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THE DEVELOPMENT OF AN OBSERVATION INSTRUMENT

DESIGNED TO CLASSIFY SPECIFIC NONVERBAL

COMMUNICATION TECHNIQUES EMPLOYED BY

CONDUCTORS OF MUSICAL ENSEMBLES

By

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ABSTRACT

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The purpose of this study was to develop an instrument designed to classify observed nonverbal communication behaviors made by conductors of musical ensembles. The basic outline of instrument development followed the seven-channel framework of nonverbal communication as detailed by Burgoon and Saine (1978): kinesics, physical appearance, vocalics, haptics, chronemics, proxemics, and artifact use.

The rehearsals of fifteen conductors representing a wide range of performance settings, were videotaped. The tapes were analyzed with repeated playings; detected behaviors were written on cards. After intense review, the cards were grouped according to similarity of observed behavior and compared with behavior lists which had been developed through an examination of existing instruments and selected conducting texts. A two-part instrument was developed from these behavior groupings. The first part was a multi-category, time-sampling system accounting for

non-static behaviors; the second part was a checklist system, accounting for static behaviors. Interviews were held with conductors and music educators to evaluate certain facets of the instrument. Duplications within the system were eliminated, after which time the Music Conductor Observation Instrument (MCOI) was in its final form.

Three graduate students at Michigan State University participated in determining the inter-observer reliability of the MCOI. With very little orientation into the use of the system, the observers coded a specially prepared tape, which employed stop-action but was otherwise unedited. Reliability estimates were determined by comparing the codings of each observer with those of the originator of the instrument through use of the Scott Formula; mean estimates of .69, .72, and .76 were achieved. A field trial was conducted to evaluate the instrument's practicality.

The study concluded that the MCOI was a viable means of classifying the nonverbal communication behaviors of conductors of musical ensembles. It was also concluded that observers familiar with the nature of conducting were able to use the system but that a more detailed training process than that used in the present study should be employed. The instrument's use was deemed practical. The MCOI was recommended for use in research investigating the nature of conductors' nonverbal communication.

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participated in the inter-observer reliability determination. Also, the author wishes to thank Mr. Frank DeMonico for his assistance with computer programming.

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CHAPTER I

BACKGROUND

Introduction

The most important goal of the conductor of the musical performance ensemble is to convey desired musical intent through a variety of means. It seems that:

> the primary function of a conductor is communication. Through various physical actions, he is required to indicate to the players all of the instructions contained in the score, plus all that may be implied by the score, or understood as the result of diligent study and research (Blackman, 1964, p. 27).

The success of a conductor seems somewhat dependent on his ability to communicate. "This instinctive faculty for immediately transmitting one's own musical impulses to the orchestra is the sign of true talent for conducting" (Walter, 1957, p. 112). The act of conducting has been analyzed in a great variety of ways ranging from experimental research to anecdotal studies which bear little scientific objectivity. There are few objective studies that have evaluated the conductor's effectiveness as a communicator, particularly on the nonverbal level. Also, little research has been performed relating to how a conductor communicates nonverbally.

Interaction analysis systems have been developed to collect and analyze verbal student-teacher communication and to describe the climate of the classroom; a number of these studies have been in the field of music:

> Interaction analysis is used to evaluate the responses of both the teacher and the student, to discover the kinds of communication between them, and to attempt to generalize the findings for applications in all classrooms (Scofield, 1977, pp. 1-2).

However to receive a total profile of the conductor's communication, an analysis of his verbal behavior is not enough; "communication between conductor and performer must go beyond the verbal to be most effective" (Morsch, 1977, p. 57). Nonverbal communication is essential to the conductor; in fact, during the performance, all communication must be nonverbal; Fennell states that:

> The communication of musical ideas is basic to conducting, and although there is no single way to achieve that communication, we must have a technique to translate musical thoughts and silences. For me, there is no doubt that the body--and I mean the whole body--can and must be a vital part of this translation process.
> When we exchange our instrument or voice for the conductor's podium, the body frequently becomes lost in the transfer. Actually the body is the conductor's instrument, not the people making the music in front of us (Fennell, 1978, p. 16).

Since nonverbal communication is very important to a conductor, it is also important to determine how a conductor uses nonverbal behaviors to communicate with the ensemble.

There are several different channels of nonverbal communication--the actual number varies from author to

author depending on his particular definition of nonverbal communication. For the purpose of this study, the category system of Burgoon and Saine (1978) will be employed since it best aligns with the definition of nonverbal communication that will be set forth; these seven communication channels are: kinesics, physical appearance, vocalics, haptics, proxemics, chronemics, and artifact use (p. 54). In a study of conductor communication, some channels are of greater relevance than others.

Kinesics, the study of body movements, is of particular importance in the analysis of conducting behaviors because of the great amount of physical activity that is observed. This area includes body movement, facial expressions, gestures, arm movements, and visual behaviors.

Physical appearance is the second nonverbal category. There are two unique qualities of this channel as a communication mode:

> The first limitation involves the notion of intent. While many features such as hair style may be intended as messages, others such as body type are not. Often a receiver will not attribute intent to such features, in which case they are merely information, not communication. However, as we have mentioned, many natural physical features may be regarded as intentional because of the availability of means to alter them. As a result, we cannot be sure whether a message--and if so, what message--is actually sent.
> The other limitation is that physical appearance cues are more or less frozen during any interaction. Whatever impact they have occurs primarily at the beginning of a conversation. Minor adjustments can be made, such as smoothing the hair, removing glasses, or unbuttoning a shirt; but how we look is basically a fixed element (Burgoon and Saine, 1978, p. 80).

The area of greatest importance in this code for the purpose of this study, is that of dress. In the performance setting, dress is almost always formal, established by tradition. However in rehearsal, there is wide variation among individual conductors. Some conductors have stated that the conductor's dress should be plain and dark in color in order to contrast with the white baton and not to detract from the various gestures that are used.

Vocalics is the study of stimuli produced by the human voice that affect the auditory sense, other than the words themselves. Because of the nonverbal nature of music itself, this channel is extremely important in this research. For example, virtually all demonstration is nonverbal. Body generated sounds such as clapping and tapping--not usually considered by nonverbal scholars--will be included in this study.

Haptics is the study of touch. Because of the distance between the conductor and the performers, and because of the territorial barriers that exist between them, touch is not a common type of behavior for conductors. In some instances, conductors do physically touch the performers in a rehearsal setting, perhaps by leaving the podium and patting a person on the head to reinforce a given activity.

Proxemics is the study of how man utilizes space, and is commonly divided into two smaller categories: territoriality and personal space. Territoriality is a very common research area outside of music. However, because of

the fact that a conductor's territory is so well defined by tradition in that he is to stand in front of the ensemble on a podium, a study of territorial usage by itself would prove to be of somewhat limited value. The study of personal space alone is also of somewhat limited value, again because of the conductor's fixed territory. There is some change in space utilization due to movement by the conductor on (and off) the podium. In fact, it might be of more value not to know how much and to what extent a given conductor moves, but if he moves at all. Therefore the study of conducting behavior in this realm seems to be a blend between proxemics and kinesics. This type of conducting behavior does seem distinctly different from ordinary body movement because of the rigid territoriality and the effects upon territoriality caused by this movement. The resultant outcome from the given behavior would seem to determine its label. Posture changes would also fall into this area. It therefore seems appropriate to study these types of behaviors as a blend between kinesics and proxemics.

The sixth nonverbal communication channel is chronemics, the study of how humans perceive and use time. Musical performances are kept within certain time limits to maximize attention, and to minimize boredom and player fatigue. In the rehearsal setting the use of time is important in allowing the music to be prepared in a satisfactory manner. The study of chronemics in the area of music performance and rehearsal would be very complex due to

the many diverse variables: difficulty of music, closeness of a given rehearsal to a performance, ability level of players, and setting. Research in this area would need to be very sophisticated and detailed to control the many variables.

The study of artifacts includes the investigation of how objects affect an individual's reaction to a given situation. Artifacts are evaluated on the basis of nine considerations:

1. size or volume,

2. arrangement of elements within an environment,

3. shape, texture, and materials used,

4. linear perspective,

5. lighting and shape,

6. color,

7. temperature,

8. noise and sound, and

9. sensory stimulation.

Certainly the most notable example of an artifact in the conducting situation is the baton. Others might include the podium, music stand, and the rehearsal hall itself.

Purpose

The purpose of this study is to develop an instrument designed to classify observed nonverbal behaviors made by conductors of musical ensembles.

Statement of the Problem

An examination of the relevant literature revealed only a limited study of nonverbal behavior and communication techniques used by conductors. It is the problem of this study to develop an observation instrument which will classify specific nonverbal behaviors and communication techniques of conductor of musical ensembles.

The subproblems of this study are:

1. to determine the inter-observer reliability of the instrument, and

2. to determine the practicality of the instrument through its use in a field trial.

Need for Study

Nonverbal communication is of tremendous importance for the conductor of musical ensembles. Messages, both musical and nonmusical, are constantly sent by the conductor to the performers. In fact, the whole purpose of conducting seems to be to convey meaning through nonverbal means, particularly in the final performance. In the rehearsal setting, nonverbal techniques are combined with verbal communication to convey intent.

In common applications outside music, most nonverbal communication techniques are sometimes not as deliberate as are the techniques utilized by the conductor, where nonverbal techniques may be deliberately planned and employed. One's success as a conductor is often measured by

his effectiveness in conveying intent through a conscious nonverbal communication methodology. Many conductors place great emphasis on nonverbal communication, stating that their effectiveness as a leader is determined by their mastery of these communication tools in combination with an intimate knowledge of the musical score:

> Perhaps we ought to pause for a moment to analyze this impression of leadership to which audiences seem to be so sensitive. Naturally a great deal of it is visual: an erect stance, secure and disciplined gestures, and an attitude of confidence. Contrariwise, if a conductor shows poor posture, wears a worried look, and obviously struggles to coordinate the various elements, even an unsophisticated audience will immediately feel that there is something amiss between him and the orchestra, and his capability to lead the musicians will be questioned. However, if this sounds like a bit of foolproof advice to all conductors--simply stand straight, make sweeping gestures and exude confidence, and everything will be fine--then I shall have to elaborate a little further. In most if not all cases the obviously confident attitude of a conductor is not the result of telling himself before the concert to look confident but of a technical mastery in the control of the orchestra that gives him every reason to be confident! If this could be faked, then conducting would be very easy indeed. On occasion there may be a charlatan who, fully aware of his technical inadequacy, will train himself in front of a mirror to look like the great magician that is likely to overwhelm the more naive members of the audience. Alas, his chances of success are slim! The fact that there is a large discrepancey between the leader's imperious gestures and the ragged, undisciplined playing of the orchestra will soom become apparent even to the uninitiated, and after a brief stretch he will emerge as the charlatan that he is (Fuchs, 1969, pp. 5-6).

These statements suggest two concepts that show a need for research. First is the uniqueness of music when compared to other academic areas, particularly in the area of nonverbal

communication research. Music's uniqueness is quite evident because of the deliberate intent of the conductor to portray both verbal and musical concepts through nonverbal communication. The second concept involves the training of new conductors, which is related to music education. If certain nonverbal techniques are discernable, then it is possible that these particular traits should be taught to student conductors. However many of the great conductors of the past stated that conducting could not be taught, that for the most part, these abilities were inborn:

> Sir John Barbirolli states that he will not accept students "because the certain something that makes musicians perform well for a conductor, even against their will, cannot be taught." Toscanini and Furtwangler are said to have expressed similar opinions, and I know of no one in the profession that would claim to have studied with either one of them (Fuchs, 1969, p. 9).

However, this line of reasoning does not seem valid in the light of recent research:

> . . .much recent research in the psychology of music has focused attention upon the importance of acquired rather than inherited skills, scientific research in the area of nonverbal communication might well be applied to analysis of conducting skills and the teaching of these skills (Ostling, 1976, p.30).

In addition, Roshong (1978) states that:

> ". . .conductors, teachers of conducting and students of conducting might gain better control and understanding of their conducting task by the systematic study of both the general nature of nonverbal communication and their own nonverbal behavior (p. 84).

It would seem particularly important to evaluate conductor behaviors using current nonverbal communication

philosophies. A need for research investigating the use of nonverbal communication techniques by conductors of musical ensembles clearly exists.

Assumptions

By definition, communication must involve the use of a code that has a shared meaning between the sender and the receiver. This definition could present a problem in determining which behaviors of a conductor should be considered communicative and which should not, since there is no complete, true, common language of conducting. Some elements of conducting do share rather universal meaning, such as beat patterns. Some behaviors, such as certain, individualistic gestures, do not hold universal meaning, but their significance may have been learned by the members of the ensemble over time, and therefore would hold shared meaning. The whole idea of what actions, whether they be gestures or not, have universal meaning in the world of musical conductors and performers is of great interest but truly clouds the issue of what behaviors should be viewed as communicative and which are perceived as informative. Behaviors that are intentionally made by the conductor, or those perceived to be intentional by the receiver are extremely important; intent can be used to determine what behaviors should be included in an instrument designed to study in an exploratory way the nonverbal communications of conductors. Those behaviors which cannot be clearly

determined to have shared meaning but are perceived to be intentional, will be viewed as communicative for the purposes of this study.

Often, a conductor's effectiveness as a communicator is determined by global assessments; certainly, a player does not view one facet of the conductor's actions alone. However for the purposes of this study, the conductor's behaviors will be separated and classified according to the seven-channel nonverbal system. The goal of this research is not to evaluate a conductor's effectiveness, but to begin to determine how the conductor communicates.

Limitations

To keep the study manageable, the following limitations have been observed:

1. Non-Western cultural norms and differences will not be considered.

2. Only those behaviors that can be detected without special alteration will be studied. This would eliminate those behaviors that would require slow motion or magnification to be seen.

3. It is recognized that a number of different tasks are associated with conducting, such as score study, rehearsal technique, and administrative responsibility, to name just a few. The analysis of these types of skills is beyond the scope of this study. It is also recognized that rehearsing

in itself is not necessarily conducting. Only those physical activities that fit within the seven-channel nonverbal system will be studied.

4. Evaluative judgements will not be made as to the effectiveness of particular conducting activities. This research will be of a descriptive nature solely.

5. Chronemics will be studied in only a limited way because of the subject's great complexity. Only the time of performance versus the time of nonperformance will be detailed.

6. In the physical appearance channel, such characteristics as somatype, hairstyle, and the like are beyond the scope of this study.

Definitions

Behavior

Any action or reaction performed by an organism.

Communication

". . .a dynamic process, that. . .involves creating shared meaning and that meaning results from sending and receiving messages via commonly understood codes" (Burgoon and Saine, 1978, p. 5); this process must involve intent or perceived intent particularly if there is an ambiguity in meaning.

Nonverbal Communication

". . .those attributes or actions of humans, other than

the use of words themselves, which have socially shared meaning, are intentionally sent or interpreted as intentional, are consciously sent or received, and have the potential for feedback from the receiver" (Burgoon and Saine, 1978, pp. 9-10).

Verbal Behavior

The form of talk by either teachers or students that occurs within the rehearsal setting; it is that behavior which could be recorded directly on a typescript, and is an example of a communication code.

Category

A subdivision of a larger type of verbal or nonverbal behavior.

Sub-category

A further subdivision of a category.

Performing Group

Collections of performers participating in bands, orchestras, choirs, or other ensembles for the purpose of studying music and/or preparing it for performance. This refers to groups larger than five players; the group is led by a conductor.

Conductor

The leader and teacher of a musical performing ensemble whose primary function is to communicate and convey musical intent to the players through various means.

Performance

The act of the student being engaged in producing music

by singing, playing an instrument, or by producing sounds in some other organized manner, such as clapping.

Kinesics

All forms of body movement, except touch, that may act as nonverbal communication.

Vocalics

All stimuli produced by the human voice that affect the auditory sense other than the words themselves.

Haptics

The study of touch.

Proxemics

The study of how humans perceive and use space.

Chronemics

The study of how humans perceive and use time.

Research Procedures

The basic procedure that will be taken to develop this observation instrument will follow, in large part, the procedure used by Daellenbach (1970b). The rehearsals of fifteen conductors representing a wide range of performance settings will be videotaped. The tapes will be analyzed through repeated playings; detected behaviors will be written on index cards. After intense review, the cards will be grouped according to similarity of observed behavior and will be compared with behavior lists developed through an examination of existing instruments and selected

conducting texts. A two-part instrument will be developed from these behavior groupings. The first part will be a multi-category, time-sampling system accounting for non-static behaviors; the second part will be a checklist system, accounting for static behaviors. Interviews will be held with conductors and music educators to evaluate certain facets of the instrument. Duplications within the system will be eliminated, after which time the Music Conductor Observation Instrument (MCOI) will be in its final form.

To determine the inter-observer reliability of the instrument, three observers will be trained in the use of the system, after which time they will code a specially prepared tape. Reliability estimates will be determined by comparing the codings of each observer with those of the originator of the instrument through use of the Scott Formula. A field trial will be conducted to evaluate the practicality of the instrument.

Organization of the Report

In Chapter II a review of the research literature will be presented. Chapter III will outline the basic procedures of instrument development, the determination of inter-observer reliability, and the performance of the field trial. The results of the study will be given in Chapter IV. Chapter V will consist of a summary of the study, presentation of conclusions, and recommendations for further research.

CHAPTER II

REVIEW OF THE LITERATURE

Overview

A review of the research literature will be presented in this chapter. The following topics will be discussed: description of early nonverbal definitions and systems (with emphasis on the seven nonverbal channels presented by Burgoon and Saine (1978)), studies related to the observation of teaching, observation of general music teachers, studies related to group rehearsals in music, and studies related to the observation of conducting.

Description of Early Nonverbal Definitions and Systems

A concise review of the literature is made difficult due to the developing nature of nonverbal communication definition and theory:

> The most obvious characteristic of the literature about nonverbal communication is the lack of a common approach. Not only has this area been under investigation by scholars representing variations in approach and emphasis, but nonverbal as a concept has been subject to variation in definition (Heger, 1969, pp. 14-15).

During the 1970's, a great variety of approaches arose, ranging from popular anecdotal views to highly scientific and objective theories. In the academic field there is also

a wide range of writings on nonverbal communication; Martha Davis (1972) alone annotated some 931 items in this area.

Much of the literature in this area is in the form of textbooks, including Argyle's Social Interaction (1969), which presents one of the earliest reviews of the nonverbal literature. Other authors writing textbooks on the subject of nonverbal communication include: Knapp (1972), Mehrabian (1971, 1972), Leathers (1976), Harper, Wiens, and Matarazzo (1978), and Burgoon and Saine (1978).

A quantity of publication also has been available in the popular press, both in books and magazines. Examples include Fast (1970) and Nierenberg and Calero (1971). Most of these writings offer little toward the scientific study of the subject.

Another facet of this literature is found in the journals and periodicals of various social sciences, notably communication, which attempt to define or explain certain theoretical approaches. Harrison and Knapp (1972) cite some of these sources and review the literature of the field in general. A similar approach is taken by Dunning (1971).

The scientific study of nonverbal communication dates back to the mid-1800's with the publication of Darwin's The Expression of Emotions in Man and Animals. However, evidence exists that Darwin drew on earlier work by Sir Charles Bell (Harrison and Knapp, 1972, p. 399). According to Dunning (1971), the early research of French neurologist G. B. Duchenne explored the reactions of the face to

electrical stimulation and studied movements of the entire muscular system as early as 1867 (pp. 250-251). The face received much attention in this very early research. Harrison and Knapp (1972) cite that the modern study of nonverbal communication started around the time of World War II, with increased growth since that time. The modern era has been typified by many different approaches, each headed by a particular person or group of persons; as Harrison and Knapp (1972) state:

> A number of intellectual tributaries have fed into the current stream of research. Most obvious are the anthropological and the psychological. The anthropological flow, in turn has at least two tributaries. One is epitomized by the pre-war work of David Efron. The other tradition is more heavily influenced by linguistic methodology and is relected in the work of Ray L. Birdwhistell on "kinesics", and in the work of Edward T. Hall on "proxemics".
> Similarly, the psychological tradition has had two major branches. One, starting with clinical concerns, is typified by Jurgen Ruesch. The other has moved rapidly to experimental investigations, and is typified by the work of Paul Ekman and his colleagues. Recently, sociologists, such as Erving Goffman, have written about facets of nonverbal communication in groups. And the communication implications of nonverbal behavior have drawn steadily increasing interest from social psychologists, e.g. Albert Mehrabian and Morton Wiener. Finally, an ancient tributary has re-joined the contemporary stream; ethnologists have moved from the study of animal behavior to its implications for human communication. Examples of this melding can be found in collections put together by Thomas Seboek and by Robert Hinde.
> These major traditons have been augmented by research, frequently of a more applied nature, in speech communication, journalism, audio-visual communication, cinema, packaging, theater, education, architecture, design, etc. (p. 340).

Harrison, Cohen, Crouch, Genova, and Steinberg (1972)

state that an explosion of new nonverbal literature occurred in the 1970's. They also state that little could be found on the subject in book form before that time (p. 260). This source also provides a review of the general nonverbal literature.

Recently, nonverbal communication has been divided into several distinct categories based upon the particular human sense that is stimulated by the message or employed in sending the message, the nature of the message, or upon other divisions. As many different theoretical approaches to the field have been noted, many different divisions of sensory categories are also noted, some of which already have been detailed. For example, Duncan (1969) identifies six areas: body movement or kinesic behavior, paralanguage, proxemics, olfaction, skin sensitivity to temperature and touch, and use of artifacts. Barker and Collins (1970) mention eighteen areas: animal and insect; culture; environment; gesture, facial expression, body movement, and kinesic; human behavior; interaction patterns; learning; machine; media; mental processes, perception, imagination, and creativity; music; paralinguistics; personal grooming and apparel; physiological; pictures; space; tactile and cutaneous; and time. Eisenberg and Smith (1971) use three major divisions: paralanguage, kinesics, and proxemics. Knapp (1972) employs seven divisions: body motion or kinesic behavior, physical characteristics, touching behavior, paralanguage, proxemics, artifacts, and environmental

factors. Leathers (1976) notes six systems: kinesic, proxemic, artifacts, vocalic, tactile and olfactory, and telepathic. For the purposes of this research, a seven-category framework, as detailed by Burgoon and Saine (1978) will be employed, since it best agrees with the definition of nonverbal communication that has been set forth. These seven categories are: kinesics, physical appearance, vocalics, haptics, proxemics, chronemics, and artifacts; these seven categories will be the basis for the remaining discussion of the general nonverbal literature.

Kinesics

> Kinesics is articulation of the body, or movements resulting from muscular and skeletal shift. This included all actions, physical, automatic reflexes, posture, facial expressions, gestures, and other body movements (Key, 1976, p. 10).

Ray Birdwhistell was one of the earliest scholars in this field:

> Ray L. Birdwhistell's 1952 article was the first published use of the term kinesics. Others who made important contributions to the development of ideas in those days were Henry Lee Smith, Jr., Edward T. Hall, Jr., Gregory Bateson, Norman A. McQuown, Robert E. Pittenger (Key, 1976, pp. 10-11).

Burgoon and Saine (1978) state that "people have gone about classifying kinesic cues in two basic ways that reflect. . .two linguistic approaches. . ."(p. 56). The first is the structure-centered approach, in which very small elements of behavior are isolated and notated using a specially designed system. This approach is best expressed

by the work of Birdwhistell (1952, 1970). He sought to identify discrete, universally used behaviors that would serve as building blocks of communication. Birdwhistell recognized eight regions of meaningful activity in the area of kinesics: total head; face; neck; trunk and shoulders; shoulders, arms, and wrists; hands and fingers; hips, upper legs, lower legs, and ankles; and feet. There is a tremendous capacity for different cues; Birdwhistell estimated that the face alone is capable of producing 250,000 expressions. Birdwhistell's recording system used a great many complex pictographs and figures. According to Dunning (1971), Birdwhistell's system may have been the first tool developed for decoding messages of the body (p. 253).

