of resemblance between gesture and referent, as the notion of 'icon' would have us believe.

When words fail us, or they cannot be used, we may resort to a variety of actions in an effort to produce one which will call forth the recipient's recognition of the concept we wish to convey. Gestural expression may, thus, employ highly variable forms. However, once agreement is reached about what was intended, the gestural form that was successful may become standardized. To the extent that it does so, it ceases to denote its referent in virtue of the recognition it induces in its recipient. It comes to denote its referent in virtue of a rule of agreement between user and recipient. (See Tervoort [1961] for some excellent examples of this process). Once this happens, the features which such gestures come to have are those featues that are needed to ensure that the gesture is recognized and distinct from others with which it might be confused. In form, thus, they are no longer 'motivated' by any relationship of resemblance and their apparent 'iconicity' is irrelevant to their semiotic functioning.

Because of the difficulties that have been shown to arise with the concept of iconicity (cf. Eco, 1976), Washabaugh has suggested that it be replaced with a concept of variability of expression or codedness (Washabaugh, 1980). Gestures that are highly coded, in this sense, are produced in the same way each time and they must possess specific features to be regarded as being correctly produced. Gestures with these properties can be described in terms of combinations of sets of contrasting features, as we have already seen. Gestures which show a low degree of coding, however, vary extensively in their form and serve to convey the concepts which they refer to in virtue of

reminding the recipient of the features shared by the concept in question, as just explained above.

In the light of these considerations, it will be seen that it is no longer appropriate to speak of 'iconic' coding, on the one hand, and 'arbitrary' coding, on the other. Rather, one must recognize a dimension of codedness. Comparing items at either end of this dimension will suggest a sharp contrast, of course. However, it is possible to show, as we have seen, that gestures may occupy intermediate positions along this dimension. It also appears that once a gesture becomes established, it quickly moves up the scale of codedness. One of the intriguing features of the study of gestural communication is that it allows one to observe this transformation toward codedness taking place. It seems to offer itself as a model for the processes by which such highly coded systems as spoken language, with their apparently highly arbitrary sets of symbols, could have come to be established (cf. Frishberg, 1975).

5.4. *Gestures, speech, and language*

A systematic survey of emblems in different cultures will make possible the investigation of cultural variations in gestural forms. It will be seen that if emblems are highly coded forms it is likely that there will be considerable variation from one community to another. Johnson, et al. offer a few comments on some of these issues but neither they, nor Sparhawk, provide a thoroughgoing comparative study. We must await the accumulation of more data before such a study can be begun. Interested readers are referred, however, to the excellent pioneering study of Morris, et al. (1979), already mentioned. This has received discussion in Kendon (in Press c).

The paper by Kirk and Burton, however, opens up the question of comparing emblems between different cultural groups in a particularly interesting way. They seek to compare how members of two East African groups, the Kikuyu and the Masai, classify a set of emblems and the set of verbal glosses that are given for these emblems. They argue that if it is found that gestures themselves and the verbal glosses attached to them are classified in the same way, this would be good evidence that the gestures and the verbal glosses are both treated as labels for semantic units. However, if the gestures are classified in terms of their physical form, this would suggest that they function as meaningful actions only in context and they cannot be considered to be the functional equivalents of verbal forms. Kirk and Burton employ the triads test as a means of getting informants to provide judgements of degrees of similarity between the items studied. Nine Kikuyu and nine Masai emblems were studied. The authors find that, for both groups, gestures and verbal glosses are classified in closely similar ways. They conclude, accordingly, that

gestures function in the same cognitive system as expressions for the same ideas as the verbal glosses. However, they find, in comparing the Kikuyu and the Masai groupings, that though the gestures and the verbal expressions are classified in the same way within each language group, each language group differs from the other in the organization of this classification. They conclude

> ... what appear to be the same emblems in terms of physical performance and elicited verbal labels are in fact distinct in the two language groups in terms of their cognitive organizations. That is, it appears here to be relatively inconsequential what the particular manifestation of the language: whether *written, spoken or emblematic — the cognitive organization seems to be consistent within languages and inconsistent across languages*. (p. 484)

