

**EFFECTIVE LISTENING: THE INVISIBLE
SKILL OF COMMUNICATION**

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EFFECTIVE LISTENING: THE INVISIBLE
SKILL OF COMMUNICATION

An Abstract
Presented to the
Graduate and Research Council of
Austin Peay State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Juan Manuel Aguayo Leal
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ABSTRACT

This investigation represents a study in the effect of incorporating nonverbal elements of communication in developing listening skills of the audience. Three different treatments are tested and compared: an audio recording, a talking head videotape presentation and a medium shot videotape presentation. Three groups of college students were tested with a questionnaire prior and after viewing or hearing each presentation. The medium shot videotape presentation, which included the nonverbal elements of communication, was expected to provide a better understanding of the lecture. This hypothesis was supported with the analysis of the results. It was determined that the use of nonverbal elements of communication by a lecturer is essential in improving listening skills of the audience. It was also proven that the initial level of interest for a topic is not a determining factor in how much information is retained.

EFFECTIVE LISTENING: THE INVISIBLE
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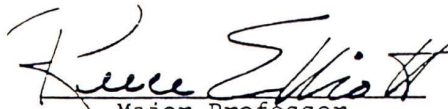
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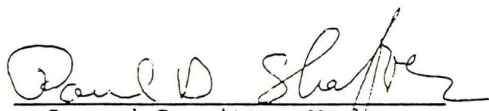
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To the Graduate and Research Council:

I am submitting herewith a Thesis written by Juan Manuel Aguayo Leal entitled, "Effective Listening: The Invisible Skill of Communication." I have examined the final copy of this paper for form and content, and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts with a major in Mass Communication and Speech.

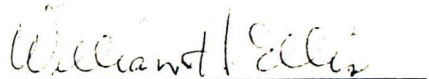

Major Professor

We have read this Thesis and
recommend its acceptance:


Second Committee Member


Third Committee Member

Accepted for the Graduate
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Chapter 1

Introduction

"Listening is receiving with nothing to prove."

(A. Jann Davis, 1984)

What proof do we have that we actually understand a message just by listening? Do we respond based on what we understand or do we simply react to a situation according to our experiences? Through the years many studies have been conducted on the definition and aspects of listening. Through these attempts, so many variables have been identified that we find it difficult to articulate a single precise definition.

What is listening? Is it a physical response? Is it a psychological attitude or is it a necessity for proper development as humans? There are many definitions. Listening has been defined as an art. In his book The Art of Listening, Dominick A. Barbara (1966) explained that "Listening is an art. To be well performed, it requires more than just letting sound waves enter passively into the ear. Good listening is an alive process demanding alert and active participation." If we take into consideration this definition, then we could say that not everyone listens properly. Good listeners must know how to select what they want to listen to so that it may be useful and constructive. A bad listener will hear everything without really paying much attention to the ideas or message inherent in the communication process. In order for listening to be

effective as an art, it requires the full attention of all people involved in the conversation. For the communication process to be effective it requires a logical organization of thoughts and ideas related to the main subject and common to both speaker and listener. Sometimes this communication process can be obstructed or misguided either by a poor choice of words by the speaker or improper use of nonverbal elements in expressing ideas.

There is also a clear distinction between hearing and listening. When you hear, you are fulfilling a human and physical function. You hear sound waves and noises. You hear a baby cry. You hear your teacher giving instructions. When you listen, you go beyond the physical aspect of hearing. You analyze each sound and noise and interpret its meaning. The baby's cry turns into a cry for hunger, fear or pain. Your teacher's instructions suddenly become orders that need to be followed. When we fail to understand the instructions given, could it be that we are actually just hearing and not listening? Perhaps the answer is not within ourselves but with the environment.

Many times people want to be polite and listen to others as they speak. There are times however, when no matter how hard you try, you can not hear the speaker. For instance, if during a public meeting the speaker has a low voice and/or the public address system is not working properly, you may be unable to understand the message at

all. Your listening ability is limited to the distance between you and the speaker. The same barriers arise if you are too close to a person and their voice is too loud. You will certainly hear the message, but the volume or tone of the voice may become a barrier to keep you from "listening." You become more concerned with your welfare than with the content of the message.

There is great importance in understanding nonverbal communication as it relates to effective listening skills. People who have a greater awareness of the significance of nonverbal actions can insure accurate expression of their own feelings. They can also be more successful in their intimate relationships, in artistic endeavors such as acting or in work that involves the persuasion, leadership and organization of others.

When we talk about body language, we do not mean that we really carry on conversations through our bodies about any topic. There is more to conversation than an audio tape or a typescript of the words could tell us. What it really means is that people express themselves in all sorts of ways, sometimes adding to and sometimes altering or negating what they are saying in words. There is a lot of truth in the notion that people communicate in many different ways; by words, by tone of voice, by facial expressions, by body movements, by the use of physical space between one person and another and other psychological responses.