The second approach, meaning-centered, classifies behaviors according to the function that they perform. Paul Ekman and Wallace Friesen (1969) are the primary originators of this approach. Five levels of behaviors are noted. Emblems are intentional behaviors that take the place of a verbal behavior; the "A-OK" sign is an example. The second category, illustrators, accompany and further picture the verbal, such as extending the hands to demonstate the length of a fish. The third classification, the adapter, is used to satisfy a physical need; an example would be adjusting one's glasses. The fourth category is the affect display which shows emotion; the face is very important in this area. The final classification, regulators, include those

kinesic behaviors that help to control interaction; head nods might be an example.

Some authors in kinesics have focused upon the specific purpose each part of the body might serve in communicating messages. For example, Burgoon and Saine (1978) state that:

> So far, researchers have concluded that the body trunk carries information about the intensity of an emotion, while the face reveals which emotion is being felt. There seems to be some evidence that, by looking at body position and movement alone, we are able to reach some consensus as to the emotion being sent. But that is not how we decode emotions in our everyday interactions. We look at the face and listen to the voice to identify the emotions; the body is only an indicator of degree and a secondary source of confirmation, a cross check, on the face and voice.
> Degree of muscle tension, body posture, rate of body movement, and overall coordination of body actions all help us judge the intensity of emotions (p. 203).

As stated earlier, the face holds tremendous potential as a communication outlet, so much so that a large body of research exists which relates solely to facial expression. According to Harper, Wiens, and Matarazzo (1978), "in many respects the face may be the single most important body area and 'channel' of nonverbal communication" (p. 77). From the structuralist viewpoint, Birdwhistell (1970) isolated thirty-two distinct movements (kinemes) in the face and head area.

Ekman has been on the forefront of research on the face, ". . .no one has elevated research in this area to its present state of scientific respectability as much as Ekman" (Harper, Wiens, and Matarazzo, 1978, p. 79). In their

review of the nonverbal communication literature, Harrison, Cohen, Crouch, Genova, and Steinberg (1972) state that:

> The Ekman, Friesen, and Ellsworth volume, Emotion in the Human Face. . .might well have been titled: "All you ever wanted to know about facial research; and never would have thought to ask." It is a thorough, critical review of a century of research on the face and emotion. As such, it is must reading for any modern researcher who would study facial expressions. And it is an instructive reference book for any scholar with a general interest in nonverbal communication (pp. 467-468).

In describing the dimension approach of facial study, Ekman, Friesen, and Ellsworth identified three dimensions that are used most often in studies of facial emotions: pleasant-unpleasant, attentional activity, and intensity-control. However among different authors, the actual number of dimensions varies. Dittman (1972) identified seventeen categories for an affect checklist from a review of the literature. Sixteen judges rated each of twenty-five three-second movie segments using the checklist. A factor analysis yielded four dimensions: pleasant-unpleasant, activation, trust-mistrust, and a fourth, unidentifiable dimension.

Another type of facial expression research is the category approach, which is summarized by Ekman, Friesen, and Ellsworth (1972):

> Some theorists have postulated a set of basic emotion categories, or primary affects. Each of these categories includes a set of words denoting related emotions which may differ in intensity, degree of control, or, in minor ways, in denotative meaning. While the principal of inclusion is not always explained, the words

within a category are held to be a lot more
similar than the words across categories.
Presumably different facial behaviors are
associated with each of these emotion categories,
although no theorist has ever fully explicated the
exact nature of such differences in facial
components (p. 57).

To date, almost all of the research on facial
expression has been directed towards demonstrating
that facial expressions do reliably communicate
emotional states. Having demonstrated this,
investigators have begun to ask whether specific
components of facial expression are differentially
important in communicating emotional states
(Harper, Wiens, and Matarazzo, 1978, p. 92).

The Facial Affect Scoring Technique (FAST), developed by
Ekman, Friesen, and Tomkins (1971), is probably the most
important observation system of its type. This technique
divides the face into three regions: the brows and
forehead; the eyes, eyelids, and bridge of nose; and the
cheeks, nose, mouth, chin, and jaw. The FAST requires that
observers view separate areas of the face for facial
movements, which are compared to still-photographic
examples. The photographic items employed in FAST were
selected "to define each of the movements within each area
of the face, which, theoretically, distinguish among six e-
motions; happiness, sadness, surprise, fear, anger, and
disgust" (Ekman, Friesen, and Ellsworth, 1972, p. 114).
Eight photographs were provided for the brows/forehead area,
seventeen for the eye/lids area, and forty-five for the low-
er face area.

A large body of research also has been conducted in kinesics specifically relating to visual behavior. The most significant of these studies relate to the impact and importance of gaze. There is a great variety of definition in this area, which presents problems in a review of the literature. Harper, Weins, and Matarazzo (1978) summarize part of this approach to research:

> When one reads through the literature on visual behavior, it is thus important to know which of the various visual phenomena are really being described. As there is yet no established terminology for visual behavior, this is often possible only through consideration of the methodology of the particular study. In most experiments, the visual behavior of one of the interactants is controlled, that is, his gaze is either fixed on the other's eyes or face throughout the entire period of observation or for specified intervals (p. 173).

They also note that a difference exists between eye-gazing and face-gazing, and that the terms are not used consistently in the literature.

Table 1 shows the definitions of visual behaviors as given by Mario von Cranach (1971). It is an example of this type of classification system.

Harper, Wiens, and Matarazzo (1978) note that the reliability and validity of the measurement device are important considerations (pp. 174-180). They found that the highest agreement between observations was obtained when slow motion/freeze-frame techniques were employed in a

Table 1

Definitions/Concepts of Visual Behavior

Term	Definition
Onesided look	The sender looks at the face of the receiver mainly at the region around the eyes.
Mutual look	Both partners look at each other's faces mainly at the region around the eyes, thus acting simultaneously as sender and receiver
Eye-Contact	Both partners look into the other's eyes, most probably into one eye only, and both partners are aware of the mutual look.
Gaze-Avoidance	A person avoids looking at the partner of the interaction and especially so if the latter looks at him, so that eye-contact does not occur. In this definition, it is only by the intention of avoidence that his his behavior is distinguished from the following:
Omission of gaze	One partner does not look at the other one without evidently avoiding to do so.

The following consitute aspects of looking behavior

Gaze Direction (line of regard)	The direction of the gaze of its receiver is deduced from the position of the eyes in the face of the sender.
Eye Movement (gaze movement)	The change of eye position in changing gaze direction.
Duration of glance, eye-contact, or mutual look	The periods of time that a certain gaze direction is maintained, especially the period during which the sender looks at the receiver.

(Cranach, 1971, p.220)

laboratory situation. They also note a variety of techniques in real-time observations.

The differential scale is often used in nonverbal research, especially in kinesics. Leathers (1976) uses a seven-point scale with bipolar adjectives with accompanying photographs, for feedback response with emphasis toward gestures, body movement/posture, and facial expression (pp. 216-219).

Physical Appearance

Physical appearance is the second classification of the Burgoon/Saine nonverbal communication modes. It includes natural body features, dress, accessories, and cosmetics. Observation systems in this area seem to be less developed than in kinesics. Leathers (1976) states that:

> Ernst Kretschmer, a professor of psychiatry and neurology, probably made the first comprehensive effort to record differences in bodily appearance. In 1925 Kretschmer published the first version of Physique and Character: An Investigation of the Nature of Constitution and of the Theory of Temperament. Kretschmer concluded that individuals who share morphological similarities may be classified into three majorgroups--asthenic (skinny body, and narrow body), athletic (muscular body), and pyknic (fat body) (p. 88).

Sheldon (1954) established the empirical practice of classifying people as to somatype. His system also groups body types into three classifications--ectomorph, mesomorph, and endomorph; it is the most commonly used general technique in this line of research. More objective results are attained through the employment of more sophisticated

techniques such as the use of skinfold calipers to measure subcutaneous fat, or the use of a profilometer to measure facial features. Another technique used to evaluate body features is the self-evaluation questionnaire. An example is the scale developed by Leathers (1976) in which the individual rates the features of his body on a seven-point scale with bipolar adjectives (pp. 94-95).

Observation of the other facets of physical appearance is similar to the systems of the "body features" area; differential scales are employed commonly. One such example is the research of Gibbins (1969). He asked fifty females, ages fifteen to sixteen, to judge pictures of clothing cut from popular fashion magazines using a differential scale. He found three classes of communicated meaning: fashionability, socialization, and formality. Much of the research in these areas does not use structured observation systems; verbal descriptions, and global evaluations are more commonly employed.

Vocalics

The third classification of nonverbal communication is vocalics; some authors refer to this as paralanguage:

> Vocalics includes all stimuli produced by the human voice (other than words themselves) that effect the auditory sense. Everything from sniffs and sneezes to rapid speech, nasality, and singing fall into this category. So do silences and pauses during speech. Many scholars refer to this class of behaviors as paralanguage because it is what supports language (para meaning alongside) (Burgoon and Saine, 1978, pp. 80-81).

An early scholar associated with vocalics is George Trager:

> The term paralanguage was first used in publication by Wilmers. The 1958 article by George Trager ("Paralanguage: A First Approximation," Studies in Linguistics 13, pp. 1-12) is best known for introducing the term to linguistics. Trager states that the term was suggested by A. A. Hill. . .Trager tells something of the discussions and seminars from 1952 on, during which features of paralanguage and kinesics were focused upon (Key, 1976, p. 10).

As in kinesics, this area can be divided into two realms; the first would deal with the characteristics of the voice itself, such as pitch, range, tempo, timbre, diction, and pitch control; the second area would concern itself with the function of the nonverbal sound:

> According to Harper, Wiens, and Matarazzo (1978), the bulk of research on paralanguage has consisted of attempts to identify personality correlates or to relate them to emotional or attitudinal states. Efforts to identify personality correlates have included ratings of these vocal characteristics in terms of inferred personality dimensions and comparisons between paralinguistic behaviors of different personality types. In general, studies relating emotion and attitudes to paralinguistic variables have yielded stronger or more consistent results, which should not be surprising given the more "direct" physical-anatomical relationship between speech and emotion.
> Speech disturbances have been another focus of study by researchers. In particular, disturbances of speech not including "ah" sounds (i.e., sentence corrections, repetitions, stutters, tongue slips, and the like) appear to be a reasonably sensitive indicator of anxiety. Speech can also be characterized by its temporal aspects, which are strongly influenced by the speech behavior of the other conversational partner and the social context. Verbal productivity (e.g., rate of speech) has, in addition, been related to anxiety, but in a relatively complex and not fully understood fashion that involves consideration of both momentary situational and dispositional or

trait anxiety. In addition, it has been studied in relation to mood states (e.g., depression) and self-disclosure in psychotherapy. A relatively neglected area has been the study of silence, particularly those "interactive silences" that are longer than the typical hesitation and pauses that are related to anxiety and/or speech encoding processes. Finally, we have ended this review with consideration of a new focus to research; the role that para-linguistic behaviors play in the regulation of conversation, especially turn-taking (pp. vii-ix).

Haptics

Haptics, the study of touch, includes both the external and internal sensations that are experienced. According to Harper, Wiens, and Matarazzo (1978, p. 295), Lawrence Frank (1966) wrote one of the earliest papers on tactile communication. Kauffman (1971) outlined a structuralist approach to touch; her goal was to identify the basic constructs of touch, similar to the linguistic-kinesic analogy of Birdwhistell. Jourard (1966) was one of the first psychologists to consider touching in a truly systematic way. Jourard administered a body-accessibility questionnaire as part of his research. Much of the research in haptics seems to be related to touch norms. Jourard also commented on the general lack of research in haptics. Some authors consider touch to be a proxemic behavior. Burgoon and Saine note that there is a difficulty in accurately interpreting touch messages.

Proxemics

Proxemics is the study of how man utilizes space. It is commonly divided into two smaller categories: territoriality, which refers to claiming and defending a geographic territory as one's own, which is linked to anthropology; and personal space, which:

> chiefly deals with the meaning of space to the individual in terms of the effects of crowding, territoriality, architectural design, and so on, and is only peripherally concerned with inter-cultural variations. Controlled laboratory and field studies are used, in contrast to proxemics, which mainly relies on observational studies. The difference between proxemic and personal space research is analogous to that between the structural and experimental approaches (Weitz, 1974, p. 199)

Edward Hall (1963, 1966), an anthropologist, first investigated this phenomenon in a systematic way; the term, proxemics, was introduced by Hall, and as seen in the statement by Weitz, is used in different ways, even to this time. One of Hall's most important contributions was his description of four distance zones, which were based on his observation of middle-class Americans: intimate, personal, social, and public. Robert Sommer (1959, 1969) introduced the term personal distance, and pioneered a body of research relative to seating arrangements, seating distances, and invasions of personal space.

Aside from questionnaires and global evaluations, there are two common research techniques in proxemic research; these two techniques are used especially in the research of

personal space. The first is actual, physical measurements; the second technique is the use of paper-and-pencil instruments. An example is the Comfortable Interpersonal Distance Scale (CIDS) of Duke and Nowicki (1972). This scale consists of a plane with eight radians emanating from a common point. Subjects are to imagine themselves at the center of a room and indicate where they would allow an imaginary person to approach. Harper, Wiens, and Matarazzo (1978) note that most measurement techniques of personal space have been subject to conscious awareness and control of the subject, which would affect validity and that presently, ". . .no single measure of personal space is totally adequate" (p.254).

Chronemics

The sixth classification of nonverbal communication is chronemics:

> Perhaps more than anyone else, Edward Hall is responsible for calling our attention to the communicative power of time. Chronemics is the study of how we perceive, structure, and react to time and of the messages we interpret from such usage (Burgoon and Saine, 1978, p.99).

Divisions of this area include biological time (i.e., bio-rhythm), cultural time orientations, punctuality, and monochronism. Burgoon and Saine (1978) state that "perhaps because time is such a part of us, it has received very little systematic study other than from an anthropological viewpoint" (p. 104).

Artifacts

The study of artifacts includes the investigation of how objects affect an individual's reaction to a given situation. Research of this nature typically includes studies of the environment such as office colors and decorating style. Artifacts are evaluated on the basis of nine considerations:

1. size or volume,

2. arrangement of elements within an environment,

3. shape, texture, and materials used,

4. linear perspective,

5. lighting and shape,

6. color,

7. temperature,

8. noise and sound, and

9. sensory stimulation.

Studies Related to the Observation of Teaching

Numerous attempts have been made to obtain objective measurements of teacher behaviors in the classroom. However, a great many of these systems have concentrated solely on verbal behaviors.

One of the earliest attempts of objective research in the classroom, and an example of a typical approach taken in the reserach of this era, was performed by Horn in 1914, which is reported in Medley and Mitzel (1963, p. 254). It investigated student participation distribution.

A major focus in the study of teaching is the use of interaction analysis to study classroom climate. According to Medley and Mitzel (1963), "this line of development seems to have begun with the work of Dorothy S. Thomas and her associates. . ." in 1929 (p. 263).

Several of the very early studies of teacher behavior investigated the use of nonverbal behaviors in the classroom in a limited way. In a 1928 study, Puckett used a number of pictographs in a system designed for supervisory use. The categories are a mixture of nonverbal behaviors with and without a given function or verbal association. This system, which is reported also in Medley and Mitzel (1963), is shown in Table 2.

Barr's research (1929) represents "the first study of any magnitude designed to fulfill the purpose. . .[of] the

Table 2

Puckett's Observation System

Symbol	Definition
.	Pupil raised hand
⊙	Pupil raised hand and was called on by teacher
⊙	Pupil raised hand, was called on by teacher, and made a single word response
⊙-	Pupil raised hand, was called on by teacher, and made a fair response
⊙	Pupil raised hand, was called on by teacher, and made a good response
-⊙	Pupil raised hand, was called on by teacher, and made a very good response
□	Pupil called on when he did not have hand raised
□	Pupil called on when he did not have hand raised; made a single word response
□-	Pupil called on when he did not have hand raised; made a fair response
□	Pupil called on when he did not have hand raised; made a good response
-□	Pupil called on when he did not have hand raised; made a very good response
□□	Pupil called on when he did not have hand raised; made no response
>	Pupil asked a question
|	Pupil spoke without being addressed by teacher

(Puckett, 1928, p. 210)

identification of behavior patterns discriminating effective from ineffective teachers" (Medley and Mitzel, 1963, p.258); this early research investigated some nonverbal behaviors as well. Barr (1930) lists personal appearance, posture, voice (pleasing) among many other items on a rating scale of teachers.

Wrightstone (1934) developed an observation system used to investigate classroom behaviors. Although it emphasized verbal behaviors, some nonverbal behaviors were noted in category definitions, such as pointing to a student (pp. 455-456).

In the 1930's H. H. Anderson performed a body of research which led directly to the beginnings of true interaction analysis. He identified two major teacher behaviors: integrative and dominative.

Withall (1949, 1951) attempted to assess the social-emotional climate in a learning situation based on teacher behavior through the categorization of teacher statements. Typescripts were made and analyzed to develop the instrument. It was assumed that teacher verbal behavior adequately represented total behavior (Withall, 1949, p. 349). The Withall Climate Index has been used extensively and has served as the basis for other systems; Medley and Mitzel(1963, p. 279) have reported that their Observation Schedule and Activity Record (OScAR) evolved in part from Withall's work.

Bales (1950) reported significant work with small

groups with the intent of developing a body of theory relevant to analysis of small groups as well as full-scale social systems. Instrument development began in 1946 which led to eleven or twelve revisions of the twelve category system. Galloway (1962) states that Bales was "one of the first researchers to develop an observational scheme for categorizing the flow of communication that occurs in small groups. . ."(p.52). Lewis, Newell, and Withall (1961) modified the Bales analysis system and the Withall index. Of the fourteen categories in this new system, four were used to determine the teacher's nonverbal messages:

1. listens,

2. shows positive feelings,

3. inhibits communication, and

4. shows negative feelings.

The culmination of much of the previous research cited is represented in the work of Ned A. Flanders (1967, 1970). He first developed his system after working with Withall and Thelen at the University of Wisconsin. A one-year study tour of New Zealand helped him to finalize his system (Cheffers, 1973, p. 9). The ten-category system (FIAC) has been the most widely used and adapted of all the interaction analysis systems. The analysis of verbal behaviors in the classroom, of course, continues beyond Flanders' work, but his research seems to represent a bench mark for this type of research. Only minor references are made toward nonverbal behaviors.

One of the earliest studies reported that relates specifically to nonverbal behaviors was by Morsh (1956). He attempted to develop an observation system that could be used by observers without previous observational experience. The following problems were identified:

1. to determine which behaviors of instructors and their students can be reliably and systematically observed;

2. to determine whether or not instructor behaviors that can be observed tend to be typical and consistent; and

3. to determine the relationship between elements of an instructor's or student's behavior and the amount students learn or the manner in which students are graded by their supervisors.

By means of preliminary observations, a tentative "Instructor Observation Check List" consisting of 160 items was developed. After preliminary tryouts of these observation items, about forty-five were retained for further study; these behavioral items are shown in Table 3.

Although intended for use as a device for study of classroom climate and verbal learning, the OScAR of Medley and Mitzel (1958) makes some mention of nonverbal actions. The following is a description of the procedure for:

Table 3

Items Used by Morsh in Observing Classes
in a Service School

Instructor Verbal Behavior	Instructor Non-Verbal Behavior	Student Behavior
Gives aims	Stands:	Raises hand
Defines terms	a.Behind desk	Talks
Explains:	b.At board	Answers
a.Fact	Moves:	a.Recognized
b.Training aid	a.Center, rear	Asks question:
Asks:	b.Other	a.Recognized
a.Designates student,	Leans on desk	Looks around
asks question	Smiles	Doodles
b.Asks question,	Demonstrates:	Slumps
designates student	a.Training aid	Yawns,
c.Class question	b.Gestures	stretches
d.For question	c.At board	Class answers
Answers:	Looks at notes,	Sleeps or
a.Own question	course outline	dozes
b.Student question	Uses board:	Ignores
Repeats:	a.Key term	instructor
a.Student answer	b.Diagram	Smiles
b.Key word	c.Erases	
c.Pet word		
Gives example		
Gives directions		
Calls student:		
a.By name		
b.Other		
Threatens, warns		

(Adapted from Morsh, 1956, from Medley and Mitzel, 1963, p.262)

> observing and recording expressive behaviors of a
> teacher for this technique: . . .[the observer]
> watches for changes of expression on the teacher's
> face, such as smiles, frowns, and scowls, and for
> expressive gestures such as nods, threatening
> glances, and body movements. Each time he
> observes a look or gesture which he judges to
> express approval of or affection for a pupil, the
> observer makes a tally. . . . Each time he
> observes a look or gesture which he judges to be
> hostile or reproving he makes a tally. . .
> (Medley and Mitzel, 1958, p. 88).

Hughes (1962) used seven categories drawn from class-room observations in a study of both verbal and nonverbal behaviors. She interpreted teacher behavior in terms of a function performed for a pupil. The categories were: controlling, teacher imposition, facilitating, developing content, response, positive affectivity, and negative affectivity.

Charles Galloway, a pioneer in the field, was one of the first researchers to systematically investigate the use of nonverbal behaviors in the classroom. The principal objective of an exploratory study (1962) was to identify the most useful and valid procedure for gathering data about a teacher's nonverbal communication behaviors. Three independent observational procedures were used to collect data:

1. descriptive narratives were made; three judges read the records and made judgements regarding the pro-portion of encouraging, pro forma, or inhibiting communication;

2. experts in leadership, curriculum, and communication

made global assessments on an encouraging-inhibiting communication continuum; and

3. an observation instrument, developed by Galloway, was used, in which categories of nonverbal behaviors were listed in a continuum pertaining to encouraging-inhibiting communication.

The seven categories in Galloway's system were:

1. Enthusiastic support

2. Helping

3. Receptivity

4. Pro Forma

5. Inattentive

6. Unresponsive

7. Disapproval.

For five of these categories, three determinants were used to make judgements: facial expression, action, and vocal quality; categories four and seven did not use the determinants.

Among his conclusions, Galloway (1962) said that:

it can be concluded that the evidence in this study provided by an analysis of the three observations procedures was not overwhelmingly in favor of any one procedure. While the usefulness of the employment of experts [method 2] remains uncertain, two of the procedures, observation categories and narrative records, appear to hold promise of furnishing reliable data and fruitful information about a teacher's encouraging and inhibiting communication (p.136).

And in reference to these two methods, Galloway noted that,

. . .both procedures permitted the intrusion of

verbal messages conveyed by both teachers and pupils so as to confound any sensitivity an observer might possess toward responding to nonverbal cues and messages. In short, the conclusions of this study suggest that a perfected procedure for observing a teacher's nonverbal communication has not been identified or developed (1962, p. 137).

In later work, Galloway (1968) viewed teachers' nonverbal communication on an encouraging to restricting continuum; six dimensions were indentified:

Encouraging--------------Restricting	
Congruity	Incongruity
Responsive	Unresponsive
Positive	Negative Affectivity
Attentive	Inattentive
Facilitating	Unreceptive
Supportive	Disapproving

In 1970, Galloway listed the following ground rules to be used in writing narrative descriptions (p. 17):

1. describe the total situation that directly confronts the observer;

2. focus upon the behavior of the teacher;

3. describe everything done by any pupil that communicates with the teacher;

4. describe communicative acts as fully as possible;

5. put inferences in parentheses, not in descriptions; and

6. write descriptions in simple sentences.