Kirk and Burton's paper is the only one to my knowledge that explicitly addresses the question of the relationship between emblematic gestures and spoken expressions in this way. It shows clearly that more studies which do make this comparison are badly needed. The implication of Kirk and Burton's findings appears to be consonant with the view that, in our conceptualization of language we must consider, on the one hand, its cognitive organization, and, on the other, its various possible modes of manifestation. Until recently it has been widely held that speech is essential to any concept of language and that nonspeech forms of expression, such as writing and sign language, are but derivatives of spoken language structures. Studies of these nonspeech forms, however, now strongly suggest that they have their own properties. In the case of sign languages, as we have seen, it is quite clear that these need not be modeled on spoken language in any way. Teodorrson (1980) has recently proposed that we recognize that language be regarded as a system of several interrelated components of which the component concerned with its expression (the *delological* component, to use Teodorrson's term) must be considered to be as fundamental as all the others. From this point of view, then, gestural expression is but one of a number of alternate modalities of linguistic expression (delological forms) that a person has available. Speech is not to be regarded as a prior form of expression in all respects.

The question of the relationship between gesture and spoken language has also been approached through the study of gesturing that co-occurs with speech, or gesticulation, as we shall here term it. Efron provided the first attempt at a classification of the various ways in which such gesturing can relate to speech, as we have already mentioned. Detailed studies of the relationship between gesticulation and speech have been undertaken by Freedman and his colleagues (Freedman, 1972, 1977) by Baxter, Winters, and Hammer (1968), Sainsbury (Sainsbury 1955; Sainsbury and Wood 1977), among others. These studies are from the point of view of how gesticulation may be symptomatic

of cognitive styles, modes of thought, or psychiatric condition. Kendon (1972b, 1975a, 1980d) has offered analyses of the way in which speech con-current gesturing is organized in relation to the phrasal organization of speech and has argued that such gesturing must be considered a fundamental mode of utterance. McNeil (1979) and McNeil and Levy (in press) have developed this point of view further in studies which show that gesturing while speaking serves to express the underlying cognitive representations from which meaning-ful utterance units or 'syntagmata' (to use McNeil's term) are constructed.

From the point of view of how gesticulation functions in communication, curiously enough, little seems to be known. Graham and Argyle (1975) suggest an experimental approach to this question and they have shown, with respect to gestures that people make when they are describing the shapes of objects or figures, that such gestures can make a contribution to the understanding of such descriptions. Observational studies, such as those of Birdwhistell (1970), Slama-Cazacu (1976, 1977), and Sherzer (1973) have also demonstrated the communicative importance of speech-concurrent gestures.

Gestures have also been studied developmentally. The emergence of gesturing in the child is taken as an indication of the emergence of the child's capacity for symbolization. There have been studies of pointing (Werner and Kaplan, 1963; Anderson, 1972; Bates, et al., 1975; Scaife and Bruner, 1975; Murphy and Messer, 1977; and Lempers, 1979). Enactive and depictive ges-tures have been studied by Werner and Kaplan (1963), Kaplan (1968), Klapper and Birch (1969), Overton and Jackson (1973), and Jackson (1974). See also Michael and Willis (1968), Anderson (1972), Trevarthen (1977), and the papers in Lock (1978) by Clark, Lock, Nokony, Trevarthen and Hubley and Feldman, Goldin-Meadow, and Gleitman. Jancovic, Devoe, and Wiener (1975) report a study of the emergence of different types of speech associated ges-tures in children.

5.5.   *What is a gesture?*

The last two papers in this section differ from the others in that neither deals with actions that are usually classed as gestures. Yet they deal with specific actions which have clear communicational consequences.

Rosenfeld, et al. established a situation in which a 'teacher' conveyed feed-back to a 'student' on whether the student's responses in a word-association task were correct or not by way of foot pedals that purportedly sent signals to the 'student'. In fact these pedals were inoperative, but the 'student', who could see their 'teacher' by way of a video channel, nevertheless learned the word-associations rapidly. Evidently the 'teachers' were indicating to the 'students' by subtle facial actions and head movements whether they were

right or wrong. Rosenfeld, et al. set out to establish what these subtle cues were. They also went on to explore ways in which one might measure individual variation in sensitivity to such subtle cues. This paper is relevant to a number of issues. To begin with, it is a clear demonstration that people provide information to one another even when they are not aware of doing so. In itself this demonstrates the difficulty of employing a criterion of intentionality to establish what is and what is not a matter of communication (see the discussion in 3.2., above). Second, Rosenfeld, et al.'s study suggests the kind of methodology that one has to resort to when one is dealing with behavior that cannot be easily reenacted (because the people who produce the behavior were not aware of doing so). As a way of systematically establishing which aspects of action were serving to provide information in this situation, this study suggests a useful approach. Finally, Rosenfeld raises the question of sensitivity to the information provided by others. This is an issue that Rosenthal has explored in the development of his so-called PONS test (Rosenthal, 1979; Rosenthal, et al., 1979), however in this work the interest has been in developing a measure of general sensitivity to 'nonverbal communication' and exploring this as a personality trait. Rosenfeld, in contrast, is here seeking to establish the repertoire of subtle, but nevertheless conventionalized, acts that people produce and then to find ways of training people to recognize them.