Statement of the Problem and the Study's Purpose

The purpose of this study is to investigate, test, and analyze the reason or reasons why students at Austin Peay State University may be victims of a "communication gap" in their everyday classes. It is the intention of this study to confirm three research questions (RQ):

RQ1: Do college students listen and understand a lecture more effectively because of the topic or because of the way the topic is presented?

RQ2: Do nonverbal elements such as hand gestures, facial expressions or body movements contribute to the flow of ideas and the retention of information or can they be distracting?

RQ3: Is the initial level of interest in a particular subject what really determines how much a listener really listens and how much is just simply heard?

The results from this study will originate benefits not only to the subjects involved in the research process but also to other students and educators as well. By understanding the common barriers to effective listening, lecturers can anticipate problems and distractions among

college students. This study will attempt to prove the following hypothesis:

HYPOTHESIS: The amount of nonverbal communication utilized by a lecturer contributes to improvement in listening effectiveness of the audience.

Justification for the Study

University students have various learning styles and abilities. This diversity in the learning process is influenced by differences in social, economic and cultural backgrounds. As they proceed through their scholastic life, their instructors become a common factor in proper development as students. Generally, it is the instructor's responsibility to analyze, evaluate and present the information to students in the best and most comprehensive way possible. However, there are many occasions when instructors do their best to introduce new ideas and concepts but the students seem unable to comprehend or assimilate the material. This may be due to numerous distractions during the communication process.

Instructors play a significant role in the communication process as speakers. They must be knowledgeable and effective in different instructional techniques. The students represent the audience, in this

case the receivers. They also play a major function in the communication process because through feedback, the speaker is capable of determining how effectively a message was transmitted and received. If the message is interesting to the audience, this may require less effort from the instructor in the method of presentation. But, if the message is of no particular interest to the audience, the speaker will need to rely on various resources in order to create and maintain an interest in the topic. These resources are intended mainly to help the student "listen" and understand the message, not just simply hear it.

One of these resources is known as nonverbal communication or body language. Therefore, this study is justified by the need for instructors to understand the basic characteristics of effective listening skills and how proper use of nonverbal communication can contribute to improve listening effectiveness during a lecture.

The results from this research can assist instructors in understanding better how students learn and how they can be helped in developing effective listening skills.

Definition of Terms

The following list of terms represents the vocabulary upon which this study was conducted. A clear understanding of each definition will provide the reader with the required knowledge to comprehend the ideas presented in this investigation. Some terms and definitions were conceived by

the author as they relate to the experimental research.

Academic year - This term relates to the scholastic year at which the subjects are enrolled at the time of the experimentation (e.g. sophomore, junior, etc).

Aesthetic - "A branch of philosophy dealing with the nature of beauty, art, and taste and with the creation and appreciation of beauty" (Mish, 1986).

Audio track - For purposes of this study, this term represents the audio section of a videotape which contains the recorded sound of the lecturer's voice.

Communication gap - The point at which the message in the communication process can be interrupted between a speaker and the audience.

Grade-point-average (GPA) - "The average obtained by dividing the total number of grade points earned by the total number of credits attempted - called also quality point average" (Mish, 1986). For purposes of this study, the grade-point-average will represent an estimate of the subject's academic status.

Instructional mode - In this investigation, this term refers to the instructional techniques preferred by the subjects (e.g. formal lecture, video presentation, etc).

RQ - Research question.

Treatment titles - In this study, there are three treatment titles utilized. They are defined as follows:

1 - Audio recording - A testing situation where

the subjects are exposed to the sound or audio track of a video recorded lecture without a visual image of the lecturer (also referred to as Group A).

2 - Talking head - For purposes of this study this term refers to a testing situation where the subjects are exposed to a video recorded lecture where only the lecturer's face can be seen (also referred to as Group B).

3 - Medium shot - A testing situation where the subjects are exposed to a video recorded lecture where the lecturer can be seen from the top of the head down to waist level (also referred to as Group C).

Video monitor - A television set where the subjects will see and/or hear the video recorded lecture.

Listening Skills Research

With the initial identification of a research topic and the study's purpose, a justification for the study is submitted in the introductory chapter. Following this, chapter two represents a review of related literature in relation to basic characteristics of effective listening and barriers to listening. It also includes additional researches conducted in the relationship between nonverbal elements of communication and listening. Next, chapter three explains the methodology to be followed during the investigation and experimentation along with a description of the subjects involved. After this, chapter four introduces the results generated from the experiment.

Finally, the thesis is concluded in chapter five with a summary of the analyzed data and recommendations for future research.