A number of researchers have built on the work of

Galloway. In parallel studies, Balzer (1968) and Evans
(1968) developed an instrument used to categorize biology
teachers' verbal and nonverbal behaviors; each researcher
used the instrument to study different problems. Initially,
thirteen videotapes were made from which the instrument and
encoding processes were inductively developed. The pilot
recordings were reviewed until each teacher behavior
perceived as influencing the teaching-learning situation was
identified and written separately on three-by-five-inch
cards. The cards were sorted and placed into piles. After
numerous revisions, each pile contained a list of verbal and
nonverbal teacher behaviors that were similar or related in
their intent. A ten-second time interval was used. Table 4
shows the subdivisions of this instrument.

French (1968) conducted a study to develop and test a
meaningful conceptual model for viewing teacher-pupil
interaction and to determine if systematic observations of
both nonverbal and verbal behavior provided more useful data
for analyzing interaction than observations of verbal
behaviors alone. The instrument used was the IDER system of
behavioral analysis developed by French and Galloway. The
initials were taken from the Flanders conceptualization of
teacher influence of Indirect or Direct and from the
French-Galloway conceptualization of nonverbal cues as
Encouraging or Restricting. The system utilized the ten
verbal categories of the FIAS and added appropriate
nonverbal dimensions; Table 5 shows the IDER system.

Table 4

Categories, Subcategories, and Subdivisions of
Biology Teacher Inventory

---

1. <u>Management</u>

      a. Routine management

      b. Laboratory management

      c. Study management

2. <u>Control</u>

3. <u>Release</u>

4. <u>Goal Setting</u>

5. <u>Content Development</u>

      a. Teacher centered vs. b. Student centered

     1. Procedures

     2. Knowledge

     3. Scientific process

     4. Tentativeness of knowledge

     5. Generalizations

     6. Articulation of content

     7. Facilitates communication

6. <u>Affectivity</u>

      a. Positive affectivity

      b. Negative affectivity

7. <u>Undecided</u>

(Balzer, 1968, pp. 193-199)

Table 5

IDER

Indirect - Direct (verbal)	Encouraging - Restricting (nonverbal)
1. Accepts student feeling	
2. Praises or encourages	Congruent - Incongruent
3. Uses student ideas	Implement - Perfunctory
4. Asks questions	Personal - Impersonal
5. Lectures--gives information	Responsive - Unresponsive
6. Gives directions	Involve - Dismiss
7. Criticizes or justifies authority	Firm - Harsh
8. Student talk (response)	Receptive - Inattentive
9. Student talk (initiated)	Receptive - Inattentive
10. Silence or confusion	Comfort-Distress

(French & Galloway, 1968, p. 127)

An application of the IDER system is reported by Lail (1968). Other research in this vein includes Galloway (1971), French (1971), Parker and French (1971) and Galloway (1972).

Yet another study based upon the theoretical work of Galloway was performed by Heger (1969); Heger's research was also influenced by the work of Flanders and French. His new system was titled Miniaturized Total Interaction Analysis System (Mini-TIA) and was developed to encode both verbal and nonverbal behaviors. There are fourteen categories.

Dougherty (1970) used a slightly adapted Flander system to study different teaching strategies in physical fitness education. There were three basic modifications made to the Flanders approach:

1. slight nonverbal cues were added;

2. category 11 (meaningful nonverbal activity) was added; and

3. an "i" was placed behind codings when a teacher was addressing his statements to an individual rather than to a group.

Anderson, Struthers, and James (1970) reported the use of an instrument titled Teaching Strategies Observation Instrument to study the behaviors found in social science classrooms. The instrument was developed to give a single rating of a teacher's style, representing his position on a continuum of expository-direct or inductive-indirect

teaching. There were three versions of the instrument reported.

Another entry to the research is Peggy Amidon's <u>Nonverbal</u> <u>Interaction</u> <u>Analysis</u> (1971), which is a manual designed to parallel the Flanders system. Amidon cites four dimensions of nonverbal behaviors: 1) physical arrangement of the classroom; 2) materials (printed matter, audiovisual aids, and special supplies); 3)teacher and student nonverbal behaviors (gestures, facial expressions, vocal expressions, posture, position, and physical movement); and 4) teacher and student activities (reading, writing, and demonstration). Pictographs combined with a numerical system were used to describe the given behavior; the actual coding system and procedure relates quite closely to the Flanders system.

Based upon research by Grant (1969), Grant and Hennings (1971) developed an inventory to be used by teachers and student-teachers to achieve an awareness of how they function nonverbally. The instrument was based on the following categories:

```
1.0 Conducting
        1.1 Controlling participation
        1.2 Obtaining attending behavior

2.0 Acting
        2.1 Emphasizing
        2.2 Illustrating
        2.3 Role playing or pantomiming

3.0 Wielding
        3.1 Direct wielding
        3.2 Indirect wielding
        3.3 Instrumental wielding
```

Within this framework, teacher motions were classified as either instructional or personal. Also, they investigated other various nonverbal patterns and functions.

Love and Roderick (1971) developed an instrument with a purpose similar to that of Grant and Hennings. Their instrument was developed to identify behaviors of teachers which had to be: 1) exhibited by a majority of teachers, and 2) singular in meaning in our culture. Categories were developed to parallel the Flanders system. Table 6 shows the categories and sample behaviors of this system.

Cheffers (1972) adapted the Flanders system (FIAS) to account for nonverbal behaviors. His instrument was designed for use in physical education settings, where nonverbal activities are especially prevalent. For the purpose of this system--named CAFIAS--nonverbal communications were classified as either facial expressions or gestures and postural positions; a third classification, classroom surroundings, was coded as environmental influences. Category numbers paralleled the Flanders system (FIAS). Two adaptations were made to the FIAS: 1) category eight was split to account for more precise student response, and 2) categories one and three were combined. Table 7 illustrates CAFIAS.

Table 6

Love-Roderick Nonverbal Categories and
Sample Teacher Behaviors

Category	Sample Teacher Behaviors
1. Accepts Student Behavior	Smiles, affirmatively shakes head, pats on the back, winks, places hand on shoulder or head
2. Praises Student Behavior	Places index finger and thumb together, claps, raises eyebrows and smiles, nods head affirmatively and smiles
3. Displays Student Ideas	Writes comments on board, puts students' work on bulletin board, holds up papers, provides for nonverbal student demonstration
4. Shows Interest in Student Behavior	Establishes and maintains eye contact
5. Moves to Facilitate Student-to-Student Interaction	Physically moves into the position of group member, physically moves away from the group
6. Gives Directions to Students	Points with the hand, looks at specified area, employs pre-determined signal (such as raising hands for students to stand up), reinforces numerical aspects by showing that number of fingers, extends arms forward and beckons with the hands, points to student for answers
7. Shows Authority Toward Students	Frowns, stares, raises eyebrows, taps foot, rolls book on the desk, negatively shakes head, walks or looks away from the deviant, snaps fingers

Table 6 Continued

8. Focuses Students' Attention on Important Points	Uses pointer, walks toward the person or object, taps on something, thrusts head forward, thrusts arm forward, employs a nonverbal movement with a verbal statement to give it emphasis
9. Demonstrates and/or Illustrates	Performs a physical skill, manipulates materials and media, illustrates a verbal statement with a nonverbal action
10. Ignores Student Behavior	Lacks nonverbal response when one is ordinarily expected

(Love and Roderick, 1971, pp. 295-296)

Table 7

CAFIS Categories

Cate-gories	RELEVANT BEHAVIORS Verbal	Nonverbal
2-12	2 Praises, comments, jokes, encourages.	12 Face: Smiles, nods with smile, (energetic) winks, laughs. Posture: Claps hands, pats on shoulder, places hand on head of student, rings student's hand, embraces joyfully, laughs to encourage, catches in gymnastics helps child over obstacles.
3-13	3 Accepts, clarifies, uses and develops suggestions and feelings by the learner.	13 Face: Nods without smiling, tilts head in sympathic reflection, sighs empathetically. Posture: shake hands, embrace sympathetically, place hand on shoulder, puts arm around shoulder or waist, catches an implement thrown by student, accepts facilities, teacher playing game with students as one member of team.
4-14	4 Asks questions requiring student answer.	14 Face: Wrinkles brow, opens mouth, turns head with quizzical look. Posture: places hands in air, waves finger to and fro anticipating answer, scratches head, cups hand to ear, stands still half turned towards person, awaits answer.

Table 7 Continued

5-15	5 Gives facts, opinions, ex-presses ideas or asks rhetorical questions.	15 Face: Whispers words inaudibly, sings or whistles. Posture: Gesticulates, draws, writes, demonstrates activities, paints.
6-16	6 Gives directions or orders.	16 Face: Points with head, beckons with head, yells at. Posture: Points finger, blows whistle, holds body erect while barking commands, push a child through a movement, push a child in a given direction.
7-17	7 Criticizes, expresses anger or distrust, sarcastic or extreme self reference.	17 Face: Grimaces, growls, frowns, drops head, throws head back in derisive laughter, rolls eyes, bites, spits, butts with head, shakes head. Posture: Hits, pushes away, pinches, grapples with, pushes hands at student, drops hands in disgust, bangs table, damages equipment, throws things down.
8-18	8 Student response which is entirely predictable such as obedience to orders and responses not requiring thinking beyond the comprehension phase of knowledge (after Bloom).	18 Face: Poker face response, nod, shake, gives small grunts, quick smile. Posture: Moves mechanically to questions or directions, responds to any action with minimal nervous activity, robot like.

Table 7 Continued

8/-18/	8/(Eine) Predictable student response which re- quired some measure of evaluation and synthesis from student but must remain within the province of pre- dictability. The initial behavior was in response to teacher initiation.	18/(Eineteen) <u>Face</u>: A "Whats more Sir" look, eyes sparkling. <u>Posture</u>: Add movement to those given or expected, tries to show some arrangement which re- quires additional thinking, e.g., works on gymnastic routine, dribbles basketball, all game playing.
9-19	9 Pupil initiated talk which is purely the result of their own initiative and which could not be predicted.	19 <u>Face</u>: Interrupting sounds, gasps, sighs. <u>Posture</u>: Puts hands up to ask questions, gets up and walks around without provocation, begins creative movement educa- tion, makes up own games, makes up own movements, shows initiative in supportive move- ment, introduces new movments into games not predictable in the rules of the games.
10-20	10 Stands for confusion, chaos, disorder, noise, much noise.	20 <u>Face</u>: Silence, children sitting doing nothing noiselessly awaiting teacher just prior to teacher entry, etc.

<u>CODING SYMBOLS</u>
Teacher (.)
Environment (E)
Student (S)

(Cheffers, 1972, pp. 34-38)

As part of a study of the effect of three forms of teacher nonverbal communication (minimum, maximum, and contradictory) on two measures of teacher effectiveness, Civikly (1973) developed a coding system to measure teacher nonverbal behaviors in the college classroom. This system was developed through an examination of the literature; additional categories were added to existing systems. Table 8 shows this system, which used event sampling.

Loss (1973) developed an instrument to evaluate the physical, nonverbal components in home economics classrooms, Flanders' work was a primary force in shaping this study (p. 2). This system consisted of two devices: one device was an instrument to gather data on the physical characteristics of the classroom; the other device was to describe the teaching-learning process. The second device consisted of thirteen categories with each category having five sets of possible behaviors; the five-set-system accounted for the intensity of each behavior.

Observation of General Music Teachers

"In the area of music, the research on using and developing observational instruments has occurred primarily in the 1970's" (Dorman, 1978, p. 35). Many of the studies in this line of research were involved in interaction analysis. One of the earliest examples of interaction analysis applied to music education was a study by

Table 8

Teacher Nonverbal Communication Coding System

---

1. BODY MOTION
   walks across the room
   shuffles
   moves around class
   moves from desk to board
   sways back & forth
      on heels and toes
   sways from side to side
   steps back
   shrugs shoulders
   nods at class
   shakes head (horizontal)
   moves head to one side
   taps feet
   shakes leg(s)
   waves arms
   folds arms across chest
   has arms behind back
   puts both hands on hips
   puts one hand on hip
   others:

3. HAND GESTURES
   points with finger, hand,
      stick, chalk, book,
      microphone
   claps hands
   snaps fingers
   taps desk
   folds hands (clasps)
   makes "OK" sign
   makes numeric signs
   steepling
   holds head (in hands)
   makes large gestures
   makes "form" gestures
      (molding in air)
   makes "direction" gestures
   cuts air with choppy
      head motions
   makes hand circles
   beckons students
   extends open palms to class
   others:

2. POSTURE-POSITION
   sits at desk
   sits on desk
   sits on stool
   sits on floor
   stands at attention
   stands at front-center
   leans against board
   leans against desk (lecturn)
   leans forward over desk,
      toward class
   others:

Table 8 Continued

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4. FACIAL EXPRESSION
    smiles
    frowns
    wrinkles brow
    raises brow
    squints
    stares
    winks
    widens eyes
    looks down at notes
    wrinkles nose
    pouts
    smacks lips
    yawns
    others:

5. VOCAL EXPRESSION
    speaks in monotone
    varies volume
    varies stress
    varies rate
    pauses
    uses silence
    "uh", "um", "hmm", etc.
    laughs
    coughs
    giggles
    clicks tongue
    sighs
    moans
    whines
    clears throat
    whispers
    shouts
    others:

6. PERSONAL ACTS
    adjusts tie
    adjusts collar
    adjusts glasses
    adjusts jacket, blouse,
       shirt
    tucks in blouse, shirt
    places hands in pockets
    jingles coins in pockets
    plays with jewelry
    pushes hair back
    scratches head, face,
       mustache, nose, ear,
       neck, leg, chin
    chews gum:
    others:

7. ANY ADDITIONAL COMMENTS

(Civikly, 1973, pp. 115-119)

Thomas N. Filson (1957), which investigated direct and indirect teaching on the dependent acts of junior high general music students. In a 1969 study, Wallace H. Nolin used Hough's Observational System for Instructinal Analysis, a sixteen-category modification of FIAS at that date, to measure patterns of teacher-student interaction behaviors in selected junior high school general music classes. Although Nolin's study for the most part was of verbal behaviors, three categories touched upon nonverbal: teacher demonstration, contemplation, and directed activity. Nolin (1971) made the following recommendations:

> Specific nonverbal behaviors need to be identified beyond the three categories suggested in the Hough scale.
>   It was assumed prior to the conduct of this study that the performance classroom. . .would not be appropriate for analysis through the use of a behavioral scale designed primarily to measure verbal behaviors because of the autocratic dominance of the performance classroom teacher and excessive nonverbal behaviors. However, in view of the overwhelming directness of the general music teachers in this study, the performance classroom may be a potentially valid research endeavor, particularly if it were possible to identify more discrete nonverbal behaviors of both teachers and students (p. 325).

In a 1970 study, Charles Whitehill was concerned with determining if the Flanders System of Interaction Analysis, as adapted for general music classes, could be used to discriminate teacher behavior of general classroom teachers of different ability. Five categories for observing nonverbal and performance behavior were added to FIAS; these categories were: nonverbal praise and encouragement

(20), lecturing performance (50), nonverbal criticism (70), student performance-response (80), and student performance-initiation (90). The lecturing performance category consisted of teacher demonstration. The data in these categories were kept separate from the Flanders' data for later analysis. When there were both verbal and nonverbal messages, the verbal coding was recorded. In addition, the following code was used for keeping a record of activities during the observation periods:

A - Administration

C - Crafts

D - Overt ryhthmic activity

E - Evaluation

F - Lecturing

I - Playing instruments

L - Listening

P - Planning

S - Singing

W - Supervising seat work

Whitehill found that of all the categories added to FIAS, nonverbal lecturing and the two student performance categories were the most frequently used. The incidence of behaviors recorded in the other two categories was quite low, because such behaviors were usually accompanied by verbal behaviors in the concomitant categories. Whitehill concluded that his adaptation was successful.

Also in 1970, Ralph E. Verrastro investigated the use of verbal behavior analysis as a supervisory technique with student teachers in music to determine whether supervision based on verbal behavior patterns affected student ability to engage in objective self-assessment, and to check the effect of the activity on the students' perception of the teacher. The Withall Social-Emotional Climate Index was used in this research. A similar study is reported in 1975.

In another study of general music teaching, Alicia Pagano (1972) categorized the classroom interaction of ten selected music teachers of the first and sixth grades. A modified Flanders system was used. Pagano concluded that the music teachers in this study were flexible and direct in interaction patterns and that they were consistent in their patterns among classes in the same grade levels and consistent in their flexibility and influence patterns between grade levels. There were differences in their uses of the fifteen categories between grade levels.

In a 1972 study, Henderson investigated the effectiveness on inservice teacher training in increasing the contingent use of academic and social approval and decreasing contingent disapproval behavior by music teachers. The study was limited to observations of 27 music teachers. Two 15-minute, pre-training observations and two 15-minute post-training observations were made of each teacher. Following pre-training observations, the experimental group participated in a series of inservice

workshops; the control group did not participate in the training.

Each observation was videotaped and consisted of 15-minute periods. All observations were recorded and analyzed by trained observers. Data were recorded in 15-second time intervals on a teacher observation instrument which was "an adaptation of an observation instrument devised by Charles and Clifford Madsen. . ."(Henderson, 1972, p. 36); a description of this system is as shown in Table 9. For the purposes of this study, nonverbal behavior was defined as "those aspects of body motion behavior (gestures and mannerisms) which convey academic and social approval and disapproval" (Henderson, 1972, p. 31).

The results indicated that the inservice training did not change the group's teaching behaviors except for disapproval behavior; various other gains were noted. The author speculated that a longer training period would have helped to yield significant gains.

In a 1974 study, James Hughes used a Flanders-type system to test the hypothesis that seventh grade general music teachers with a high degree of positive self-concept would create a classroom environment in which verbal interaction would occur more frequently than in classrooms whose teachers expressed a more negative self-concept. No account was made for nonverbal behaviors.

Table 9

Teacher Observation Instrument
Category/Symbol Description

Activity Codes

GRW	Getting Ready to Work
C	Conducting
L	Lecturing
S	Singing
I	Initiation
D	Demonstration
E	Evaluation
LD	Listening Discrimination
I	Initiation
E	Evaluation
P	Playing
I	Initiation
D	Demonstration
E	Evaluation

Verbal and Nonverbal Behavior Codes

Aa	Approval Academic--Teacher gives appropriate approval to academic responses of students.
As	Approval Social--Teacher gives appropriate approval to social responses of student.
Da	Disapproval Academic--Teacher gives appropriate disapproval to academic responses of students.
Ds	Disapproval Social--Teacher gives appropriate disapproval to social responses of the students.

Table 9 Continued

Ea   Error Academic--Teacher gives approval to an
incorrect academic response of the students.

Es   Error Social--Teacher gives approval to an
incorrect social response of the students.

Ia   Inconsistent Academic--Teacher's verbal response
is not compatible (consistent) with the
nonverbal response in registering approval
or disapproval of academic response of
students.

Is   Inconsistent Social--Teacher's verbal response
is not compatible (consistent) with the
nonverbal behavior response in registering
approval or disapproval of social responses
of students.

NI   No interaction, verbal or nonverbal, between
teacher and students.

WT   Wait-time

R   Reward

(Henderson, 1972, pp. 47-49)

Another example of verbal analysis research is by Hedrich (1976). Hedrich adapted a Flanders-type instrument to analyze and evaluate preservice music teachers. Hedrick concluded that this system could be used for self-evaluation and analysis, in that preservice teachers became aware of certain attributes of their verbal teaching behavior.

Studies Related to Group Rehearsals in Music

One of the earliest reported studies investigating group rehearsals in music was performed by Howard Van Sickle in 1955. He focused upon the social psychological forces at work in group rehearsals. Although his research does not specifically deal with interaction analysis, it does appear to be the first related to the socio-emotional climate in instrumental music.

In 1967, David Snapp used a modified Flanders system to determine the accumulative verbal behaviors of teachers and students in a fifth grade instrumental class. The study clearly described the direct teaching style prevalent in instrumental music instruction.

Daellenbach was probably the first to study nonverbal behaviors in the music education setting in a systematic manner. In his first study (1968), he attempted to identify various music teaching behaviors at several instructional levels, several teacher experience levels, and in a variety of teaching environments; the types of instruction included strings, winds, percussion, vocal, and conducting technique.

The subjects were videotaped; a ten-minute sample of each of the twelve subjects was dubbed from the original tapes to form a master tape. A behavioral characteristics chart, as shown in Table 10, was devised based upon data observed from repeated playings of the videotapes. Daellenbach concluded that although verbal behavior played a principal role in music teaching, the high coincidence of nonverbal behavior was extremely important, and in certain types of music instruction, nonverbal factors were on a greater level of significance than verbal factors. He noted that over fifty percent of instructional time was spent in nonverbal activity. He also concluded that the videotape recorder was an extremely effective tool for recording and analyzing behavioral data.

Daellenbach undertook a second study (1970b; this study is also reported in 1970a) designed to investigate overt verbal and nonverbal behaviors exhibited by students actively involved in a music performance environment with nonverbal considerations viewed as being particularly important. A videotaping procedure similar to that of the previous study was employed. There were seventeen subjects, ranging from preschool age to college age. The final tapes represented 340 minutes of class time; the work tapes represented 1020 minutes.

Table 10

List for Identification of Teacher Behaviors

I. Verbal Behaviors
     A. Directions or instructions
     B. Information or teaching
     C. Positive reinforcement
     D. Negative reinforcement
     E. Questioning
     F. Disciplinary comments
     G. Manneristic use of a word or phrase

II. Nonverbal Behaviors
     A. Directed motor behavior
     B. Nondirected motor behavior
     C. Random or impromptu mannerism
     D. Patterned mannerism
     E. Concentrated listening

III. Conducting Behaviors
     A. One-hand (patterns, tempo)
     B. One-hand (interpretations)
     C. Two-hand (patterns, tempo)
     D. Two-hand (interpretations)

IV. Model Behaviors
     A. Playing (alone--solo model)
     B. Singing (alone--solo model)
     C. Playing (with student)
     D. Singing (with student)
     E. Baton or implement tapping
     F. Foot beating
     G. Clapping

(Daellenbach, 1970b, p. 11)

Daellenbach followed a very precise method for developing the categories used in his observation system:

> Initially, construction of the behavioral categories system was undertaken inductively, that is, beginning with no predetermined items and proceeding to the final system only through observation of actual behavioral occurrence. The first step was to view all preliminary videotape recordings of music learner activity, making notes on file cards of behaviors in evidence. . . . After intensive tape viewing for information of this type, the cards were grouped according to similarity of the behaviors observed. There were two basic types of overt behavior in evidence--those that could be seen (nonverbal) and those that could be heard (verbal and nonverbal). Therefore, the behaviors under study were 1) aural, 2) visual, or 3) a combination of aural and visual. Further detailed inspection of the unedited videotape recordings was made to identify all specific music performance learning behaviors that were considered for inclusion on the tentative category system.
>
> With the tentative behavior category system completed, refinement of the system began. At this stage, interviews with authorities in allied disciplines were sought to further identify and classify observable behaviors and to determine appropriate terminology. Duplications within the category system were eliminated, allowing for minimum overlapping of subcategories. Of greater concern was the specific detail to be incorporated within each category, since it would be possible. . .to devote an entire study to the learner's face alone (1970b, pp. 50-51).

After this process, he returned to the inductively derived observed behavior structure developed from the initial tape screenings. From this process the final Observable Performance Learning Behavior Classification Index, as shown in Table 11 was developed. The researcher noted each behavior occurrence and determined the total duration of each occurrence using a stopwatch.