Smith, et al., in their study of tongue-showing, are dealing with an action that is not recognized as a 'social' act at all. Whereas the facial movements Rosenfeld, et al. describe appear to be incipient versions of facial gestures such as smiling or turning the mouth down which are recognized by everyone as communicationally specialized, tongue-showing seems to belong to that class of action that is overlooked or regarded as 'autistic' or in any event is not recognized as a specialized communicational action. Smith, et al., by carefully observing the contexts in which tongue-showing occurs, suggest, nevertheless, that it does appear with some consistency. People show their tongues, according to Smith, et al., when they are engaged in a delicate operation of some sort and do not wish to be addressed socially. The authors conclude that the common thread of information that an observer could derive from observing tongue-showing is that the tongue-shower does not wish to be engaged in interaction. It is a mildly forestalling action, they suggest, which will serve to inhibit social approaches in others.

One general point that both of these papers raise is the question of where one is to draw the line in deciding what to count as a gesture. Rosenfeld includes in his analysis explicit gestures, such as headshake and headnod, but, as we have just noted, the subtler forms of action that were also highly informative to 'students', though provided by the 'teachers' out of awareness, nevertheless appear to be subdued versions of actions that would have been recognized as explicit gestures. Smith, et al.'s tongue-showings do not seem

to fall into the class of gesture, although the reason is perhaps not immediately clear.

One approach to this problem is to consider it from the point of view of how a fellow participant in interaction makes the distinction. Kendon (1978) has suggested that participants in interaction readily sort out the behavior of others into behavior that is deliberate, fully intentional, and other behavior which they do not regard in this light. As Goffman's discussion of the issue of 'given' versus 'given off' information reminds us (see above in section 2.0), this is a distinction which is consequential for participants. It is a distinction that they make on the basis of manifest features of the behavior they are able to observe. One might do well to attempt to set about systematically exploring what these features are. The category 'gesture' is, in fact, a 'folk' category. Perhaps our question should not be: how can we establish clear criteria by which observers agree as to what is and what is not a 'gesture'? Rather we should ask: what are the ways in which interactants, in practice, classify behavior in others? We should seek first to explore the distinctions that participants themselves employ, and then investigate the features upon which such distinctions are based.

6.0. Conclusions

In the foregoing we have sought to bring forward the various issues that are raised by the eighteen papers included in this volume and to show their relevance to current discussions within the field of what has come to be known, almost by default, as the study of 'nonverbal communication'. We have sketched in the way in which the concept of 'nonverbal communication' arose and have suggested some of its drawbacks. We have dealt with the question of how 'communication' is to be conceived in the context of interaction and the important issue of deliberateness. We have reviewed some of the problems attendant upon the description of behavior and we have identified many of the leading matters of investigation in the structure of interaction. Finally, we have dealt with 'gesture' and some of the issues of coding that it raises.

It is hoped that it will be clear that this field of study, however it may be labeled, is very active and is but on the threshold of exciting theoretical and empirical explorations.

7.0. References

In addition to the references cited in the text we include below references to several of the more useful bibliographies that have appeared in recent years.

Davis (1972) deals with studies of human movement from several different points of view, including many references to the performing arts. Each paper listed is concisely abstracted. It is soon to appear in a revised and expanded version. Hore and Paget (1975) also provides abstracts for the papers it lists. It draws mainly from the recent literature of experimental social psychology. Key (1977) is the most comprehensive of all, listing over 2000 references, including many that are out of the way or of historic interest. It is preceded by several short chapters intended to guide the reader through the material. Ciolek, Elzinga, and McHoul (1979) is a selective bibliography organized with a view to showing that the study of the organization of face-to-face interaction may be seen as a distinct field. A substantial body of literature is considered, including many references to 'conversation analysis' and to pertinent literature in sociolinguistics as well as work that deals with the role of visible behavior in interaction. It is well indexed and it is preceded by a survey of the field by Kendon. Hayes (1957) is an older compilation of papers concerned with gesture. It includes many references to anecdotal accounts and to work on gesture by folklorists.

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