Review of Related Literature

Effective Listening Skills

An approach in defining listening with a higher level of credibility, is the scientific definition as found in Wolvin and Coakley's book Listening (1982): "The hearing process is complicated by the intricacies of the hearing mechanism. Sound waves are received by the ear and transmitted to the brain." Since this is a natural process, it must then be natural for everyone to understand a two-way communication process. We must however, question if this holds true when communicating with deaf individuals? "The complex process of hearing, which may never be fully understood by scientists, is made all the more complicated with malfunctions to the hearing mechanism" (Wolvin, et al., 1982). So the common denominator here is the message, regardless of the kind of channel through which the message is sent or received.

One reason an individual may be unable to listen effectively, could be lack of intelligence. The Bible has many stories and parables which requires a certain level of intelligence and knowledge to understand. At one time, Jesus Christ explained how everyone may not have the ability to listen. In Matthew 13:9, we find a request from Jesus Christ: "He who has ears to hear, let him hear." Not everyone could understand His words, but only those with the

right attitude. He indicates this when talking with His disciples about the rest of the people, "Because it has been given to you to know the mysteries of the kingdom of heaven, but to them it has not been given" (Matthew 13:11).

Eastwood Atwater (1981), professor of psychology, developed a nine question test to find out how effectively a person listens. He pointed out that in order for this test to be valid, it must be performed while listening to a conversation. The next time someone begins a conversation, you must ask yourself the following questions. When someone talks, are you:

- 1 - easily distracted by other events?
- 2 - faking attention or acting polite?
- 3 - reacting to emotional words?
- 4 - interrupting frequently?
- 5 - tuning out uninteresting topics?
- 6 - day dreaming, if the speaker is slow?
- 7 - jumping to conclusions?
- 8 - finding fault with the message?
- 9 - thinking of what you want to say?

Your grade level as a listener is related to the number of questions you answer with "yes." The higher your score in the number of affirmative answers, the less you are really listening. This test proves that we are only humans and as such, subject to errors.

When psychologists ask their clients questions, they

should ask in a neutral tone of voice. They try to gain information, recording what is seen and heard in terms of emotions and physical actions in order to avoid misinterpretations. When you listen to someone, you must be careful not to add, change the feelings, or modify the behavior of the speaker. In a book edited by James Raney (1984), Dr. Theodore L. Dorpat states, "The question-and-answer pattern of communication is made of an interaction that both partners contribute to and participate in." He explained that in this interaction process, you must try to receive the information as pure as possible, with its original feelings and ideas. The moment you start sympathizing or consoling the speaker, you may lose a neutral attitude in listening. Facts could become less important as soon as feelings take over.

There are eight barriers to effective listening listed in a book by Ronald B. Adler and Neal Towne (1984).

Message Overload - Adler and Towne indicate that the amount of listening a person may be required to do everyday can limit the attention necessary in order to choose listening topics.

Preoccupation - As we go through life, we set priorities which may interfere or keep the mind busy when trying to listen to someone. "It's hard to pay attention to someone else when you are anticipating an upcoming test or thinking about the wonderful time you had last night with a

good friend" (Adler, et al., 1984).

Rapid Thought - Normally, people can think faster than they can talk. It is important to be aware of this and not "daydream" because the speaker is slow, boring or difficult to understand. It is imperative to put all efforts into understanding other people's ideas.

Physical Noise - As discussed before, not only distance but also the environment will influence our ability to listen. People may be willing to listen but if they feel physically uncomfortable in any way, their welfare will become their priority.

Hearing Problems - This case is not shared by everyone but it is credited with many misinterpretations in the communication process. When individuals are aware of this condition, they will put more effort into listening. When they are not aware or do not suspect a hearing problem, they can be judged as disrespectful or with having a lack of interest. People need to know their limit or receive training in this area. Professional medical advice is highly recommended.

Faulty Assumptions - There is almost always something new to be said about any subject. People may think that they are too intelligent to listen to what someone else has to say because the speaker begins talking about a familiar subject. Familiarity with the topic does not mean that the listener will already know everything that is to be said.

It is important to listen carefully to other's opinions before deciding whether a particular subject is of any importance or not. It may not be intriguing to you but it may be revealing to others.

Talking Has More Apparent Advantages - We are living in a communication era and people have a desire to express their ideas about anything and everything. If someone does absolutely nothing but listen, the rest of the people may assume that they are deaf, do not know the language, are extremely shy, not intelligent enough to converse, or are antisocial. The need to be accepted by others makes a lot of people talk when they really should be listening.

We Are Not Trained To Listen Well - "The truth is that listening is a skill much like speaking; virtually everybody does it, though few people do it well" (Adler, et al., 1984). For someone to be a good listener, they must first know the barriers that exist in listening and how to avoid getting trapped in any of those barriers. Not everyone is born with listening skills but they can practice and develop these skills which are so important in a conversation.