Table 11

Observable Performance Learning Behavior
Classification Index

TYPE I BEHAVIORS: <u>VERBAL</u>
 A. Response Verbal Behaviors (Elicited)
   1. Directed to Instructor
   2. Directed to Another Student
 B. Stimulus Verbal Behaviors (Emitted)
   1. Directed to Instructor
     a. Question
     b. Statement
     c. Interjection
   2. Directed to Another Student
     a. Question
     b. Statement
     c. Interjection
 C. Nondirected Verbal Behaviors (Random)

TYPE IIA BEHAVIORS: <u>MOTOR</u>
(PERFORMANCE AND NONPERFORMANCE RELATED)
 A. Visual Contact
   1. Directed toward Instructor
   2. Directed toward Another Student
   3. Directed toward Music (Score) or Book
   4. Directed to Musical Instrument
   5. Other Directed
   6. Nondirected (Random)
 B. Arm and Hand Movement
   1. Raised (Attention Seeking)
   2. Directed to Music (Score) or Book
   3. Directed to Musical Instrument
   4. Other Directed
   5. Nondirected (Random)
 C. Fingers
   1. Directed to Musical Instrument
   2. Pointed to Printed Material
   3. Other Directed
   4. Nondirected (Random)
 D. Paralinguistic Facial Expression
   1. Positive (Pleasure)
   2. Negative (Displeasure)
 E. Body (Trunk) Position
   1. Seated
   2. Standing
   3. Walking
     a. Directed
     b. Nondirected

Table 11 Continued

TYPE IIB BEHAVIORS: <u>MOTOR</u> (PERFORMANCE RELATED ONLY)
A. Response Performance Behaviors (Elicited)
    1. Performance Alone (Solo)
        a. Initial
        b. Subsequent (Adjustive Behaviors)
    2. Performance with Instructor
        a. Initial
        b. Subsequent
    3. Performance with Other Students
        a. Initial
        b. Subsequent
B. Stimulus Performance Behaviors (Emitted)
    1. Performance Alone (Solo)
    2. Performance with Instructor
    3. Performance with Other Students

TYPE III BEHAVIORS: <u>ATTENDING</u> (NONVERBAL)
A. Listening to Aural Behaviors
    1. Listening Directed to Instructor While He:
        a. Verbalizes
        b. Performs
    2. Listening Directed to other Student While He:
        a. Verbalizes
        b. Performs
    3. Listening Directed to Recorded Stimulus
B. Attendance to Instructor's Motor Behaviors
   (Nonperformance)
C. Attendance to Other Student's Motor Behaviors
D. Attendance to Nondirective Stimuli

(Daellenbach, 1970b, pp. 54-55)

Daellenbach made the following conclusions (p. 80):

1. the seventeen subjects exhibited relatively few occurrences of verbal behaviors, and

2. the subjects spent little class time verbalizing.

Erbes (1972) was the first to develop an observation system to report and describe verbal interaction of teachers and students during rehearsals of large, performing ensembles. To develop this instrument, Erbes audiotaped the rehearsals of ten randomly selected ensembles and transcribed the fifteen hours of rehearsal behaviors to verbatim transcripts. A 26-category system was derived through an analysis of the transcripts. Categories were combined and modified to form the Rehearsal Interaction Observation System (RIOS), which is shown in Table 12. Although RIOS was developed to account for only verbal behaviors, some nonverbal behaviors were considered: category 5x, nonverbal demonstration, and category 11, silence/confusion, do account for some nonverbal behaviors.

To determine the criterion-related validity, nine rehearsals were coded using RIOS and the Withall Climate Index (1949). A correlation of r=.94 was found between the two instruments. Initially, reliability was determined to be .83 using trained observers. The Scott Formula was used. Further, Erbes undertook a study where three undergraduate students were trained in the use of RIOS using a training

Table 12

The Rehearsal Interaction Observation System (RIOS)

Category Number	Category Description
1.	Uses: Conductor uses, clarifies, or repeats ideas, performance, behavior, or feelings suggested by the students.
2.	Encourages: Conductor encourages, praises or accepts student ideas, performance, or behavior.
3.	Questions: Conductor questions with the intent that the student respond. Questions may also occur in other teacher categories.
4.	Informs: Conductor gives information, lectures, or states opinions based on his own ideas or those other than the students. Short responses to student questions and rhetorical questions are included in #4.
5.	Demonstrates: A conductor demonstrates the manner in which an act is or should be performed or accomplished. (Generally nonverbal in nature) An X code = nonverbal.
6.	Directs: Conductor directs or commands student with intent that he comply.
7.	Criticizes: Conductor criticizes, rejects, or challenges student ideas, performance, behavior, or feelings.
8.	Corrects: Conductor checks or corrects student ideas, performance, or behavior in an obvious manner.
9.	Responds: Student responds or questions in a manner structured by the conductor.
10.	Initiates: Student initiates communication or questions in a manner unstructured by the conductor.
11.	Silence or Confusion: Periods in which verbal communication cannot be understood. Constructive periods should be indicated by 11+ and nonconstructive periods by 11-

manual and three to four hours of self-instruction in the use of the system; a mean reliability figure of .61 was attained.

Erbes made the following conclusions (pp. 136-138):

1. The conductor-student interaction in large group rehearsals is unique compared to academic classroom subjects. In a study of twelve rehearsals from the research for this dissertation, informing, demonstration, direction giving, criticizing, and correcting constituted 89 percent of the conductor behaviors. Encouragement of student behaviors and performance constituted only seven percent. Student verbal behavior consisted primarily of responses to conductor questions.

2. An interaction analysis system can indicate the socio-emotional climate of large-group rehearsal situations.

3. An acceptable proficiency of coding rehearsal interaction can be obtained with approximately fifteen hours of self-instruction, discussion, and practice in the technique.

4. A minimum proficiency level of coding rehearsal interaction can be obtained with approximately four hours of self-instruction and practice in the technique.

5. The independent nature of the RIOS categories did not cause serious problems in objectively categorizing

rehearsal interaction by the investigator and other rehearsal personnel. Some confusion occasionally existed in discriminating between the categories of Informing and Directing. It was often difficult to discriminate between rapid shifts in Criticizing, Correcting, and Informing.

Several studies have been conducted which use the RIOS as a data gathering tool. One of the first (Berz, 1972), investigated differences between the high school and university levels of instruction. Erbes (1976) conducted a study using RIOS to obtain a profile of the verbal rehearsal techniques of high school instrumental music teachers in Michigan who were considered successful teachers; success in teaching was determined by past ratings in band and orchestra festivals.

RIOS was used by Hicks (1976) to test whether student conductors trained in the RIOS technique exhibited a significant difference from those student conductors not trained in the technique. Hicks concluded that prospective teachers receiving training in interaction analysis were less dogmatic in their thinking, used more indirect verbal behaviors, and used more variety in their teaching than did their counterparts.

Scofield (1977) attempted to establish a profile for choral conductors similar to the profile established for instrumental conductors by Erbes (1976). RIOS was used to evaluate student-teacher interaction in the rehearsals of

successful choral music teachers. This study found a positive correlation between these two groups of conductors.

Another study (Berz, 1978) attempted to make comparisons in the teaching styles of teachers who taught at three different grade level groupings (elementary, junior high, and high school) in instrumental music; RIOS was employed as a data gathering device. The research concluded that the teachers studied tended to be more direct and spend more time in performance activities on the high school level than on either the elementary or junior high levels. The results of this research may not be generalizable because of the small size of the sample.

In 1974, Reynolds developed a modified version of a system by Hough and Duncan to gather and analyze information regarding small, instrumental performance classes. Non-verbal behaviors were not considered.

Studies Related to the Observation of Conducting

There have been a number of studies relating to conducting curricula. An example is the 1963 study performed by Matthews. He developed a questionnaire to determine what conducting skills/topics might be important and should be stressed in the study of conducting; Table 13 shows the results. Matthews made a number of recommendations for curricular requirements for conducting

Table 13

Ratings of Topics in General Conducting
Courses for Music Majors

Topics	Group I			Group II			Group III		
	f	I	%	f	I	%	f	I	%
1.Drill on beat patterns	121	108	89.3	64	59	92.2	10	9	90
2.Subdivided beats, compound beats	122	91	74.6	64	56	87.5	10	9	90
3.Preparatory (prelimi-nary) beat, starting	122	117	95.9	64	62	96.9	10	10	100
4.Cut-offs and releases	120	110	91.7	64	60	93.8	10	10	100
5.Cuing	122	94	77.0	63	54	85.7	10	7	70
6.Styles of beats	122	88	72.1	64	57	89.1	10	9	90
7.Conducting with baton	122	46	37.7	63	37	58.7	10	5	50
8.Conducting without baton	118	44	37.3	57	15	26.3	10	4	40
9.Facial expression Use of eyes	120	34	28.3	61	37	60.7	10	1	10
10.Duties of right hand Duties of left hand	122	83	68.0	64	55	85.9	9	8	89
11.Physical drill	118	44	37.3	64	28	43.7	10	5	50
12.Dynamics, changes in volume, accents	122	105	86.1	64	57	89.0	10	10	100
13.Individuality	118	36	30.5	60	18	30.0	9	3	33
14.Free rhythm and irregular patterns	120	63	52.5	62	32	51.6	9	4	44
15.Changes in tempo; fermati and interruptions	122	99	81.2	64	61	95.3	10	9	90
16.Actual group conducting	122	112	91.8	64	55	85.9	10	10	100

Table 13 Continued

	f	I	%	f	I	%	f	I	%
17.Conducting to records	122	28	23.0	62	7	11.3	10	5	50
18.Score analysis	122	94	77.0	62	46	74.2	10	9	90
19.Transposition	119	63	52.9	62	39	62.9	10	6	60
20.Knowledge of terms	118	102	86.4	64	56	87.5	9	7	78

Group I: School music teachers
Group II: Professors of conducting
Group III: Professional conductors

f: Number of respondents
I: Number who felt the topic essential
%:   Percentage of total

(Matthews, in 1967 reference, p. 100, adapted)

study based upon the results of the questionnaire. Other studies related to curricular concerns in conducting are: Hunter (1968), Wyatt (1974), Gonzo and Forsythe (1976), and Fleming (1977).

Leyden (1968) studied kinescope films of Arturo Toscanini to determine the actual conducting patterns employed by Toscanini and to see how those patterns compared with those found in conducting texts. Portions of the kinescopes were rephotographed in eight millimeter film and were projected one frame at a time onto tracing paper where the beat patterns were diagramed. Among his conclusions were that Toscanini used a set of interrelated patterns which were consistent in shape and direction under all circumstances, and that no difference was noted between Toscanini's conducting of instrumental and vocal music.

Yarbrough (1973) investigated the effect of magnitude of conductor behavior on performance, attentiveness, and attitude of students on selected mixed choruses. This study represents one of the earliest efforts that accounts for a range of nonverbal behaviors of conductors. Four mixed choruses were rehearsed under three different conditions: 1) with the regular conductor, 2) with a high magnitude conductor, and 3) with a low magnitude conductor. Control for order effect was accomplished by rotating the experimental conditions of high and low magnitude. The effect of magnitude was measured by the dependent variables: 1) musical performance, 2) student attentiveness, and 3)

student attitude. A panel of judges rated audiotaped performances to assess musical performance; student attentiveness was measured by observing the percentage of students overtly on-task, and student attitude was measured by means of a questionnaire.

The experimental conditions, high and low magnitude of conductor behavior, were operationally defined by Yarbrough as shown in Table 14. "Operational definitions of high and low magnitude were based upon extensive observations of choral ensembles" (Yarbrough, 1973, p. 32). The conductors were observed using the Music Conductor Observation Form, which had been developed for this study; a very slightly revised description of the categories is shown in Table 15. A fifteen-second coding interval was employed. Observer reliability was computed for all observations by comparing each observational symbol during every interval and using the following formula:

$$\frac{\text{Number of Agreements}}{\text{Number of agreements plus disagreements}}$$

In discussing the results, Yarbrough stated that "the variable of greatest interest in the. . .investigation was that concerning magnitude of conductor behavior" (1973, p. 44). Mean frequencies for some of these behaviors are expressed in Table 16. Yarbrough noted that a combination of approval facial expression, eye contact, verbal approval, and approach body movement could be the combination of

Table 14

Operational Definitions of
Magnitude of Conductor Behaviors

Teacher Behavior	High Magnitude	Low Magnitude
Eye Contact	Maintains with group and/or individuals throughout rehearsal.	Never looks at individuals or group. Looks at music, ceiling, or occasionally in direction of piano.
Closeness	Frequently walks or leans toward chorus or particular section.	Stands behind music stand at all times. Music stand is always a minimum of four feet from chorus.
Volume and Modulation of Voice	Volume constantly varies. Wide range of volume as well as speaking pitch. Voice reflects "enthusiasm and vitality".	Volume remains clearly audible but the same approximate volume and pitch throughout rehearsal. Voice reflects little "enthusiasm and vitality".
Gestures	Uses arms and hands to aid in musical phrasing. Great deal of movement. Varies size of conducting patterns to indicate phrases, dynamics, etc.	Strict conducting pattern, never varying. Uses arms and hands for attacks and releases. Exact movements.

Table 15 Continued

Facial Expressions	Face reflects sharp contrasts between approval/disapproval. Approval is expressed by grinning, laughing aloud, raising eyebrows, widening eyes. Disapproval is expressed by frowning, knitting brow, pursing lips, narrowing eyes.	Neutral mask. No frowns. No smiles.
Rehearsal Pace	"Rapid and exciting." Quick instructions. Minimal talking. Less than one second between activity. Frequently gives instructions to group while they are singing.	"Slow and methodical." Meticulous care and detail in instructions. Always stops group to give instructions.

(Yarbrough, 1973, pp. 23-34)

Table 15

Operatinal Definitions for
Music Conductor Observation Form

Category Area	Sub-Category	Behavior
ACTIVITY	I	Instructing. Conductor has stopped group performance and is demonstrating or giving instructions
	SP	Singing or chanting rhythm while group is performing.
	TP	Teaching or talking while group is performing. This includes instructions as well as one word reinforcements, e.g., "Good."
BODY MOVEMENT	A	Approaching group. Motion can be side to side, leaning in direction of group at a 45 degree angle, or walking forward. Several occurrences should be noted only once per interval.
	D	Departure from group. Usually a return to a central position behind music stand. Walking backwards or leaning backwards. Several occurrences should be noted only once per interval.
	S	Stationary. Conductor stays behind music stand or stands still. Mark "S" only if conductor is stationary for the entire interval.
CONDUCTING GESTURES	S	Strict. Conductor moves hands and arms in strict beat pattern. No variation in size of pattern.
	E	Expressive. Any deviation from strict beat pattern for purposes of indicating dynamics, phrasing, etc. Variations in size of pattern.
	None	Mark "None" only if conductor is not conducting during the entire interval.

Table 15 Continued

EYE CONTACT	G	Conductor is looking at entire group or section for at least three continuous seconds.
	I	Conductor is looking at an individual in group or accompanist for at least three continuous seconds.
	M	Conductor is looking at music for at least three continuous seconds.
	O	Conductor is looking at something other than group, individuals, or music, e.g., ceiling, floor. Mark "O" only if it occurs for the entire interval.
FACIAL EXPRESSION	A	Conductor's face expresses approval by smiling, grinning, raised eyebrows, winking, opening and widening eyes, nodding head up and down.
	D	Conductor's face expresses disapproval by frowning, knitting eyebrows, looking at ceiling, smirking, wrinkling mouth, squinting eyes, wrinkling forehead or nose, puckering lips, grimacing, tightening jaw or lips, twisting side of mouth, raising lips.
	N	Conductor's face is a neutral mask. No expressions which can be interpreted approval/disapproval. No frowns, smiles, etc. Mark "N" only if expression is neutral for the entire interval.

NOTE: For categories "Speech Speed", "Voice Pitch", and "Voice Volume", if conductor is singing or not speaking, leave interval blank. It is recommended that the observer observe voice categories last. This will allow the observer to become well-acquainted with the pitch variations of the conductor's speaking voice as well as variations in voice volume.

SPEECH SPEED	S	Steady. Constant flow of words without pause or repetition. Also, one-word commands or reinforcements, e.g., "Good".

Table 15 Continued

	H	Hesitant. Pauses between words, e.g., "Uh's".
	R	Repetitive. Repetition of words or phrases, i.e., "That's it basses, that's it," or "page 24. . .page 24."

NOTE: It is possible to have more than one of these (S,H, or R) occur within any interval, e.g., conductor may speak steadily for five seconds, then repeat part of what has been said or speak steadily for five seconds, hesitate, falter, then continue to speak steadily.

VOICE PITCH	L	Low. The conductor is speaking in lowest register.
	V	Variable. Varying from high to low pitches so that it is impossible to categorize the entire interval as either high or low.
	H	High. The conductor speaks in highest register.
VOICE VOLUME	S	Soft. Whispering. Barely audible.
	N	Normal speaking voice.
	L	Loud. Shouting above group or giving loud approvals, dis-approvals, or instructions.
MANNERISMS		Additional behaviors whose frequency of occurrence is so great that they are annoying or distracting.

(Yarbrough, 1976, pp. 8-9)

Table 16

Mean Frequencies of Selected Conductor Behaviors

Category	Behavior	Baseline	High Magnitude	Low Magnitude
BODY MOVEMENT	Approach	5.75	17.00	0.00
	Departure	0.50	5.75	0.00
	Stationary	58.25	43.25	64.00
GESTURES	Strict	21.25	30.25	44.25
	Expressive	10.75	14.50	1.50
	None	19.00	18.50	14.25
VOICE PITCH	Low	9.75	2.75	10.25
	Variable	27.50	28.25	21.25
	High	4.75	19.00	1.75
VOICE VOLUME	Soft	1.50	4.25	0.75
	Normal	37.75	17.50	30.00
	Loud	3.25	32.50	3.33
EYE CONTACT	Group	24.00	59.75	3.50
	Individual	1.75	1.00	0.00
	Music/Other	51.00	27.50	64.00
EXPRESSIONS	Approval	23.50	33.25	6.00
	Disapproval	21.50	24.00	14.50
	Neutral	19.75	7.25	43.50

(Yarbrough, 1973, pp. 52, 54, 57, 60, 67, 69)

behaviors resulting in the highest magnitude (p. 66). She noted a number of mannerisms related to nonverbal demonstration (snapping fingers, clapping hands), kinesic-adaptor (hands to hair, hands to glasses, hands to face), and a blend of nonverbal demonstration and facial expression (mouthing words) (p. 105). Other efforts in the area of nonverbal communication in conducting by Yarbrough and others are noted: Yarbrough (1975, 1976, 1979), Yarbrough, Wapnick, and Kelly (1979), and Madsen and Yarbrough (1980).

Ervin (1975) attempted to develop and assess a systematic method of observation that evaluated short term conductor effectiveness; it was concerned particularly with conductor behaviors that promoted the achievement of short term improvements of musical performance.

Videotapes of 37 conductors whose, level of teaching ranged from junior high to college and whose area of expertise was either choral or instrumental, were evaluated by five judges; the evaluations were arranged to identify the fourteen conductors who had received the highest ratings and the fourteen who had received the lowest ratings. A list of categories of conductor verbal and nonverbal behaviors was developed to discriminate between these two groups. The 28 conductors were analyzed in this way; the resultant data were arranged in a way that permitted stepwise discriminative analysis procedures to be applied to find discriminators. After the discriminators were

determined, five music educators used them in a systematic method of observation to determine if the newly constructed instrument could discriminate between the two groups of conductors.

The category system that was devised was based upon a previous study by Ervin. It consisted of four nonverbal categories (expressive conducting, nonexpressive conducting, looking at group, and not looking at group), and 22 other categories. This system was used as part of the exploratory study of the 28 designated conductors:

> When initial lists were constructed in this [nonverbal] area that could potentially discriminate between conductors, the list was long and contained many high inference items, such as the conductor's dress, appearance of the rehearsal hall, voice inflections, as well as detailed use of specific conducting gestures, baton technique, facial expressions and eye contact. After considering each of these items for their observability and their level of inference for short term improvement of performance, general expressive conducting and eye contact were the only two items that appeared to have promise in a practical instrument. Although specific baton techniques are observable and appear to be related to short term improvement of performance, it would be extremely difficult, if not impossible, to observe and compare different conductors directing different compositions. For this reason baton technique was included as a contributory element to expressive conducting (Ervin, 1975, p. 47).

Various categories were combined to yield an eleven-category system:

Nonverbal Variables

1. Expressive conducting

2. Group eye contact

Verbal Variables

1. Pitch

2. Time

3. Loudness

4. Miscellaneous musical content

5. Reinforcement

6. Discipline

7. Being on task

8. Nonmusical direction

Implied Teaching Function

1. Teaching function

After the stepwise discriminant program was applied to these eleven categories ". . .expressive conducting and group eye contact were so powerful in discriminating between the two groups of conductors that the remaining 9 variables appeared to be relatively insignificant" (Ervin, 1975, p. 60). It was decided to separate the nonverbal categories from the verbal categories, which had the effect of creating a new system.

In 1976, Ostling presented a paper summarizing available research on nonverbal communication which had implications for conductors; he listed almost 100 possible sources, all outside of music. He classified nonverbal behaviors that particularly related to conducting into the following areas: facial and hand expressions, eye contact, body motion, posture, and expression of emotions. He also

stated that emblematic behaviors, illustrators, and affect displays held direct applications to conducting (p. 31).

Thurman (1977) investigated the extent to which the following conductor behaviors were used in rehearsals in terms of time and frequency:

1. verbal communications,

2. statement references to seven elements of choral performance (pitch, style, vocal production, time, text/diction, tone color, and phrasing/dynamics),

3. demonstrations, verbal explanations, and verbal imagery,

4. verbally expressed approval and disapproval,

5. conducting and/or monitoring rehearsal trials, and

6. involvement with one vocal, more than one vocal part, etc.

To develop the instrument, Thurman made verbatim typescripts of two rehearsals from each of five different conductors; each conductor was from a different setting. After the typescripts were analyzed, each conductor was interviewed to validate the typescript and to alleviate any unclear areas. Following this, adjusted typescripts were prepared. Frequency counts were made, which involved identifying, isolating, labeling, and counting the specified events; a stop watch was used to time specific events.

Thurman found that the conductors studied devoted approximately 35 to 40 percent of rehearsal time to verbal

communication. Also, he found that 50 to 60 percent of the verbal communication time was devoted to statements related to the seven elements of choral performance.

Lewis (1977) developed the Choral Conductor Observation System (CCOS) to provide a form of feedback for beginning conductors, which could be used with or without videotape recordings. The basic system consisted of seventeen categories. The category ratings were written on the musical score; poorly executed gestures were circled. Two different coding intervals were employed in this study, which could be seen as a variation of time-sampling: measure and beat.

The study by Matthews (1963) was the primary source used in selecting the gestures to be included in this system (Table 13); conducting texts were also examined. To test reliability and validity of the system, a pilot study was conducted at the University of Nebraska and an experimental study was performed at the University of Texas. "While conducting the experimental study at the University of Texas at Austin, several gestures were demonstrated. . .for which there were no categories previously designated in CCOS" (Lewis, 1977, p. 89). The basic system and the additional categories are shown in Table 17. The capability of CCOS to provide a valid scheme for assessing the students' acquisition of basic skills was shown by a comparison

Table 17

The Choral Conductor Observation System

Category	Definition
O	No movement or extremely unclear gestures: times when the observer cannot discern what is being done by the conductor.
t	Time-beating - right: right hand maintains a clear, steady beat while the left hand is held in an inactive but "ready" position.
tl	Time-beating - left mirroring right: left hand mirrors or beats time along with the right hand.
c	Cueing - right or both: either the right hand alone or both hands are used together to cue a part or section. the cue is easily discernible and does not throw the conductor off-beat. His rhythm and beat pattern continue normally after the cue had been executed.
cl	Cueing - left: the left hand is used to cue a part or section while the right hand maintains a clear, steady beat.
p	Phrasing - right or both: either the right hand alone or both hands are used to indicate breathing places or the flow of the musical line.
pl	Phrasing - left: the right hand maintains a steady beat while the left hand indicates breathing places or the flow of the musical line.
s	Sustain - right or both: both hands or right hand alone indicate that a note is to be held until it is cut off or released by the conductor (i.e., at the end of a section or phrase).
sl	Sustain - left: the right hand maintains a steady beat while the left hand indicates that a note is to be sustained for its full count or held until the conductor cuts it off (i.e., if there is a fermata above the note).

Table 17 Continued

r	Release (cut-off) - right or both: the cut-off or release is executed by the right hand alone or both hands simultaneously. The cut-off is precise and there is no ambiguity as to when the musical sound should stop.
rl	Release (cut-off) - left: the right hand maintains a steady beat while the left hand clearly indicates a cut-off or release for one or several sections of the musical ensemble.
a	Accent - right or both: either the right hand alone or both hands together indicate an emphasis or forcefulness which should be given to a note, word, or syllable. This is usually indicated with a closed fist and/or a forceful gesture.
al	Accent - left: the right hand maintains a steady beat while the left hand indicates emphasis which should be given to a note, word, or syllable.
tc	Tempo change: the beat pattern reflects a change in tempo which is indicated in the score. This change may be indicated either with both hands or with only the right hand while the left hand maintains a "ready" position. This change is easily detected and can be followed by the performing group.
d	Dynamic variation: the left hand indicates through gestures a crescendo, decrescendo, or other dynamic variation while the right hand simultaneously increases or decreases the size of the beat pattern. (These must be executed simultaneously to be correct).
pb	Preparatory beat: the right hand indicates when the ensemble is to inhale and when to attack the first note of a piece or the beginning note of a section while the left hand maintains a "ready" position; or both hands may indicate this together. (This preparatory beat should indicated the dynamics, style, and tempo of the piece or section which follows).

Table 17 Continued

| ap | Attention position: wrists are held in a slightly "cocked" position while the forearms are held at an upward and inward angle. The palms of the hands are facing ther floor at approximately eye-level and the fingers are held relatively close together in a graceful position. This position calls for the attention of the group and allows the conductor to survey the ensemble and fix in his mind the style and tempo of the next piece before giving the preparatory beat. |

NOTE: An unclear gesture or one which needs to be improved will be encircled to denote poor execution of the gesture (i.e., ⊗).

Additional Categories Developed During the
Experimental Study at the University of Texas at Austin

(tt)	Subdivided beat
(tcl)	Subdivided beat with Left hand cue on second half of the beat (other categories can be combined for subdivisions as needed.
d	Sudden dynamic change, i.e., subito piano, sfz, etc.
dc	Dynamic cue - the section entering on this beat sings at a dynamic level which is different from what has previously been sung.
cb	Cue with both hands.
t̄	Any category with a bar over it signifies that that gesture should be performed tenuto.
dt	Change in dynamics indicated only by a change in the size of the beat pattern.
△	Elongated beat - t t△ - conducted in a 3 pattern.

(Lewis, 1977, pp. 56-58, 89).

of grades derived from the CCOS with grades assigned by the instructor.

Lewis concluded that basic conducting gestures could be identified and coded. The CCOS was rated very highly as an additional feedback mechanism by beginning conducting students. Lewis (1978) also recommended that CCOS could be used in a variety of research situations.

Roshong (1978) developed an observational instrument that would inventory the nonverbal communication of conductors; he also investigated whether relationships existed between the observed nonverbal behavior and the nature of the task being performed at the time the behavior occurred. In addition, he attempted to account for the intensity of these behaviors.

The systematic search for patterns of conductor nonverbal behavior led Roshong to examine the nature of the band rehearsal itself. He identified four basic activities exhibited by conductors aside from managerial duties (p. 34): 1) starting the ensemble, 2) stopping the ensemble, 3) instructing the ensemble while stopped, and 4) sustaining or allowing the music to continue. The instrument itself was designed to meet the following criteria (p. 40):

1. the categories would be complete but not so minute that the training of the observers would require an expansive amount of time,

2. each category would have a corresponding intensity scale, and

3. the instrument would provide a system for placing the behaviors in sequence.

Three nonverbal codes were studied by this system: 1) kinesic (facial expression, eye contact, and conducting gestures and movements), 2) proxemic (through body movements), and 3) vocalic/paralanguage (audible forms of nonverbal communication); although not noted by Roshong, the proxemic channel as defined in the study would have to be considered a proxemic/kinesic blend. These three nonverbal codes were placed into six categories; each category and its respective sub-categories utilized a five-point scale with bipolar descriptors to account for intensity. A seventh category was added to study the sequence of events. This final system is shown in Table 18.

The rehearsals of three Ohio college band conductors were videotaped; these tapes were edited using very advanced techniques to yield 36 episodes representing three examples from each of the conductors for each of the four basic conductor functions that were cited. Each episode was repeated seven times, once for each category. Three observers were used, all of whom were experienced conductors. They were trained in the use of the system by viewing a training tape, discussing the categories, and practicing marking the form during the viewing of the

Table 18

Conductor Nonverbal Observation Form

Category			Coding Procedure	
FACIAL EXPRESSION				
Approval		Mild	1--2--3--4--5	Intense
Disapproval		Mild	1--2--3--4--5	Intense
CONDUCTING GESTURE				
Right Hand		Relaxed	1--2--3--4--5	Very Tense
Left Hand		Relaxed	1--2--3--4--5	Very Tense
Mirror Hands		Relaxed	1--2--3--4--5	Very Tense
EYE CONTACT				
Group	F - G	Encouraging	1--2--3--4--5	Restrictive
Individual	F - G	Encouraging	1--2--3--4--5	Restrictive
Music/Other		Flick --	Gaze	
BODY MOVEMENT				
Toward		Small Movement	1--2--3--4--5	Large Movement
Away		Small Movement	1--2--3--4--5	Large Movement
VOCAL QUALITY				
Speech		Comfortable	1--2--3--4--5	Abusive
Speech over music		Sustaining	1--2--3--4--5	Interuptive
Singing over music		Sustaining	1--2--3--4--5	Corrective
SILENCE		Relaxed	1--2--3--4--5	Distressed

SEQUENCE OF EVENTS

A. ___ ___   G. ___ ___
B. ___ ___   H. ___ ___
C. ___ ___   I. ___ ___
D. ___ ___   J. ___ ___
E. ___ ___   K. ___ ___
F. ___ ___   L. ___ ___

(Roshong, 1978, p. 87)

training tape. Inter-observer reliability was determined by two different formulae. The first, which was used by Yarbrough (1973) yielded an estimate of .79; the second, the Scott Formula, yielded an estimate of .77.

Among the results, Roshong found the following (pp. 79-84):

1. The most often marked categories were movement toward the ensemble, looking at the music, and facial approval.

2. 74 percent of all facial expressions were approval behaviors.

3. Right hand gestures occurred more times and with greater intensity than did the left hand and mirror image gestures.

4. All subjects demonstrated more occasions of gazing at the music during starts and stops than any other eye movement. Sustaining and Instructing events had the highest occurrence of eye contact with the group. Gazing at individuals received the smallest number of tallies.

5. 77 percent of all body movement was toward the group.

6. Most starting events began with speech, then eye contact with the group followed by the conducting gesture; stopping events generally demonstrated the reverse.

7. There was facial approval and forward movement

during starting, stopping and sustaining events;
there was facial disapproval, eye contact with the
group, and movement away, during instruction.
Roshong also concluded that the instrument met the goals
that had been set for it.

Summary

Research in nonverbal communication has begun only
recently. Harrison and Knapp (1972) state that modern study
in this field started around the time of World War II.
Research activity in education began much later; Charles
Galloway was one of the first researchers to investigate the
use of nonverbal behaviors in the classroom in a systematic
way. His work began in the 1960's and served as an impetus
to a great body of later research. Nonverbal research in
music began yet later. Dorman (1978) states that in the
field of music, research using and developing observational
instruments began, for the most part, in the 1970's; most
of these early observation systems did not account for
nonverbal behaviors in a systematic or complete manner.
Daellenbach (1968, 1970a, 1970b) was among the first to
investigate nonverbal techniques in music education in an
organized fashion. Other particularly important research in
this field includes: Yarbrough (1973, 1975, 1976, 1979),
Ervin (1975), Ostling (1976), Thurman (1977), Lewis (1977,
1978), and Roshong (1978). Although this research has been
extremely important in the study of the nonverbal behaviors

of conductors, little research exists which places these nonverbal activities within a complete and consistent set of nonverbal communication definitions.

CHAPTER III

PROCEDURES

Introduction

The purpose of this research was to develop an observation instrument to classify, within a stated philosophical framework, the nonverbal communication behaviors of conductors of musical ensembles; the instrument was titled the Music Conductor Observation Instrument (MCOI). Therefore, all conductor behaviors that were included in the various categories of this system had to be:

1. viewed as being sent intentionally by the conductor or viewed with potential for perceived intent by the receiver, and/or

2. viewed as having a shared meaning between the conductor and performer or having the potential for shared meaning.

The basic categories of this system, and therefore the behaviors themselves, conformed to the seven nonverbal communication channels as proposed by Burgoon and Saine (1978): kinesics, physical appearance, vocalics, haptics, proxemics, chronemics, and artifacts. This particular

channel-framework was employed since it best aligned with the definition of nonverbal communication that has been established.

Through an examination of the seven nonverbal channels, it was seen that a number of the behaviors in certain channels remained relatively static over a fairly long period of time--perhaps for the entire rehearsal--while a number of behaviors change frequently. Examples of the static areas are physical appearance and artifact use; examples of the nonstatic areas are kinesics (body movement, facial expression, gesture, arm and hand movement, and visual behavior), haptics, proxemics, and vocalics (including body generated sounds). Chronemics is unique and is a cross between these two concepts; therefore it was considered separately. Also, because of its unique nature and great complexity, it was considered only in a limited way in this study.

To allow for the distinctions between static and nonstatic behaviors, two different types of measurement devices were developed as separate parts of the Music Conductor Observation Instrument (MCOI). The first area, nonstatic behaviors, is investigated through use of a multi-category, time-sampling instrument, similar in construction to the Rehearsal Interaction Observation System (RIOS) of Erbes (1972). The second area, static behaviors, is classified by using a checklist-type of instrument.

Preliminary Procedures Development

Several steps were taken to assure that the instrument was of reasonable complexity and aligned with the philosophical framework outlined earlier. First, the research literature was examined to determine what existing observation systems were relevant to this research; these instruments were then thoroughly evaluated. Second, the researcher carefully studied a videotape recording of a rehearsal of a well-known college wind ensemble conductor; this tape was viewed many times. During the early repetitions, global assessments were made of the conductor's nonverbal activities; following the initial evaluations, the tape was reviewed repeatedly, each time focusing upon a certain communication channel, such as the face alone.

Next, the following conducting texts were examined for behaviors that were relevant to this study: Green (1969), Rudolf (1950), McElheran (1966), Scherchen (1933), and Grosbayne (1973). The texts were selected from a list by McGinnis (1978); McGinnis is a nationally known conductor and teacher of conducting.

From these three activities, the basis of the instrument's development was established. Lists of relevant conductor behaviors were developed, organized according to the seven nonverbal communication channels. Also, these steps were undertaken: 1) to determine which communicative conducting behaviors were deemed important by selected authorities in the field of conducting; 2) to determine

which nonverbal behaviors of conductors were included in existing observation systems; and 3) to evaluate existing instruments to find behavior categories that aligned with the philosophical slant of this instrument.

The next stage of the instrument development followed a basic procedure used by Daellenbach (1970b) in developing an observation system; his system was intended to study the learner as its primary purpose. His basic procedures, in very simple terms, were:

1. videotape the subjects, who were drawn from five different age groups (pre-school to college) and four different teaching environments (private lessons to group rehearsal). From one to six subjects represented each category--seventeen total.

2. All preliminary videotape recordings were viewed, making notes on file cards of behaviors in evidence. Examples are: "Student is standing, holding violin." "Student walks while playing" (p. 50). All behaviors, verbal and nonverbal were included.

3. After intense review, the cards were grouped according to similarity of observed behavior.

4. The unedited videotapes were inspected to identify specific behaviors that would be considered for inclusion in the tentative category system. At this stage, the tentative system was complete.

5. Interviews were made with authorities in allied disciplines to further identify and classify behaviors and to determine appropriate terminology.

6. Duplications within the category system were eliminated.

7. It was determined that the instrument was too complex and the process was repeated using a broader classification framework.

Daellenbach undertook construction of the behavioral categories without preconceptions; this was not totally the case with the construction of the MCOI. A specific definition and framework of nonverbal communication had to be detailed for the purposes of this study and to avoid the complexity problem encountered by Daellenbach. Therefore a basic philosophical framework existed prior to instrument development. However, the construction of the categories and sub-categories was made completely from actual behavior occurrences. The behaviors were grouped according to similarity of observed behavior and classified according to the established framework. The behavior lists drawn from conducting texts and existing instruments served as a refining and evaluative device.

Data Collection

First, the subjects to be videotaped were selected. The conductors were chosen from different performance settings (instrumental and choral), and from different age

orientations (high school, college/university, and professional); conductors of elementary ensembles were not considered for this study since their primary orientation is not usually toward expressive conducting. The sample consisted of fifteen conductors representing the following different classifications: three high school choral, four high school instrumental, three college/university instrumental, three college/university choral, and two professional conductors conducting in clinic or university situations; the professional conductors were conducting in clinic or university situations for reasons of practicality.

Personal contact was made with many conductors in the New Brunswick, New Jersey area by the researcher in an attempt to solicit participation in the study. Having received commitments from the conductors, arrangements were made for the researcher to videotape one rehearsal of each of the given conductors; in agreeing upon a specific rehearsal to be videotaped, the conductors were told that a normal rehearsal near to the time of a concert was the optimum choice. In all cases except one, the researcher videotaped a rehearsal of the conductors being studied using a Panasonic portable VHS cassette recorder, model NV-8410, and a Panasonic (Newvicon) color video camera, model WV-3150; a portable power source was available but was used in only some cases. The remaining conductor specified that he be videotaped by technicians at his own university. The researcher wrote to the conductor asking for specific camera

angles and explained the basic orientation of the study. Reel-to-reel, black and white recordings were sent to the researcher as the other university's VHS recorder had failed to operate properly and the technicians substituted the reel-to-reel format. The researcher dubbed the reel-to-reel recordings onto cassette with only a minimal loss of quality.

During the videotaping sessions, global assessments were made by the researcher relative to room arrangement, background, use of podium, lighting, music stand, personal appearance of the conductor, and artifact use. Notes were made for future reference.

The videotapes were viewed five times initially by the researcher, each time focusing upon a certain channel or channels, which were: gaze/facial expression, posture/body movement/proxemic behavior, right hand, left hand, and vocalics. Although the length of the actual recorded rehearsals ranged from 48 to 120 minutes, only 45 minute samples were viewed each time from each tape. The samples were unedited and were selected at random, except in one case where the beginning of the tape was not acceptable due to a technical problem (lighting), which was corrected near the middle of the rehearsal. The tapes were viewed on a nineteen-inch color monitor.

Each of the detected behaviors was noted on index cards, following the suggestions offered by Galloway (1962) for writing narrative descriptions. Tapes were replayed

when needed to assure clarity, to avoid confusion, and to make refinements.

The index cards were sorted and grouped according to similarity of behavior and categorized under the respective nonverbal channel; each channel was considered separately. By grouping behaviors, a basic category system was devised. This basic category system was compared with the behavior lists drawn from the conducting texts and from the existing instruments; thus, the system was further refined, particularly in the definition of categories.

The videotapes were reviewed in order to identify specific behaviors that should be included in the instrument, to eliminate duplications, to clarify category definitions, and to make other general refinements as warranted. At this point, the tentative system was complete.

Authorities were interviewed to evaluate the instrument in terms of its inclusion of appropriate conductor behaviors and its completeness. The authorities included: two university conductors who had been videotaped and two university music education specialists. Upon their recommendations and further review of the videotapes, the system was refined further, at which point, the instrument, Music Conductor Observation Instrument (MCOI), was in its final form.

Development of Instrument Format

Time-sampling was to be employed for the first part of the instrument; a five-second coding interval was used; the length of the coding interval was considered carefully. Intervals of ten seconds or longer were rejected, as it was felt that not enough behaviors were sampled. Intervals shorter than five seconds seemed to interrupt the flow of the tape. A pilot test was conducted to evaluate various coding intervals of differing length. Considering all of the factors, the five-second interval seemed best suited for this study. A special coding tape had to be prepared, which was completed by linking two video-cassette-recorders (VCR), one for playback and one for recording. The playback unit was a Panasonic model NV-8410 VCR; the recording unit was a Panasonic model NV-8200 VCR. The editing was performed by the researcher based upon consultations with technicians from the Office of Television and Radio at Rutgers University. The tape was edited into a number of sections: a thirty-second rehearsal segment to serve as an intro-duction and orientation, a five-second pause with a voice cue starting the coding period, a five-second rehearsal segment, and a two-second pause to allow for coding. After the two-second pause, another five-second activity segment followed, then another two-second pause, with this procedure continuing until the end coding segment. The entire procedure was repeated a total of three times, each time with a different conductor. The three conductors were: a

high school band conductor, a professional conductor conducting a university orchestra, and a college choral conductor. Approximately seven minutes of rehearsal activity for each conductor was represented on the coding tape, which resulted in a total approximate length of 26 minutes, including pauses and orientation segments. In essence, the two-second pauses served only to interrupt the action; the seven-minute rehearsal sections were presented in their entirety.

The stop-action technique was employed for several reasons. First, because of the great importance of visual cues, the observer's attention had to directed at the television monitor at all times; the pause allowed the observer's focus to be directed away from the monitor to mark responses without losing orientation. The pause also helped to solve the attention-shift problem that was detected in early tests of the instrument. Second, the pause defined the coding interval precisely, which helped reliability, and which was an advantage to the researcher in being able to cross-reference observations between different channels. Third, the pause allowed the observer more time in which to make a decision regarding his rating. Fourth, the pause helped to isolate the sampled behavior in a very specific way.

Special observation forms were developed onto which the observer's ratings were marked. The forms were very similar to those used by Erbes (1972) except that separate columns

were provided for periods of performance and nonperformance. Separate forms were made for each of the seven categories. These forms are shown in Appendix A.

A training manual was constructed, which is shown in Appendix B. The manual consisted of the following sections: introduction, objectives of the manual, an overview of the MCOI, category definitions and guidelines, and coding procedures and recommendations. To accompany the manual, a special videotape was made in order to provide concrete examples of the behaviors of each sub-category. The examples, with three exceptions, were taken from the rehearsal tapes and edited with appropriate voice labels onto a master tape. The three exceptions were staged by the researcher.

Determination of Inter-Observer Reliability

The purpose of the next section of this study was to attempt to determine the inter-observer reliability of the first section of the instrument, that which accounted for nonstatic behaviors. Since the second section of the instrument, that dealing with static behaviors, was a checklist-type of instrument almost totally unopen to interpretation, it was decided that a determination of inter-observer reliability was not warranted.

A short pilot project was conducted to determine a basic orientation for obtaining reliability estimates, and to obtain feedback for category definitions, coding

procedures and guidelines, the training manual and accompanying tape. The observer, a former music teacher, was instructed in the use of the MCOI, and then coded the specially prepared tape. This procedure was repeated for each of the seven categories and took place over a five-day period, the observer never coding more than two categories on any particular day.

Reliability estimates for this and following stages of the research were derived by comparing the codings of the observer with the codings of the developer of the instrument through use of the Scott Formula.

The Scott Formula is commonly used to determine reliability in this type of research. Ned Flanders (1968) states that "Scott's method is unaffected by low frequencies, can be adapted to per cent figures, can be estimated more rapidly in the field, and is more sensitive at higher levels of reliability" (p. 161). The formula is:

$$\pi = \frac{Po - Pe}{1 - Pe}:$$

> . . .where Po (observed percent agreement) represents the percentage of judgements on which the two analysts agree when coding the same data independently; and Pe is the percent agreement to be expected on the basis of chance. It is the ratio of the actual difference between obtained and chance agreement. It can be roughly interpreted as the extent to which the coding reliability exceeds chance (Scott, 1955, p. 323).

The Scott Formula was first reported in 1955:

> It was developed specifically for standard survey research coding operations, but it can be used in a wide variety of research situations to measure the reliability of classifying a large number of

responses into nominal scale categories. The requirements are that the categories be mutually exclusive and that observations be duplicated on a random sample of the total set of responses being studied (Scott, 1955, p. 321).

Three graduate students at Michigan State University agreed to take part in the reliability testing of this instrument; two were graduate students in conducting and one was a doctoral candidate in musicology who possessed a strong background in conducting. The training manuals were sent to Michigan State, but due to a delay in the mail, the manuals were not received in time to be forwarded to the participants. Therefore the participants had no prior orientation into the system.

A six-hour period was scheduled for training and coding. However because one of the subjects was over an hour late, the session was shortened to less than five hours, necessitating the reduction of the training periods to only ninety-minutes total. First, the basic framework of the MCOI was explained briefly. Each of the categories was discussed separately, explaining the behaviors followed by a viewing of the demonstration tape. A practice coding was made for the first category only, due to the time limitation. After this very brief orientation process, the participants coded the observation tape. Reliability was estimated by the same procedure that was discussed earlier.

Field Trial

The rehearsals of three high school and three college/university instrumental conductors were videotaped and analyzed by the researcher using the newly developed instrument. A thirty-minute sample of each was selected at random from the unedited rehearsal tapes and was prepared in the same manner as was the reliability coding tape. A thirty-second orientation period was followed by a pause; the thirty-minute sample which followed was interrupted every five seconds by a two second pause. The tapes were then viewed and coded using the MCOI--Form I.

Part II of the MCOI was marked during the taping session with the exception of the timing/chronemic section which was derived from the videotapes. Several items had to be estimated, since certain variables were added or changed after the tapings took place.

This field trial was of a descriptive nature; no statistical comparisons were made relevant to the content of the rehearsals studied. Specific concerns included:

1. Are there conductor behaviors that are found which are not described by the instrument?

2. Are there practical problems caused by the videotape procedures?

3. Is the instrument practical to use?

CHAPTER IV

RESULTS

Instrument Development

The purpose of this study was to develop an instrument designed to classify observed nonverbal communication behaviors made by conductors of musical ensembles. These behaviors were to be classified according to the seven nonverbal communication channels as outlined by Burgoon & Saine(1978).

Several steps were taken to assure from the beginning that the instrument was of reasonable complexity and was aligned with the philosophical framework as stated earlier. First, a videotape of a well-known college wind ensemble conductor was thoroughly studied to evaluate the feasibility of using the Burgoon/Saine framework, and to identify relevant behaviors.

Following a detailed examination of the research literature and the listing of behaviors and concepts derived from existing instruments, a number of conducting texts were examined for behaviors that were relevant to this study. Very few behaviors were found other than physical conducting techniques, such as cuing, beat patterns (expressive and totally metronomic), and certain expressive conducting techniques (gesture, size and style of beat). The behavior

listings were classified according to the Burgoon and Saine system.

Following these initial steps, the actual categories and sub-categories of the two parts of the instrument were developed. The basic procedure was adapted from that used by Daellenbach (1970b), and considered the guidelines for the writing of narrative descriptions as stated by Galloway (1962). It was felt that two initial procedures--close examination of existing instruments and listing of relevant behaviors from selected conducting texts, along with the parameters established resulting from the structure of the Burgoon/Saine framework--would account for the complexity problem that was noted by Daellenbach.

The rehearsals of fifteen conductors were videotaped. The taping procedures were quite successful with two exceptions: 1)in three cases, the lighting was not totally adequate, although the results were still satisfactory; 2)ideal camera angles were sometimes difficult to achieve with the choral conductors because of the performers' need to stand--the camera had to be placed slightly to the side in some cases. As was detailed earlier, one of the subjects was not taped by the researcher. Although this presented no major problems, the quality of that tape was not ideal, and the researcher was not able to make the global assessments that were made during the taping sessions for the other subjects. Overall, the videotape recording was quite satisfactory due in part to the sophistication of the

equipment combined with its simplicity of use and portability.

45-minute samples were drawn from the raw rehearsal tapes; no editing was made within the samples. 675 minutes of rehearsing was represented on the sample tapes--1100 minutes on the raw tapes. Initially, each sample tape was viewed five times, each time focusing upon a certain communication channel or channels.

Detected conductor behaviors on the sample tapes were written on index cards--a total of 852 separate behaviors were noted on the cards, which represented the total behaviors from all of the seven channels (gaze - 123, facial expression - 166, posture - 100, proxemic - 106, right hand - 174, left hand - 126, and vocalics - 57). In addition, global assessments were made during the taping sessions. The cards were grouped according to similarity of behavior to form the various categories and sub-categories of the system; the global assessments and observations were considered also. The behavior list drawn from the examination of conducting texts and previously developed systems were evaluated further in light of the newly developed categories, and some modifications were made. At this time, a tentative instrument was complete.

Four authorities, two conductors and two music education specialists, were interviewed after they had examined the instrument. Three of the authorities offered no criticisms; the fourth made several recommendations

which included altering the vocalic category by eliminating an "idiosyncratic" sub-category. At this point the instrument was complete; category definitions were further revised prior to completion of the training manual. Appendix C shows the completed instrument.

Determination of Inter-Observer Reliability

After preparation of the necessary materials, demonstration tape, coding tape, observation forms, and training manual, a short pilot study was undertaken to:

1. evaluate category definitions as provided in the training manual;

2. evaluate coding procedures and guidelines;

3. evaluate in general the training manual and accompanying tape; and

4. determine the inter-observer reliability between the observer and the developer of the system to identify possible problem areas.

Table 19 shows the reliability figures derived from this part of the study, which were deemed acceptable by the researcher; all exceeded Heger's (1969) criterion of .60. The Scott Formula was used to determine reliability. A number of category definitions were expanded based on evaluation provided by the observer. Also a number of sections were expanded in the training manual. The basic coding procedures and guidelines were judged successful;

Table 19

Inter-Observer Reliability--Pilot Study

Category	Inter-Observer Reliability
1	.74
2	.67
3	.76
4	.97
5	.62
6	.84
7	.65
Mean	.76

the stop-action technique was found to be of particular value, especially in establishing the coding interval and defining the specific behavior that was being sampled.

Three graduate students at Michigan State University agreed to take part in the reliability testing of the MCOI. Each of their codings was compared to the codings of the developer of the system; the Scott Formula was employed to estimate inter-observer reliability for each category and each observer. These figures are represented in Table 20.

The obtained estimates, with three exceptions, exceeded the requirement established by Heger (1969, pp. 11-13) of .60; all of the averages exceed this figure. However, there were a number of problems associated with this part of the study, and considering the severity of the problems, the reliability estimates that were obtained seem to be quite satisfactory. First, the training session was much too short. As was stated earlier, the six-hour period that had been scheduled for training and coding was actually less than five hours due to a number of factors. Also, the observers were unable to study the training manual prior to the coding session due to its delay in the mail. These two factors resulted in the observers having almost no training prior to actually having to code the reliability tape. Second, fatigue was a major factor. It was quite unrealistic to expect the observers to code all seven categories on one day with any kind of success. The lower

Table 20

Inter-Observer Reliability

Category	Observer Percentages			
	A	B	C	Mean
1	.79	.65	.68	.71
2	.67	.70	.80	.72
3	.73	.83	.79	.78
4	.87	.91	.96	.91
5	.43	.70	.76	.70
6	.58	.82	.71	.70
7	.79	.43	.61	.61
Mean	.69	.72	.76	.72

reliability estimates are seen in those categories that were coded late in the day.

Field Trial

A field trial was conducted to evaluate a number of concerns relating to the use of the MCOI. Specific concerns included:

1. Are there conductor behaviors that are found which are not described by the instrument?

2. Are there practical problems caused by the videotape procedures?

3. Is the instrument practical to use?

The rehearsals of three high school and three college/university instrumental conductors were videotaped and analyzed using the MCOI. Tables 21 through 27 illustrate the data gleaned from Part I of the MCOI. Although the small size of the sample makes any generalizations of this data suspect, a number of observations can be made. In category 1 (gaze), the most prevalent behavior with all but two of the conductors was looking at the music (#1.5); the two conductors who were exceptions had the scores memorized and looked at the music only on certain occasions. Sub-category #1.4 (aggressive stare) had the lowest behavior occurrence of all of the gaze sub-categories. In category 2 (facial expression), neutral expression (#2.1) was clearly the most commonly observed behavior; the range was 70.1% to 84.6%. Neutral activity

(#3.1) was also the most often observed behavior in category 3 (posture/body movement); behavior percentages ranged from 50.8% to 67.4%. In category 4 (proxemic), neutral activity (#4.1) was the most commonly observed behavior, where the percentages ranged from 88% to 98.3% of all behaviors coded in the category. This would seem to further point out the conductor's firmly established territory as was discussed in Chapter I; traditionally the conductor stands, or occassionally sits, in front of the ensemble as he/she performs his/her function. The high percentages found in this sub-category seem to support this view. In categories 5 and 6 (right and left hand), the most commonly observed behaviors were the sub-categories relating to the maintaining of tempo (#5.2 and #6.2). The most commonly observed behavior in the vocalic category was neutral tone of voice (#7.1), where the range of percentages was 37.3% to 64.4%. The data will be discussed in greater detail in the following chapter.

Table 28 shows the data gathered from Part II. Several of the responses on Form 2--size of ensemble, podium (dimensions, construction, condition), and baton length--were estimated due to the fact that those variables were not considered when the videotaping was performed; those items were added or changed after the taping date. The data will be discussed further in the following chapter.

Table 21

MCOI Category Percentages--Field Trial
Category 1: Gaze

Sub-Cate-gory	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
1P	13.8	30.0	20.8	12.8	9.5	15.4
1N	5.8	9.7	10.7	8.6	7.5	9.6
2P	15.6	6.8	26.6	15.0	5.5	16.0
2N	14.1	11.6	13.7	9.8	6.3	9.8
3P	2.3	16.7	1.5	3.4	1.4	1.4
3N	.6	3.7	1.8	9.2	1.2	2.3
4P	.3	0.0	0.0	.6	0.0	1.1
4N	.3	0.0	0.0	.3	.3	2.0
5P	31.4	0.0	.6	29.0	33.7	31.8
5N	12.4	.3	7.6	8.6	23.3	8.3
6P	2.3	11.3	9.4	.6	5.5	.6
6N	1.1	9.9	7.3	2.1	5.8	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

P = Periods of Performance
N = Periods of Nonperformance

Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

Table 22

MCOI Category Percentages--Field Trial
Category 2: Facial Expression

Sub-Category	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
1P	47.1	50.0	55.6	52.7	48.4	57.0
1N	23.0	23.1	29.0	25.7	35.6	25.2
2P	13.9	12.9	1.8	3.6	3.5	3.1
2N	3.2	1.7	0.0	0.0	.6	.3
3P	1.4	0.0	.6	.3	0.0	0.0
3N	.3	0.0	.3	0.0	1.0	0.0
4P	.9	4.3	1.5	.9	1.4	0.0
4N	2.0	.3	3.5	1.2	3.5	3.4
5P	2.0	2.0	1.2	6.0	1.4	4.6
5N	3.8	.6	.3	3.9	1.4	5.5
6P	.6	1.1	.6	0.0	.3	0.0
6N	.3	0.0	1.2	2.4	.6	0.0
7P	0.0	.3	.3	.6	.9	0.0
7N	1.5	3.7	4.1	2.7	1.4	.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

P = Periods of Performance
N = Periods of Nonperformance

Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

Table 23

MCOI Category Percentages--Field Trial
Category 3: Posture/Body Movements

Sub-Category	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
1P	39.7	35.1	37.0	37.3	28.7	45.8
1N	17.4	16.2	17.1	13.5	30.8	21.6
2P	15.0	19.8	13.2	2.1	5.5	8.3
2N	2.4	1.2	.3	0.0	.6	.9
3P	1.8	3.2	3.5	0.0	7.3	4.9
3N	.6	.3	.3	0.0	.9	.3
4P	.9	.9	2.1	8.2	6.1	3.2
4N	4.1	8.9	3.8	16.2	4.7	4.6
5P	.3	0.0	.6	0.0	0.0	0.0
5N	.3	.6	.6	.3	.6	0.0
6P	3.5	0.0	.6	1.8	0.0	0.0
6N	8.2	2.9	10.6	3.7	2.9	4.6
7P	3.8	4.9	4.4	13.5	8.1	2.9
7N	2.0	6.0	5.9	3.4	3.8	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

P = Periods of Performance
N = Periods of Nonperformance

Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

Table 24

MCOI Category Percentages--Field Trial
Category 4: Proxemic

Sub-Category	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
1P	61.3	63.9	56.2	59.9	53.8	58.3
1N	31.0	34.4	31.8	37.3	39.3	32.5
2P	0.0	0.0	0.0	1.2	0.0	6.0
2N	0.0	0.0	0.0	0.0	.3	1.4
3P	0.0	0.0	2.5	0.0	0.0	.3
3N	0.0	0.0	6.1	0.0	0.0	.6
4P	0.0	0.0	0.0	0.0	0.0	0.0
4N	0.0	0.0	0.0	0.0	0.0	0.0
5P	0.0	0.0	0.0	0.0	.6	0.0
5N	.3	.9	3.4	.9	.3	.9
6P	3.3	0.0	0.0	0.0	0.0	0.0
6N	4.1	0.0	0.0	0.0	5.7	0.0
7P	0.0	0.0	0.0	0.0	0.0	0.0
7N	0.0	.9	0.0	.9	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

P = Periods of Performance
N = Periods of Nonperformance

Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

Table 25
MCOI Category Percentages--Field Trial
Category 5: Right Hand

Sub-Cate-gories	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
1pP	0.0	0.0	0.0	0.0	0.0	0.0
1pN	6.6	12.9	14.9	1.8	9.0	2.5
1aP	0.0	0.0	.3	0.0	0.0	0.0
1aN	7.8	3.0	6.6	12.5	11.9	10.3
2P	29.9	30.1	38.8	43.9	41.1	52.9
2N	.9	0.0	.9	1.5	5.5	3.6
3H	1.5	.6	0.0	0.0	0.0	.3
3M	3.9	8.8	2.1	.3	1.5	1.5
3L	5.1	4.1	3.9	2.7	2.3	.3
4H	.3	.6	0.0	0.0	0.0	.3
4M	2.4	.3	.6	0.0	.3	.3
4L	3.0	2.7	1.2	0.0	2.0	2.2
5H	.6	0.0	0.0	.6	0.0	0.0
5M	.3	0.0	.3	.9	0.0	0.0
5L	1.5	.6	.6	4.5	0.0	0.0
6H	.9	.8	0.0	0.0	.3	.6
6M	8.1	2.5	1.2	1.5	.3	.6
6L	7.5	10.4	3.6	1.5	2.9	3.1
7P	1.2	4.1	4.2	6.6	1.4	1.2
7N	0.0	0.0	0.0	0.0	0.0	0.0
8P	0.0	0.0	0.0	0.0	0.0	0.0
8N	.3	0.0	2.1	1.5	0.0	0.0
9P	0.0	0.0	4.5	0.0	5.4	2.9
9N	7.2	7.1	9.0	6.2	6.2	8.9
10	11.0	11.4	5.2	14.0	9.9	8.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

P = Periods of Performance   Intensity codings
N = Periods of Nonperformance   H = High Degree
p = Passive   M = Medium Degree
a = Active   L = Low Degree
Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

Table 26

MCOI Category Percentages--Field Trial
Category 6: Left Hand

Sub-Cate-gory	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
1pP	7.7	12.7	13.9	24.1	15.6	16.9
1pN	12.4	13.6	20.3	13.6	14.1	8.7
1aP	5.0	5.2	15.2	0.0	0.0	.6
1aN	8.3	2.7	6.0	5.6	6.9	9.9
2P	18.3	14.8	13.6	22.9	21.6	25.0
2N	.6	0.0	.3	.6	2.3	1.5
3H	0.0	.3	0.0	0.0	0.0	.3
3M	1.2	1.5	.3	0.0	.6	.3
3L	4.1	6.1	.9	.3	2.0	2.1
4H	7.1	4.2	5.7	3.7	3.4	4.8
4M	2.4	.9	.6	.9	.3	.6
4L	1.2	2.7	2.5	.6	1.7	.3
5H	1.2	.6	0.0	.6	0.0	.3
5M	2.4	2.7	1.3	.6	.3	2.7
5L	3.8	9.1	5.1	.6	1.7	1.8
6P	3.5	3.0	1.3	4.3	1.4	3.3
6N	0.0	0.0	.3	0.0	0.0	0.0
7P	.9	0.0	1.3	0.0	.6	0.0
7N	.6	0.0	.3	.9	.3	.9
8P	5.6	.3	1.6	4.3	7.8	8.1
8N	8.3	11.8	6.0	7.8	13.5	6.6
9	5.4	7.8	3.5	8.6	5.9	5.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

P = Periods of Performance   Intensity Codings
N = Periods of Nonperformace   H = High Degree
p = Passive   M = Medium Degree
a = Active   L = Low Degree

Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

Table 27

MCOI Category Percentages--Field Trial
Category 7: Vocalics

Sub-Category	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
1P	3.1	.8	2.2	4.2	3.1	3.5
1N	56.3	63.6	55.1	51.0	51.8	33.8
2P	2.3	3.3	.7	2.1	0.0	5.5
2N	8.6	2.4	1.5	14.0	4.1	13.1
3P	0.0	0.0	0.0	0.0	0.0	0.0
3N	2.3	1.7	8.0	3.5	2.0	2.8
4P	0.0	0.0	0.0	1.4	7.1	6.9
4N	7.0	9.9	1.5	2.1	4.5	1.4
5P	0.0	0.0	0.0	0.0	0.0	0.0
5N	1.6	0.0	.7	0.0	1.5	0.0
5P	0.0	0.0	.7	4.2	7.1	2.1
5N	8.6	0.0	0.0	1.4	11.1	12.4
6P	0.0	.8	0.0	0.0	0.0	2.1
6N	0.0	.8	.7	0.0	0.0	.7
7P	0.0	0.0	0.0	0.0	0.0	0.0
7N	8.6	16.5	28.3	13.3	7.1	9.7
S	1.6	0.2	.6	2.8	.6	6.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
%N	33.5	31.8	37.4	36.2	45.6	34.7
%P	66.5	68.2	62.6	63.8	54.4	65.3

NOTE: The upper-section percentages do not consider the "Performance Only" (/) Category.

P = Periods of Performance
N = Periods of Nonperformance

Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

Table 28

MCOI Form II Behaviors--Field Trial

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1. BACKGROUND INFORMATION
   A. Type of ensemble: B. Size of ensemble:(approx.)
      Chorus____   A-80   D-60
      Band A,B,C,D,E,F   B-44   E-55
      Orchestra____   C-51   F-50

2. ROOM (SETTING)
   A. Condition   B. Floor
      Neat A,B,C,F   Flat A,B,D
      Cluttered D   Risers C,E,F
      Neutral E

   C. Lighting
      Excellent A,D,E
      Very Good B
      Good____
      Fair C,F
      Poor____

3. BACKGROUND
   A. Color   B. Activity(pattern)
      Dark A,B,C   Static B
      Light____   Noisy D,E
      Neutral F   Mixed A,C,F
      Mixed D,E

4. PODIUM/PODIUM AREA
   A. Use   B. Dimensions
      Yes A,B,C,F   Varied
      No D,E

   C. Construction   D. Condition
      Unfinished F   Excellent B
      Painted C   Very good C,F
      Carpeted____   Good____
      Mixed ____   Fair ____
                                    Poor ____

NOTE: Items 4.B-D could not be determined for
      Conductors A,D,E.

Table 28 Continued

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5. MUSIC STAND
   A. Size
      Small A,D,E,F
      Medium____
      Large ____
      Very large____

                     B. Contents
                        One score only D___
                        2-3 scores A___
                        Many scores E,F

   C. Style
      Ornate____
      Moderate___
      Plain A,D,E,F

                     D. None used B,C

6. DRESS--PERSONAL APPEARANCE
   A. Upper clothing
       1. Color
          Light C,D
          Dark A___
          Neutral B,E
          Mixed F

                     2. Activity(pattern)
                        Static A,B,C,F
                        Noisy E___
                        Mixed D

   B. Lower clothing
       1. Color
          Light A___
          Dark C,E,F
          Neutral B,D
          Mixed____

                     2. Activity(pattern)
                        Static A,B,C,D,E,F
                        Noisy____
                        Mixed____

   C. Hand jewelry
      None E___
      Slight A,B,F
      Moderate C,D
      Ornate____

                     D. Eyes(glasses)
                        Yes A,C,D,F
                        No B,E

7. BATON
   A. Use
      Yes A,B,C,D,E,F
      No____

                     B. Length Varied

                     C. Color
                        White A,B,C,D,E,F
                        Tan/Brown____
                        Other____

Table 28 Continued

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8. CHRONEMIC
   Time spent in performance activities
   A 66.5%   D 63.8%
   B 68.2%   E 54.4%
   C 62.6%   F 65.3%

   Time spent in nonperformance activities
   A 33.5%   D 36.2%
   B 31.8%   E 45.6%
   C 37.4%   F 34.7%

Subjects A-C: College/University Conductors

Subjects D-F: High School Conductors

Three questions were raised relative to the field
trial.

Question One

> Are there conductor behaviors that are found which
> are not described by the instrument?

A number of the musically expressive sub-categories
carried an intensity ranking along with the regular
numerical coding, a concept also employed and recommended by
Roshong (1978); this procedure was found to be satis-
factory. Some experimentation was conducted to determine
how many levels should be included; a three-point scale was
utilized for this study since the behavior in question
seemed to be described adequately, and reliability was
preserved. However some of the "expressive" sub-categories
did not carry this scale rating, namely 2.2 (facial
expression used to portray an intended musical outcome) and
3.2 (posture used to portray an intended musical outcome).
Intensity rankings similar to the existing scale should be
included for the above-mentioned sub-categories, as these
types of behaviors are not accounted for fully by the MCOI.

Two varieties of illustrators were found to exist,
while only one variety was classified by the MCOI. The
first was the conventional illustrator as detailed in the
nonverbal literature--one that accompanies the verbal stream
designed to pictorialize what is being said, aid in
phrasing, augment volume, and gain attention (Burgoon and
Saine, 1978, p. 58). There are many types of illustrators,

but all are intended to aid the verbal stream. This type of hand behavior was classified as either 4.9 or 5.10 depending on which hand was being viewed. A different activity was found during the field trial--one in which the hands accompanied the verbal message, but illustrated (pictorialize and/or augment) a musical/emotional idea rather than a true verbal message in the accepted, traditional sense. These behaviors are not really conducting behaviors since they are functioning as an illustrator. This type of behavior would be described best by splitting the illustrator sub-category into two areas: one as a verbal illustrator and one as a musical-content illustrator. By definition both would accompany the verbal stream, not the musical stream. In the present study, both behaviors were coded as illustrators.

In the vocalic category, both silence and confusion were coded under one sub-category with a singular response. A distinction needs to be made between constructive occurrences of silence, such as periods of reflection, versus nonconstructive occurrences, such as general class disorder and chaos. Erbes (1972) designated that constructive silence was coded with a plus sign, and that general confusion was coded with a minus sign. This practice might prove beneficial for the MCOI.

Question Two

Are there practical problems caused by the video-tape procedures?

Generally, the researcher found that the videotape recorder was an extremely effective tool for research of this kind. Many writers have echoed this concept; as part of his research, Daellenbach commented that:

> the use of a videotape recorder as a highly effective tool for recording behavioral data and for detailed analysis of specific teaching behaviors has been justified by this study. Evaluation can be made on a far higher level of sophistication than is possible when traditional procedures are followed. Just as the audiotape recorder proved to be a successful adjunct to verbal behavior investigation, the videotape recorder has now become recognized as a valuable tool for any truly comprehensive study of behavior (1970b, p. 15).

In research of this type, a criticism can always be made that the subjects reacted to the research situation (i.e., Hawthorne effect). Although it is beyond the scope of this study to argue this concept, this idea does relate to the videotaping procedure. The researcher felt that such effects were only very minor and that the subjects seemed to act very naturally.

Two specific problems relating to the taping procedure were related earlier: 1) adequate lighting, which was particularly apparent in concert halls, and 2) ideal camera angles with choral conductors, who were not represented in the field trial. Although these two difficulties did not cause major problems in this study, efforts should have been made to control those variables better. However, in general, the videotaping procedures, particularly the stop-action technique, were found to be satisfactory.

Question Three

Is the instrument practical to use?

Basically, the MCOI was practical to use, especially considering its purpose and orientation. There are several factors relating to this issue.

First, Form 2 (static behaviors) must be completed during live observations, for example during the taping session, to assure accuracy. Complete and accurate answers cannot be provided from videotape observation for all items, including: size of ensemble, room condition, and podium. Certainly, this is not an insurmountable problem.

Second, because of the high degree of inference, trained observers must be employed. If untrained observers were used, reliability probably would be adversely effected to a great degree. In addition, observers should be familiar with the nature of conducting.

Third, when employed in its pure form, the MCOI's use can be quite time consuming. First, the rehearsal must be taped and Form 2 completed; second, the raw rehearsal tape must be edited with the stop-action technique; third, the specially prepared tape must be viewed seven times, with the observer marking responses on the coding forms; and fourth, the data must be tabulated, compiled, and classified. In another application where reliability is not so important, or where cross-category-examination is not necessary, the stop-action technique could be eliminated and codings could be made from the raw tapes; the coding interval could be

established by a "beeper" device, perhaps recorded on a cassette audiotape. Also, not all seven categories would have to be coded if only a certain facet of conductor communication is being studied. In some ways, the categories are quite discreet. In addition, some of the less complex categories--proxemics and vocalics--could be coded simultaneously. Of course, if any of these compromises are taken, certain factors are sacrificed, notably reliability and behavior-sample specification; judgments must be made by prospective researchers as to how the MCOI could be utilized best. A certain flexibility was built into the system.

In this study, the researcher found the MCOI practical to use. The results will be discussed further in the following chapter.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Nonverbal communication is of tremendous importance for the conductors of musical ensembles. Nonverbal messages, both musical and nonmusical, are constantly sent to the performers by the conductor. It is particularly important in the expression of attitudes and emotions.

Research in nonverbal communication has begun only recently. Harrison and Knapp (1972) state that modern study in this field started around the time of World War II. Research activity in the field of education began much later; Charles Galloway was one of the first researchers to investigate the use of nonverbal behaviors in the classroom in a systematic way. His work began in the 1960's and served as an impetus to considerable later research. Research in nonverbal behavior began yet later in music education. Dorman (1978) states that in the field of music, research using and developing observational instruments began, for the most part, in the 1970's; most of these early observational systems did not account for nonverbal behaviors in a systematic or complete manner. Daellenbach

(1968, 1970a, 1970b) was among the first to investigate nonverbal techniques in music education in an organized fashion. Other particularly important research in this field includes: Yarbrough (1973, 1975, 1976, 1979), Ervin (1975), Ostling (1976), Thurman (1977), Lewis (1977, 1978), and Roshong (1978). Although this research has been extremely important in the study of the nonverbal behaviors of conductors, little research exists which places these nonverbal activities within a complete and consistent set of nonverbal communication definitions.

The purpose and problem of this study was to develop an instrument designed to classify observed nonverbal communication behaviors made by conductors of musical ensembles. Accordingly, the sub-problems of this study were to determine the inter-observer reliability of the instrument, and to determine the practicality of the instrument through its use in a field trial.

To assure that the basic orientation of the instrument conformed to a complete and consistent nonverbal communication system, the seven-channel orientation and the definition of nonverbal communication of Burgoon and Saine (1978) were selected as a basic framework for instrument development; the seven channels are: kinesics, physical appearance, vocalics, haptics, chronemics, proxemics, and use of artifacts.

Initially, several steps were taken to establish a basic orientation for instrument development: 1) examination

of the literature with emphasis on the evaluation of existing instruments; 2) indepth study of a videotape of a well-known wind ensemble conductor; and 3) examination of selected conducting texts. The actual process of instrument development paralleled the procedure used by Daellenbach (1970b).

The rehearsals of fifteen conductors representing a wide range of performance settings were videotaped. The tapes were analyzed through repeated playings; detected behaviors were written on index cards. After intense review, the cards were grouped according to similarity of observed behavior. These groupings were compared with the behavior lists which had been developed through the previous examination of existing instruments and conducting texts; differences and omissions were noted. A basic, two-part instrument was developed from these behavior-groupings. The first part was a multi-category, time-sampling system, which accounted for non-static behaviors; the second part was a checklist system, which accounted for static behaviors. Interviews were held with conductors and music educators to further identify and classify behaviors, to determine terminology, and to determine the appropriateness of the categories and sub-categories. Duplications within the system were eliminated, after which time the instrument, the Music Conductor Observation Instrument (MCOI), was in its final form.

The next stage was to determine the inter-observer

reliability for the first part of the instrument; this procedure was not performed for the second part since the data were not open to interpretation. A special tape was prepared for this purpose using stop-action editing to establish the coding interval and to allow for coding response; no editing of actual content was performed.

A training manual with an accompanying videotape was developed to familiarize prospective observers with the use of the MCOI. A short pilot project was conducted to obtain feedback on the training manual, category definitions, and coding procedures and guidelines. One observer coded the rehearsal reliability tape. Reliability figures for this and following stages were determined by comparing the codings of the observer with the codings of the developer of the instrument through use of the Scott Formula. A mean estimate of .76 was achieved. Following the pilot project, the training manual was revised, clarifying some of the category definitions and coding guidelines.

Three graduate students at Michigan State University coded the reliability tape during a five-hour period; the observers received an extremely small amount of instruction in the use of the instrument due to a number of factors. Mean reliability estimates of .69, .72, and .76 were obtained, all of which exceed Heger's (1969) criterion of .60.

A field trial was undertaken to evaluate the practicality of the instrument. The rehearsals of three

high school and three college/university conductors were videotaped. A thirty-minute sample tape was prepared under the same procedure (stop-action editing) as the reliability tape from the raw rehearsal tapes. Form 2 was marked during the taping session with several exceptions due to the fact that the form had been revised after the taping took place; the sample tapes were coded using Form 1 of the MCOI. The results were presented in table form in Chapter III (Tables 21-28).

The purpose of the field trial was to evaluate the practicality of the MCOI. Pertaining to this issue, three questions were raised:

Question One

Are there conducting behaviors that are found which are not described by the instrument?

Two of the "musically-expressive" sub-categories (facial expression used to portray an intended musical outcome and posture used to portray an intended musical outcome) did not carry the intensity scale that several other "expressive" sub-categories did. It was seen that while those sub-categories that carried the rating adequately described the given behaviors, those that did not carry the intensity scale failed to describe the behavior adequately.

During the field trial, two distinct varieties of illustrators were found to exist. The first was the

conventional illustrator that is detailed in the research literature--that which accompanies the verbal stream which pictorializes and/or augments what is being said, gains attention, and aids in phrasing. The other illustrator that was noted during the field trial also accompanied the verbal stream but accented (pictorialized or augmented) a musical concept. It was recommended that the illustrator sub-categories be divided to account for both varieties of behaviors.

It was also recommended that the vocalic sub-category that dealt with silence be divided as well--one to account for constructive uses of silence, and one to account for nonconstructive uses. The procedure employed by Erbes (1972) was suggested for inclusion in the MCOI.

Question Two

> Are there practical problems caused by the video-tape procedures?

The researcher found the taping procedures to be generally satisfactory. Two concerns were noted for which attention should be addressed in future studies: adequate lighting and ideal camera angles, the second of particular concern with choral conductors. The stop-action procedure was of great value in establishing the coding interval.

Question Three

Is the instrument practical to use?

Basically, the MCOI was seen as practical to use. When employed in its pure form, the instrument's use can be quite time consuming. Four steps are taken to gather data using MCOI:

1. A rehearsal is videotaped; Form 2 must be completed during the taping session.

2. The raw rehearsal tape is edited with the stop-action technique.

3. The coding tape must be viewed seven times marking the responses on the coding forms.

4. The data is tabulated, compiled, and classified.

Trained observers who are familiar with the nature of conducting must be used in coding the rehearsal.

Conclusions

Although almost all of the obtained reliability estimates exceeded Heger's criterion of .60, these figures could have been higher had certain conditions been observed. First, there should have been greater, more detailed training for prospective observers. In this study, due to a number of factors, the observers received little orientation into the use of MCOI. Second, observer fatigue was a major factor affecting reliability. In this study, all training and coding took place on a single day. The lower

reliability figures obtained later in the day are but one indication of this problem. During the pilot study, the same process took place over almost a week, and was more successful than the regular study. It is recommended that training and practice take place separate from the actual coding, probably over at least a two-day period. It is also recommended that the actual coding take place over two or three days as well. For this study, the inter-observer estimates, when viewed in relation to the almost non-existant training of the observers, indicate that the instrument was easy to use by observers familiar with the nature of conducting.

Three recommendations were offered to alter the sub-categories of the MCOI:

1. addition of intensity levels to sub-categories 2.2 (facial expression used to portray an intended musical outcome) and 3.2 (posture used to portray an intended musical outcome);

2. addition of sub-categories to describe musical-content illustrators (5.11 and 6.10); and

3. with sub-category 7.7 (vocalic/silence), the use of a plus sign to denote constructive occurrences of silence, such as reflection, pausing for an answer, and the like, and the use of a minus sign to denote nonconstructive occurrences of silence, such as confusion, class disruption, chaos, and the like. The use of an "I" coding to denote idiosyncratic

pauses might also be of value.

Although the field trial was intended to evaluate the practicality of the MCOI, a number of observations was made relative to the nature of nonverbal communication of conductors; these observations are offered not as statistically firm conclusions but as an impetus to further study. In general, there were more occurrences of expressive behaviors leading to musical outcomes exhibited by the college/university conductors than by the high school conductors; this was true in every sub-category but one (5.6). An example is the posture-expressive sub-category (3.2) where the range for the high school conductors was 2.1% to 9.2%, and the college conductors' range was 13.5% to 21% (refer to Table 29). Two areas were noted where the high school conductors' behaviors exceeded those made by the college conductors. The first was the vocalic-counting rhythm sub-category (7.5-circled), where the range was 6.8% to 18.2% for the high school conductors and 0% to 8.6% for the college conductors; two of the college conductors exhibited virtually no such behaviors. Most of these activities occurred when the conductors started the ensembles, or counted while the group was performing. The second sub-category was right hand-neutral/active (5.1A, poised with some degree of tension, as if ready for action), where the range was 10.3% to 12.5% for the high school conductors and 3% to 7.8% for the college conductors.

In general, most of the conductors studied in this

research, relied on hand movements for expressing musical ideas nonverbally, rather than on facial expression, posture, or vocalics. The percentages of the musically expressive sub-categories are shown in Table 29.

Behavior percentages for the sub-categories pertaining to approval and disapproval are shown in Table 30. The percentages across categories for the same types of behavior seem consistent.

The conductor's dress was seen as an important factor. For example, when the conductor's upper clothing was of a light color, it was somewhat difficult to see the baton which is also a light color. Conversely, when the conductor's upper clothing was dark or at least medium in color, his or her hands were seen quite clearly. The shade of lower clothing was not so important.

The background behind the conductor was seen in a similar way as was the conductor's upper clothing. When the background was dark, the conductor's actions were clearly seen. In addition, when the background was cluttered, one's attention was directed away from the conductor's movements. Lighting was another factor; in one case where the band rehearsed in a concert hall, the conductor's podium was placed in the proscenium area, resulting in his being constantly in a shadow, not clearly seen.

Table 29

Behavior Percentages for
Musically Expressive Sub-Categories

Sub-Category	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
Facial Expression 2.2	17.1	14.6	1.8	3.6	4.1	4.4
Posture 3.2	17.4	21.0	13.5	2.1	6.1	9.2
Vocalic-Demonstration 7.4-5	8.6	9.9	2.2	3.5	13.1	8.3
Right Hand 5.3-6	35.1	31.3	13.5	12.0	9.6	9.5
Left Hand 6.3-5	24.4	28.1	16.4	7.3	10.0	13.2

NOTE: The vocalic-demonstration sub-categories (7.4-5) would also include behaviors relating to technical problems and therefore all would not be completely expressive.

Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

Table 30

Behavior Percentages for
Approval/Disapproval Sub-Categories

Sub-Category	Subjects/Conductors Behavior Percentages					
	A	B	C	D	E	F
FACIAL EXPRESSION						
Approval (positive)	2.9	4.6	5.0	2.1	4.9	3.4
Disapproval (negative)	5.8	2.6	1.5	9.9	2.8	10.0
VOCALIC						
Approval (positive)	2.3	1.7	8.0	3.5	2.0	2.8
Disapproval (negative)	10.9	5.7	2.2	16.1	4.1	18.6
GAZE						
Aggressive	.6	0.0	0.0	.9	.3	3.1

Subjects A-C: College/University Conductors
Subjects D-F: High School Conductors

In conclusion, the MCOI is a viable means of classifying the nonverbal communication behaviors of conductors of musical ensembles. As shown by the determination of inter-observer reliability, observers familiar with the nature of conducting are able to use the system; however, the observer training process should be more detailed than it was in this study. The instrument was deemed practical to use. The MCOI could be used to investigate the nature of nonverbal communication of conductors of musical ensembles.

Recommendations for Further Research

Recommendations for further research are:

1. the use of this observation instrument with a broad sample of conductors investigating the nature of nonverbal communication behaviors of conductors of musical ensembles;

2. development of an instrument or adaptation of the MCOI to align with the categories of the RIOS (Erbes, 1972) in a similar fashion as the development of parallel nonverbal categories to Flanders' system as performed by Cheffers (1972);

3. investigation and evaluation of the use and meaning of specific conducting gestures in an effort to determine which gestures hold degrees of shared meaning between sender and receiver;

4. an investigation using multiple cameras and

split-screen replay to allow the observation of both conductor and student;

5. a greater investigation of the effects of chronemics relative to this field; and

6. an accounting for the musical response to the conductor's nonverbal activities leading to a greater understanding of conductor communication.

APPENDIX A

APPENDIX A

MUSIC CONDUCTOR OBSERVATION FORM

CODING FORM

Observation Information_____

CATEGORY 1: GAZE

1.Entire Ensemble or Large Section   4.Aggressive Stare
2.Individual or Small Section   5.Music
3.Scanning   6.Noncommunicative/
                                          Nonfunctional

N	P	N	P	N	P	N	P	N	P	N	P
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MUSIC CONDUCTOR OBSERVATION FORM

CODING FORM

Observation Information_____

CATEGORY 2: FACIAL EXPRESSION

1.Neutral
2.Musical Actor
3.Non-Affective Teaching
  Function

4.Approval or Positive
5.Disapproval or Negative
6.Humorous/Idiosyncratic
7.Reflective

N	P	N	P	N	P	N	P	N	P	N	P
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MUSIC CONDUCTOR OBSERVATION FORM

CODING FORM

Observation Information_____

CATEGORY 3: POSTURE/BODY MOVEMENTS

1.Neutral
2.Musical Shift
3.Metronomic

4.Interactive Shift
5.Demonstration
6.Procedural Shift
7.Noncommunicative/
  Nonfunctional

N	P	N	P	N	P	N	P	N	P	N	P

MUSIC CONDUCTOR OBSERVATION FORM

CODING FORM

Observation Information_____

CATEGORY 4: PROXEMIC

1.Stationary, Neutral   4.Demonstration
2.Moves into Ensemble   5.Procedural Shifts
3.Establishes New Teaching Area   6.Seated
                               7.Nonfunctional Shifts

N	P	N	P	N	P	N	P	N	P	N	P
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MUSIC CONDUCTOR OBSERVATION FORM

CODING FORM

Observation Information_____

CATEGORY 5: RIGHT HAND

1P.Neutral-Passive   *5.Expressive-Shape of Hand
1A.Neutral-Active   *6.Expressive-Blend
 2.Metronomic   7.Cue
*3.Expressive-Size   8.Emblem
*4.Expressive-Style   9.Adaptor
                            10.Illustrator

*H=High Intensity; M=Medium Intensity; L=Low Intensity

N	P	N	P	N	P	N	P	N	P	N	P

MUSIC CONDUCTOR OBSERVATION INSTRUMENT

CODING FORM

Observation Information_____

CATEGORY 6: LEFT HAND

1P.Neutral-Passive	*5.Expressive-Blend
1A.Neutral-Active	6.Cue
2.Metronomic	7.Emblem
*3.Expressive-Movement	8.Adaptor
*4.Expressive-Gesture	9.Illustrator

*H=High Intensity; M=Medium Intensity; L=Low Intensity

N	P	N	P	N	P	N	P	N	P	N	P

.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT

CODING FORM

Observation Information_____

CATEGORY 7:   VOCALICS

1.Neutral
2.Disapproval/Negative Tone
3.Approval/Positive Tone
4.Musical Demonstration
5.Verbal Demonstration

5.Counting Rhythm
6.Body-Created Musical Demo.
7.Silence/Confusion
8.Student Talk
/.No Activity-Ensemble
   Performance

N	P	N	P	N	P	N	P	N	P	N	P

APPENDIX B

APPENDIX B

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 1

TRAINING MANUAL

The most important goal of the conductor of a musical
performance ensemble is to convey desired intent through a
variety of means. It seems that,

> the primary function of a conductor is
> communication. Through various physical actions,
> he is required to indicate to the players all of
> the instructions contained in the score, plus all
> that may be implied by the score, or understood as
> the result of diligent study and research
> (Blackman, 1964, p. 27).

The success of a conductor seems somewhat dependent on his
ability to communicate.

Although there have been a number of studies which
analyze the verbal behaviors of conductors, few studies have
been performed that analyze their nonverbal behaviors.
Nonverbal communication is essential to the conductor; in
fact, during a performance, all communication must be
nonverbal. Since this channel of communication is so
important, an attempt must be made to analyze the nonverbal
communication of musical conductors; it is important to
begin to understand how a conductor communicates his or her
ideas. The Music Conductor Observation Instrument (MCOI) is
designed to collect and classify nonverbal behaviors of

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conductors for later analysis.

Objectives of the Manual

This manual will list and describe the various categories of the MCOI--Form 1; an accompanying videotape illustrating sample behaviors for each category is intended to further clarify one's understanding of each category. The basic procedures and rules governing the use of the instrument will also be explained.

Overview of the MCOI

The MCOI is divided into two separate sections: the first to account for non-static behaviors, the second to account for static behaviors. This manual will deal with the first part only.

This first part consists of seven major categories each divided into a number of sub-categories. The seven categories are: gaze, facial expression, posture (including minor body movements), proxemic (space and territory usage), right hand, left hand, and vocalic (communicative function of the voice separate from the verbal meaning). The instrument uses a function-meaning approach where the meaning behind the behavior is of importance; emphasis is placed upon the communicative types of behaviors. The complete instrument is shown at the end of this manual.

Analysis must be made from videotape recordings, since each category is viewed independently. Therefore it is necessary to replay each tape seven times, once for each

category.

The behaviors must be viewed in context even though they seemingly are isolated because of the time-sampling technique, and because of the basic structure of the instrument itself.

The MCOI Categories and Category Definitions

1. GAZE: This category deals with the direction and purpose of the conductor's gaze. The eyes are of primary importance for the observer; the general direction of the face and head is a secondary indicator.

1. Entire Ensemble or Large Section. The conductor is looking at the entire ensemble or a large section of the ensemble. This type of gaze is employed normally when the conductor is addressing the entire group. This includes a neutral gaze when he/she is conducting, normally straight ahead.

2. Individual or Small Section. The conductor is looking at an individual or small section. This would include a cue with the eyes, looking at a section or individual while they are being addressed by the conductor. The behavior must be clearly directed toward the small section or individual, or the behavior must be listed under sub-category #1.

3. Scanning. The conductor is using a shifting eye motion over the entire ensemble in a sweeping movement. There must be motion; motion is the the determining factor as to deciding if a behavior is to be coded as #3. It is a gaze of the entire group but with motion. It must be simply a shift from one group to another; it is a "back-and-forth" type of movement.

4. Aggressive Stare. The conductor stares at an individual, section, or the entire ensemble in a disapproving manner.

5. Music. The conductor is looking at music, normally down. The head and eyes are both primary indicators of this behavior. If the conductor is looking down with no music present, classify the behavior as #6;

if he/she is looking down at the music with the music present, classify it as #5. If the conductor is looking down, do not assume that he is looking at the music; try to determine where he/she is actually looking.

6. Noncommunicative/Nonfunctional. The conductor's gaze is directed away from the ensemble. Examples of this type of behavior would include: looking at an outsider coming into the rehearsal, looking at a clock or watch, looking at a classbook, and the like. Looking off into space for no apparent reason would also be classified under this sub-category. Any gaze directed away from the ensemble other than at music is included in this sub-category.

2. FACIAL EXPRESSION: The prime indicators are the mouth, eyebrows, and general muscular activity of the face.

1. Neutral. The conductor shows little or no emotion in the face.

2. Musical Actor. The conductor uses a facial expression to illustrate an intended musical outcome; it is an obvious attempt to portray a musical affect. This behavior is often used to illustrate a particular musical style. An exaggerated "sh" look/sound when used to lower the general music dynamic would be included in this sub-category.

3. Non-Affective Teaching Function. The conductor's face is used to assist in a non-affective teaching function--used to illustrate and demonstrate technique not musical ideas. this behavior is exhibited more by choral conductors than by instrumental conductors. Examples of this behavior would include: mouthing the words in an exaggerated way, demonstrating the shape of the mouth for a certain sound, and demonstrating embouchure.

4. Approval or Positive. The conductor's face expresses approval by smiling, grinning, raising eyebrows, opening and widening eyes, and the like.

5. Disapproval or Negative. The conductor's face expresses disapproval by frowning, smirking, knitted eyebrows, wrinkling mouth, squinting eyes, wrinkling forehead and eyes, tightening jaw and lips, the "sh" sound/look when used to quiet the ensemble, and the

like.

6. <u>Humorous/Idiosyncratic</u>. The conductor uses the face to entertain--a funny face--often to ease tension in a rehearsal. Very unusual expressions (strongly ideosyncratic) and comical expressions would be included in this sub-category.

7. <u>Reflection</u>. The conductor's face shows a state of confusion, questioning, or reflection.

3. POSTURE/BODY MOVEMENTS: This category deals with the conductor's body movements particularly those above the waist.

1. <u>Neutral</u>. The conductor is relatively motionless.

2. <u>Musical Shift</u>. The conductor uses a change in posture to help illustrate an intended musical outcome, such as suddenly leaning forward to show an accent. The shift is used largely to illustrate musical style.

3. <u>Metronomic</u>. The conductor bends, bounces, and/or leans in rhythm. The activity may or may not be intentional. The movements must be in rhythm. Typical examples would be: forward leaning from the waist, flexing at the knees, and the like.

4. <u>Interactive Shift</u>. The conductor moves or bends closer to a particular individual or section to increase the directness and/or intensity of a particular interaction. This would include turning while cuing a section or individual; however it must obviously be a cue.

5. <u>Demonstration</u>. The conductor illustrates a particular concept with posture; this concept would be technical in nature rather than musical. Examples would be to demonstrate good or poor posture. Excercising (i.e., during a warm-up period) would be coded in this sub-category.

6. <u>Procedural Shift</u>. This is a shift used when the conductor is performing a specific procedural function, such as leaning over to play the piano, raising the music stand, moving a chair, picking up a dropped object, and the like.

7. <u>Noncommunicative/Nonfunctional</u>. The conductor shifts his posture for no obvious reason. This would include swaying nonmetronomically to the music, bending over to itch his/her ankle, bouncing between musical selections, and the like. The non-metronomic shifts will be among the most common behaviors.

4. PROXEMIC. This category deals with how a conductor utilizes space; it is a study of territoriality determined through major body movements.

1. <u>Stationary</u>, <u>Neutral</u>. The conductor is firmly fixed in the podium area. Minor shifts within the podium area would still be coded under this sub-category. The podium area is defined as the conductor's normal conducting/teaching station, typically behind a music stand; he/she may or may not be actually standing on a podium.

2. <u>Moves into Ensemble</u>. The conductor leaves the podium area and moves closer or into the ensemble. If the conductor is standing on a podium, any departure would be coded under this sub-category, unless the behavior would be better classified under another sub-category (#3,4,5,7). If the conductor is not using a podium, he/she must move out of his established podium area, usually two or more steps away. If the conductor is using a music stand, the stand can be used as a guide for defining the podium area.

3. <u>Establishes New Teaching Area</u>. The conductor moves away from the podium area and establishes a new teaching station. A prime example would be for the conductor to go to the chalkboard to explain a given concept.

4. <u>Demonstration</u>. This category has the same coding criteria as sub-category #3.5.

5. <u>Procedural Shifts</u>. The conductor leaves the podium area in order to perform some administrative task, such as getting music (a new score or a certain musical part), moving chairs, getting a music stand, turning on a tape recorder, getting a grade book, and the like.

6. <u>Seated</u>. The conductor is seated.

7. <u>Nonfunctional Shifts</u>. The conductor moves away from the podium for no apparent reason, often between musical selections.

5. RIGHT HAND

1P. <u>Neutral-Passive</u>. The conductor's hand is relaxed, often at his/her side, in a pocket, behind his/her back, or the like. The hand is almost always below the waist, a factor which helps to differentiate between active and passive.

1A. <u>Neutral-Active</u>. The conductor's hand is in a neutral position but is poised for action with a degree of muscular tension. The hand must be above the waist--"ready to go."

2. <u>Metronomic</u>. The conductor is making very little or no attempt to convey musical intent other than pulse, attack, and/or release. This includes beating time, cut-offs and initial entrances.

For #3-6: For these sub-categories, the coder will also indicate an intensity level in addition to the regular sub-category number; these ratings are:
 H = High degree
 M = Medium degree
 L = Low degree.
An "H" rating would indicate a very strong, very obvious level of expression. An "M" rating would indicate a more normal, average intensity. An "L" rating would indicate a weak level of expression; subtle moves would be coded as an "L". Reserve the "H" rating for very strong occurrences.

3.* <u>Expressive-Size</u>. The conductor is expressing a musical concept through a change in the size of the beat pattern (smaller or larger). This must be the only variable observed. A continued occurrence of the change would also be coded under this category for three consecutive occurrences; after the third, the behavior would resort to the #2 (metronomic) sub-category, until another change is noted.

4.* <u>Expressive-Style</u>. The conductor is expressing a musical concept through the style of the beat. For example, a smooth, flowing beat-pattern would often represent a legato feel; a "jerky" beat with a bouncing ictus would tend to indicate staccato, marcato, or the like. This must be the only variable observed for the behavior to be coded in this sub-category.

5.* <u>Expressive-Shape of Hand</u>. The conductor is expressing a musical concept through the shape of the hand. This must be the only variable observed for the behavior to be coded in this sub-category. If the conductor does not use a baton, the use of gesture would be the indicator. If the conductor uses a baton, the way that he grips the baton is the indicator; if he changes the grip, it must be coded as #5. An example would be lifting the first finger off the baton. If no specific purpose can be determined as to why the conductor did this, code the behavior as 5L.

6.* <u>Expressive-Blend</u>. The conductor is expressing a musical concept through a variety of means simultaneously or in very rapid succession. If an expressive quality is noted that could be classified under any two of the above sub-categories (i.e., 3 and #4, #3 and #5, etc.), then the behavior is coded as #6. Direction is also a variable; if direction of beat is combined with any other sub-categories (#3-5), this behavior is coded as a #6. Rapid shifts of expressive behaviors would also be coded here. The other sub-categories of expressive conducting are exclusive of one another; this sub-category is inclusive.

7. <u>Cue</u>. The conductor cues a specific entrance of an individual or section. This is a directional movement--a movement with a directional focus. Occasionally, a certain beat with the beat pattern may be emphasized to indicate a cue. This must be extremely obvious, or else this behavior would be confused with an expressive movement.

8. <u>Emblem</u>. This is an intentional behavior that has a direct verbal counterpart. Examples are: the hitchhiker's thumb, the "Okay" sign, fingers to indicate numbers, and the like.

9. <u>Adaptor</u>. This is a behavior designed to satisfy a physical or emotional need. Examples are: brushing one's hair, itching, pushing up one's glasses, straightening clothes, turning music pages, holding music, fixing a music stand, and the like.

10. <u>Illustrator</u>. This type of behavior accompanies the verbal stream, and is designed to do such things as pictorialize what is being said, aid in phrasing, augment volume, gain attention, and increase intensity. It does not have a verbal equivalent. It must accompany talking; it will not occur except during a verbal activity.

6. LEFT HAND. Many of the sub-categories are very similar or the same as those for the right hand. The coder most be careful to discriminate between #2 and #3-5.

> 1P. <u>Neutral-Passive</u>. The conductor's hand is relaxed, often at his/her side, in a pocket, behind his/her back, or the like. The hand is almost always below the waist.
>
> 1A. <u>Neutral-Active</u>. The conductor's hand is in a neutral position but is poised for action. The hand is above the waist.
>
> 2. <u>Metronomic</u>. The conductor is making very little or no attempt to convey musical intent other than pulse, attack, and/or release. This includes beating time, cut-offs, and initial entrances.

For #3-5: For these sub-categories, the coder will indicate an intensity level in addition to the sub-category number under the same conditions as were employed in the right-hand sub-categories.

> 3.* <u>Expressive-Movement</u>. The conductor is expressing a musical concept through movement of the left hand and arm; the arm is the prime indicator. The shape of the hand must be neutral (the hand is in a given position held static for a period of time). If the left arm/hand is performing a metronomic function that has a hint of expressiveness, code it as 3L.
>
> 4.* <u>Expressive-Gesture</u>. The conductor is expressing a musical concept through the shape of the hand. Volume-control-gestures are quite common, examples of which are the palm-up to indicate a softer dynamic and a waving of the hand to indicate a louder dynamic. There may be movement connected with the gesture as in the case of the crescendo. These very common volume-control-gestures should be coded as 4H if they are obvious, otherwise as 4M.
>
> 5.* <u>Expressive-Blend</u>. The conductor is expressing a musical concept through a variety of means simultaneously or in rapid succession.
>
> 6. <u>Cue</u>. The conductor cues a specific entrance. If a gesture (i.e., pointing) is used in conjunction with a type of movement, it still should be coded under this sub-category, not #3.
>
> 7. <u>Emblem</u>. This will operate under the same criteria

as #6.8.

8. <u>Adaptor</u>. This will operate under the same criteria as #6.9.

9. <u>Illustrator</u>. This will operate under the same criteria as #6.10.

7. VOCALIC: This category deals with the communicative power of the voice separate from the verbal message.

1. <u>Neutral</u>. The conductor is using a neutral tone of voice, one of which would not be classified more accurately under a different sub-category (#2,3,5). Volume in and of itself would not be a determining factor; for example, shouting directions over the ensemble would be classified as "neutral" unless disapproval was detected clearly.

2. <u>Disapproval/Negative Tone</u>. The conductor expresses disapproval through the tone and character of his/her voice, or the general quality of the voice appears to be negative. The emotions conveyed would include disgust, sadness, contempt, anger, or fear. Silence if used for disapproval would be coded as #2, otherwise as #7.

3. <u>Approval/Positive Tone</u>. The conductor expresses approval through the tone and character of his/her voice, or the general quality of his/her voice appears to be positive. The emotions conveyed would include happiness, interest, or determination.

4. <u>Musical Demonstration</u>. The conductor demonstrates a musical concept through musical demonstration, usually by singing or humming. With a choral conductor who is demonstrating text, pitch must be present for the behavior to be classified under this sub-category, otherwise it would be coded as #5.

5. <u>Verbal Demonstration</u>. This refers to the use of the tone of voice to demonstrate a musical concept, such as "do-it" to describe a long note followed by a short, clipped note. The demonstration of letter sounds by choral conductors would be coded under this sub-category.

⑤ <u>Counting Rhythm</u>. The conductor counts out loud to aid in teaching rhythm or to assist in establishing a given tempo.

6. <u>Body-Created Musical Demonstration</u>. This behavior includes clapping, stamping, and tapping with the baton to demonstrate a musical concept--usually tempo and/or rhythm. If this type of behavior occurs at the same time as another behavior, write down both numbers. This activity must be employed for musical reasons; clapping used as applause would not be allowable.

7. <u>Silence/Confusion</u>. This would be coded only during periods of non-performance. These behaviors would occur often during periods of reflection. Very short pauses between sentences should not be coded under this sub-category; however, if these pauses are longer than normal, code the behaviors as #7.

S. <u>Student Talk</u>.

/. <u>No Activity/Ensemble Performance</u>. The ensemble is performing and the conductor is not displaying a vocalic behavior. Silence while the group is not performing would be coded as #7, a behavior which is often noted immediately before the ensemble begins to perform.

Coding Procedures

MCOI analysis must be made from videotape recordings, since the rehearsal segment that is to be coded must be viewed seven times, once for each category. The coder will deal with only one category at a time.

The analysis tape is specially prepared. The tpae begins with a thirty-second period which the coder will watch without making any written observations; this is a period during which the coder will become accustomed to the conductor's general style. After this thirty-second introductory period, there will be a pause, after which the actual coding will begin. The coding portion of the tape is divided into two sections which continually follow one

another. The first is five seconds in length and is the actual conducting activity taken from the rehearsal; this is followed by the second which is a two-second pause during which time the coder will write his observation on the special coding-form. After the two-second pause, another five-second activity segment will follow, then another two-second pause, with this procedure continuing until the end of the tape. The tape is a continuous rehearsal segment interrupted every five seconds by a two-second pause.

The coder is concerned with the behavior at the very end of the five-second interval only. The MCOI samples behaviors; it does not collect every behavior, but only one for every five-second period. The coder must account only for the last behavior, not the predominant behavior or the average behavior. If the behavior begins to change at the very end of the interval, the coder should try to account for this new behavior and not the old; on very rare occasions, the coder may have to delay his/her marking until the beginning of the next activity period on the tape to determine what actual behavior occurred.

All codings are made on a specially prepared form. There is a separate form for each category; the forms follow the same format exactly regardless of the category; the headings are the only difference. The observer will mark his/her codings sequentially running down the page in either of the column pairs. If the ensemble is not performing, the rating is placed in the first column; if

the ensemble is performing, the rating is placed in the second column. This procedure is illustrated in the following example:

$$
\begin{array}{cccc}
\underline{1} & \underline{} & \underline{1} & \underline{} \\
\underline{6} & \underline{} & \underline{} & \underline{6} \\
\underline{} & \underline{3} & \underline{} & \underline{6} \\
\underline{} & \underline{2} & \underline{} & \underline{2} \\
\underline{1} & \underline{} & \underline{\text{etc.}} & \underline{} \\
\underline{} & \underline{7} & \underline{} & \underline{} \\
\underline{} & \underline{6} & \underline{} & \underline{} \\
\underline{1} & \underline{} & \underline{} & \underline{} \\
\underline{1} & \underline{} & \underline{} & \underline{} \\
\underline{1} & \underline{} & \underline{} & \underline{}
\end{array}
$$

The ratings are continued sequentially until the bottom of the column at which time the second pair of columns is used.

Recommendations for obtaining accurate ratings include the following:

1. Carefully study the category definitions and explanations in this manual, noting specific examples and types of behaviors for each sub-category. Make sure the number for each sub-category is clearly in mind.

2. Be prepared for subtle shifts from one behavior to another.

3. With the gaze category, be extremely careful in discriminating between nonfunctional (down) and looking at music, and between nonfunctional (up) and at the entire ensemble.

4. With the posture category, be very careful in discriminating between metronomic shifts and non-functional shifts.

5. With the right and left hand categories, be extremely careful in discriminating between the metronomic and expressive sub-categories. If there is doubt as to whether the behavior is expressive or metronomic, generally lean toward the expressive sub-category, but code it as an "L".

6. If in doubt about how to code a given behavior, place it in a category consistent with the pre-vailing behavior at the time. Do not allow yourself to become behind because of a single very complex

behavior.

7. If it is impossible to determine a given behavior (i.e., the conductor moved out of camera range), code the segment with a dash.

8. Only one rating should be marked per coding interval with the exception of #7.6 which can occur at the same time as another behavior, and can be marked in addition to another sub-category.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT

MCOI

Form 1--Nonstatic Behaviors

Category	Category Description
1.1	Conductor is looking at the entire ensemble or a large section, often a neutral look.
1.2	Conductor is looking at an individual or small section.
1.3	Conductor is scanning, shifting eye motion over the entire ensemble in a sweeping motion.
1.4	Aggressive stare often of a disapproval nature or intent.
1.5	Conductor is looking at music, often down.
1.6	Noncommunicative, nonfunctional.
2.1	Neutral, showing little emotion.
2.2	Conductor uses a facial expression to illustrate an intended musical outcome, an obvious intent to portray a musical affect.
2.3	Conductor's face is used to assist in a non-affective teaching function, such as mouthing the words in an exaggerated way, or demonstrating embouchure.
2.4	Conductor's face expresses appproval by smiling, grinning, raising eyebrows, and the like--a positive tone.
2.5	Conductor's face expresses disapproval by frowning, smirking, knitted eyebrows, tightening jaw and lips, scowling, and the like--a negative tone.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT: Form 1

2.6   Conductor uses the face to entertain, a funny face often used to ease tension, or a strongly idiosyncratic look.

2.7   Conductor's face shows a state of confusion, questioning, or reflection.

3.1   Neutral, erect.

3.2   Conductor uses a change in posture to help illustrate an intended musical outcome, such as in the style of performance or an accent with a sudden lean forward.

3.3   Metronomic bouncing and leaning.

3.4   A posture shift used to increase the directness of an interaction.

3.5   A posture shift used to illustrate a verbal message; demonstration techniques such as demonstrating good posture; warm-up exercises.

3.6   Procedural shifts such as bending over to play the piano.

3.7   Noncommunicative, nonfunctional, very rapid shifts of an undefined purpose.

4.1   Stationary, neutral.

4.2   The conductor moves into the ensemble.

4.3   The conductor moves away from the podium-area and establishes a new teaching station.

4.4   A major body movement/proxemic shift used to illustrate a verbal message; demonstration techniques; large warm-up exercises.

4.5   Procedural shifts such as getting a new score.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 1

4.6	Conductor is seated.
4.7	Nonfunctional shifts and movements, usually between musical works, often a relaxation period.

5.1	Neutral: Mark a "P" (Passive) when the conductor is at rest, a marked degree of relaxation; Mark an "A" (Active) when there is a degree of tension, a degree of readiness.
5.2	Metronomic, little or no attempt made to convey musical intent other than pulse, attack, and/or release.
5.3*	Expressive through a change in <u>size</u> of the beat pattern, or a continued occurrence.
5.4*	Expressive through the <u>style</u> of movement in the beat pattern.
5.5*	Expressive through the <u>shape of the hand</u> (gesture, shape of hand, or baton angle).
5.6*	Expressive through a <u>blend</u> of behaviors.
5.7	A cue to indicate a specific entrance, often directional.
5.8	Emblematic, an intentional behavior that has a direct verbal counterpart, such as the hitchhiker's thumb, or the "Okay" sign.
5.9	Adaptor, a behavior designed to satisify a physical or emotional need, such as brushing one's hair, or page turning.
5.10	Illustrator, a behavior that accompanies the verbal stream, designed to do such things as pictorialize what is being said, aid in phrasing, augment volume, and gain attention. They do not have a direct verbal equivalent.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 1

6.1   Neutral: Mark a "P" (Passive) when the conductor is at rest, a marked degree of relaxation; mark an "A" (Active) when there is a degree of tension, a degree of readiness.

6.2   Metronomic, little or no attempt made to convey musical intent other than pulse, attack, and/or release.

6.3*   Expressive through a <u>movement</u> of the arm or hand.

6.4*   Expressive through a <u>gesture</u> (shape of the hand).

6.5*   Expressive through a <u>blend</u> of movement and gesture.

6.6*   A cue to indicate a specific entrance.

6.7   Emblematic, an intentional behavior that has a direct verbal counterpart.

6.8   Adaptor, a behavior designed to satisfy a physical or emotional need.

6.9   Illustrator, a behavior that accompanies the verbal stream, designed to do such things as pictorialize what is being said, aid in phrasing, augment volume, and gain attention. They do not have a direct verbal equivalent.

7.1   Neutral tone of voice, little or no emotional content, very business-like.

7.2   Disapproval tone, voice shows anger, disgust, dislike, and the like; silence if used for disapproval; a negative tone.

7.3   Approval tone, voice shows admiration, affection, amusement, cheerfulness, joy, and/or satisfaction; a positive tone.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT—Form 1

7.4	Musical demonstration, such as singing or humming.
7.5	Verbal demonstration, use of tone of voice to demonstrate a musical concept, includes demonstration of letter sounds by choral conductors.
7.⑤	Counting rhythm, the conductor counts out loud to aid in teaching rhythm or to assist in establishing a given tempo.
7.6	Body-created musical demonstration, such as clapping, stamping, and tapping with the baton.
7.7	Silence/confusion during periods of non-performance.
7.S	Student talk.
7./	No activity/ensemble performance.

* A letter is to be used in combination with the category number to indicate the degree of intensity of the given behavior:
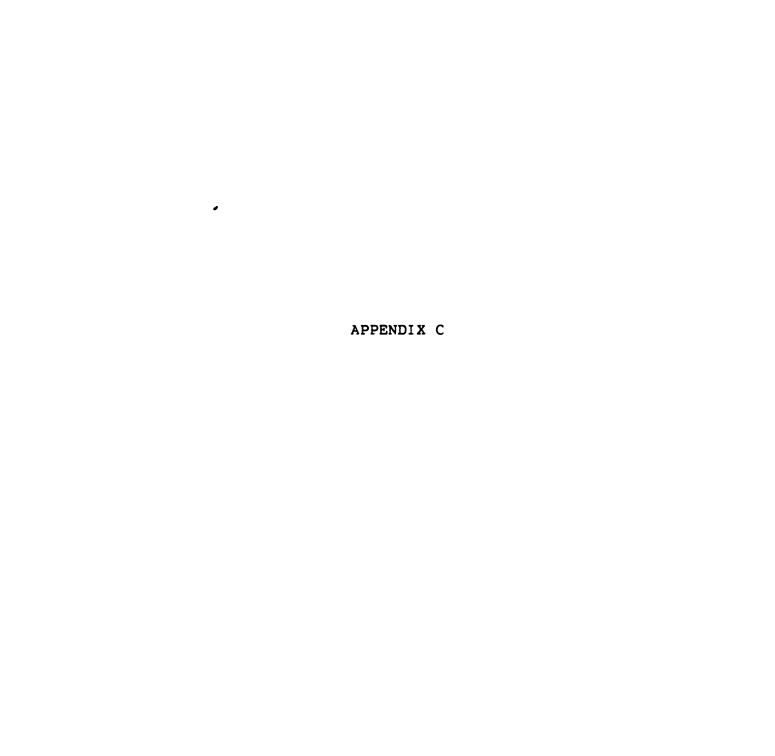
H = A High degree
M = A Medium degree
L = A Low but still clearly detectable degree.

REFERENCE

Blackman, C. _Behind the Baton_. New York: Charos Enterprises,
      Inc., 1964.

APPENDIX C

APPENDIX C

MUSIC CONDUCTOR OBSERVATION INSTRUMENT

MCOI

Form 1--Nonstatic Behaviors

Category	Category Description
1.1	Conductor is looking at the entire ensemble or a large section, often a neutral look.
1.2	Conductor is looking at an individual or small section.
1.3	Conductor is scanning, shifting eye motion over the entire ensemble in a sweeping motion.
1.4	Aggressive stare often of a disapproval nature or intent.
1.5	Conductor is looking at music, often down.
1.6	Noncommunicative, nonfunctional.
2.1	Neutral, showing little emotion.
2.2	Conductor uses a facial expression to illustrate an intended musical outcome, an obvious intent to portray a musical affect.
2.3	Conductor's face is used to assist in a non-affective teaching function, such as mouthing the words in an exaggerated way, or demonstrating embouchure.
2.4	Conductor's face expresses appproval by smiling, grinning, raising eyebrows, and the like--a positive tone.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT: Form 1

2.5   Conductor's face expresses disapproval by frowning, smirking, knitted eyebrows, tightening jaw and lips, scowling, and the like--a negative tone.

2.6   Conductor uses the face to entertain, a funny face often used to ease tension, or a strongly idiosyncratic look.

2.7   Conductor's face shows a state of confusion, questioning, or reflection.

3.1   Neutral, erect.

3.2   Conductor uses a change in posture to help illustrate an intended musical outcome, such as in the style of performance or an accent with a sudden lean forward.

3.3   Metronomic bouncing and leaning.

3.4   A posture shift used to increase the directness of an interaction.

3.5   A posture shift used to illustrate a verbal message; demonstration techniques such as demonstrating good posture; warm-up exercises.

3.6   Procedural shifts such as bending over to play the piano.

3.7   Noncommunicative, nonfunctional, very rapid shifts of an undefined purpose.

4.1   Stationary, neutral.

4.2   The conductor moves into the ensemble.

4.3   The conductor moves away from the podium-area and establishes a new teaching station.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 1

4.4   A major body movement/proxemic shift used to illustrate a verbal message; demonstration techniques; large warm-up exercises.

4.5   Procedural shifts such as getting a new score.

4.6   Conductor is seated.

4.7   Nonfunctional shifts and movements, usually between musical works, often a relaxation period.

5.1   Neutral: Mark a "P" (Passive) when the conductor is at rest, a marked degree of relaxation; Mark an "A" (Active) when there is a degree of tension, a degree of readiness.

5.2   Metronomic, little or no attempt made to convey musical intent other than pulse, attack, and/or release.

5.3*   Expressive through a change in size of the beat pattern, or a continued occurrence.

5.4*   Expressive through the style of movement in the beat pattern.

5.5*   Expressive through the shape of the hand (gesture, shape of hand, or baton angle).

5.6*   Expressive through a blend of behaviors.

5.7   A cue to indicate a specific entrance, often directional.

5.8   Emblematic, an intentional behavior that has a direct verbal counterpart, such as the hitchhiker's thumb, or the "Okay" sign.

5.9   Adaptor, a behavior designed to satisify a physical or emotional need, such as brushing one's hair, or page turning.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 1

5.10	Illustrator, a behavior that accompanies the verbal stream, designed to do such things as pictorialize what is being said, aid in phrasing, augment volume, and gain attention. They do not have a direct verbal equivalent.
6.1	Neutral: Mark a "P" (Passive) when the conductor is at rest, a marked degree of relaxation; mark an "A" (Active) when there is a degree of tension, a degree of readiness.
6.2	Metronomic, little or no attempt made to convey musical intent other than pulse, attack, and/or release.
6.3*	Expressive through a <u>movement</u> of the arm or hand.
6.4*	Expressive through a <u>gesture</u> (shape of the hand).
6.5*	Expressive through a <u>blend</u> of movement and gesture.
6.6*	A cue to indicate a specific entrance.
6.7	Emblematic, an intentional behavior that has a direct verbal counterpart.
6.8	Adaptor, a behavior designed to satisfy a physical or emotional need.
6.9	Illustrator, a behavior that accompanies the verbal stream, designed to do such things as pictorialize what is being said, aid in phrasing, augment volume, and gain attention. They do not have a direct verbal equivalent.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 1

7.1 Neutral tone of voice, little or no emotional content, very business-like.

7.2 Disapproval tone, voice shows anger, disgust, dislike, and the like; silence if used for disapproval; a negative tone.

7.3 Approval tone, voice shows admiration, affection, amusement, cheerfulness, joy, and/or satisfaction; a positive tone.

7.4 Musical demonstration, such as singing or humming.

7.5 Verbal demonstration, use of tone of voice to demonstrate a musical concept, includes demonstration of letter sounds by choral conductors.

7.⑤ Counting rhythm, the conductor counts out loud to aid in teaching rhythm or to assist in establishing a given tempo.

7.6 Body-created musical demonstration, such as clapping, stamping, and tapping with the baton.

7.7 Silence/confusion during periods of non-performance.

7.S Student talk.

7./ No activity/ensemble performance.

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* A letter is to be used in combination with the category number to indicate the degree of intensity of the given behavior:

H = A High degree
M = A Medium degree
L = A Low but still clearly detectable degree.

MUSIC CONDUCTOR OBSERVATION INSTRUMENT

MCOI

Form 2--Static Behaviors

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1. BACKGROUND INFORMATION:

   A. Type of Ensemble: B. Size of Ensemble____

      Chorus____

      Orchestra____

      Band____

2. ROOM (SETTING):

   A. Condition: B. Floor:

      Neat____   Flat____

      Cluttered____   Risers____

      Neutral____

   C. Lighting:

      Excellent____

      Very Good____

      Good____

      Fair____

      Poor____

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 2

_____

3. BACKGROUND:

   A. Color: B. Activity(pattern):

      Dark____   Static____

      Light____   Noisy____

      Neutral____   Mixed____

      Mixed____

4. PODIUM/PODIUM AREA:

   A. Use: B. Dimensions:

      Yes____   Height____

      No____   Size/Shape____

                                         Steps____

   C. Construction: D. Condition:

      Unfinished____   Excellent____

      Painted____   Very Good____

      Carpeted____   Good____

      Mixed____   Fair____

                                         Poor____

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 2

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5. MUSIC STAND:

   A. Size:

      Small(plain rack)____

      Medium(rack/large top)____

      Large(special stand)____

      Very Large(stand w/ facing____

   B. Contents:

      1 Score Only____

      2-3 Scores____

      Many Scores, etc.____

   C. Style:

      Ornate____

      Moderate____

      Plain____

   D. No Music Stand

      Used____

6. DRESS--PERSONAL APPEARANCE

   A. Upper Clothing:

      1. Color:

         Light____

         Dark____

         Neutral____

         Mixed____

      2. Activity(pattern):

         Static____

         Noisy____

         Mixed____

MUSIC CONDUCTOR OBSERVATION INSTRUMENT--Form 2

B. Lower Clothing:

   1. Color:

     Light____

     Dark____

     Neutral____

     Mixed____

   3. Activity(pattern):

     Static____

     Noisy____

     Mixed____

C. Hand Jewelry:

  None____

  Slight____

  Moderate____

  Ornate____

D. Eyes(glasses):

  Yes____

  No____

7. BATON:

  A. Use:

    Yes____

    No____

  B. Length____

  C. Color:

    White____

    Tan/Brown____

    Other____

8. CHRONEMIC(TIME):
Time spent in performance activities_____%
Time spent in nonperformance activities____%

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