The process of listening can not be effective unless people understand the barriers and limits of listening as well as their own abilities. "Before people can listen objectively, they must know themselves so that their values, judgements, and needs are not imposed on the client, (in our case the speaker) and nothing within them gets in the way of

what the client shares" (Davis, 1984).

Everyone is different, with different life-styles and interests. People often develop their own particular style of listening, each adjusting to a specific type of listening. Dr. Ralph G. Nichols and Dr. Thomas R. Lewis (1954) defined three types of listening, with the first type being known as appreciative listening. Appreciative listening occurs when an individual is stimulated through the senses. Someone or something such as music, mass media, an aggressive speech or theatrical activities "grabs" the listener's attention. "Appreciative listening is the highly individualized process of listening in order to obtain sensory stimulation or enjoyment through the works and experiences of others" (Wolvin, et al., 1982).

Dr. Nichols, et al., (1954) also explained five methods which listeners can follow to increase their appreciative listening skills:

- 1) Identify the things you like most.
- 2) Verify why you like those things.
- 3) Observe how those things you like most affect others.
- 4) Broaden your horizons by searching for new aesthetic expressions.
- 5) After locating a new aesthetic expression, study it, discuss it with others, and return to it for new insights.

Good appreciative listening does not develop overnight. "Appreciative listening, then, depends chiefly upon our willingness to learn" (Wolvin, et al., 1982).

The second type of listening described by Nichols and Lewis (1954) is critical listening. The purpose of this type of listening is to evaluate a speaker's argument and evidence. "Listening to the tone of a person's voice probably gives as precise a compact set of (coded) information as there is available in a unit package (miniaturized circuitry) to collect about the other person's state of mind" (Ernst, 1973). The critical listener encounters the decision to accept or reject the message. This decision could be based on personal knowledge, past experience or a combination of both. Andrew D. Wolvin and Carolyn Gwynn Coakley (1982) made the following reference concerning the importance of becoming critical listeners:

As speakers, men have become schooled in the arts of persuasion, and without the counter-art of listening a man can be persuaded - even by his own words - to eat foods that ruin his liver, to abstain from killing flies, to vote away his right to vote, and to murder his fellows in the name of righteousness. The art of listening holds for us the desperate hope of withstanding the spreading ravages of commercial, nationalistic and ideological persuasion.

Statements may sound very convincing but actually be generated from unreliable sources. "As listeners, we are also influenced by the profession of a speaker. In a February 1979, Harris poll, interviewers found that more than twice as many Americans had a great deal of confidence in television news, higher educational institutions, and medicine than they had in law firms, the White House, and organized labor" (Wolvin, et al., 1982).

Allan Monroe (1955) developed the following five step process known as the "motivated sequence." These steps as modified and interpreted below may be used to assist in developing good critical listening skills.

Attention Step - Is the speaker taking advantage of my emotions to gain attention? Is the speaker "hypnotizing" the audience for his own benefit?

Need Step - Do I listen to the speaker because I want to or because I have to? Is the speaker's message addressing my needs?

Satisfaction Step - Is the message fulfilling my needs? Is the speaker presenting enough evidence to support his argument?

Visualization Step - Is the speaker presenting a clear idea of the consequences involving the argument? Are these ideas clear in my mind?

Action Step - What can I say in order to challenge the speaker's evidence? Am I motivated to continue listening?

It is important to note that the development of critical listening skills requires a great deal of research and practice. The act of listening could be jeopardized by concentrating too much on all the other aspects associated with listening.

Discriminative listening is the third type of listening reported by Nichols and Lewis (1954). "Its purpose is for comprehension - and perhaps later utilization - of the ideas and information of the speaker" (Nichols, et al., 1954). In other words, the basis for analyzing the effectiveness of discriminative listening would be determined by how much you learn just by listening. This type of listening skill is very useful not only in everyday life, but in school and business as well. It is basically the way babies learn how to associate the sounds they hear with the meaning of words and phrases. They are able to distinguish between important sounds and environmental sounds. When babies grow to school age, they are able to distinguish their mother's voice over other voices. To an infant, other sounds are just noises in the environment; they are not meaningful. Contrary to this, the mother's voice has many meanings; love, respect, guidance and protection. As children get older, they learn how words can differ in pitch, tone and intensity. They begin to recognize differences in patterns and meanings as well as proper word and sentence structure. "When we are quite young, we begin to develop many of the essential

auditory skills that are undeveloped" (Wolvin, et al., 1982). It is important to expand discriminative listening skills in all areas so that people may be aware of their surroundings as they relate to them. As adults, it is also important to enhance discriminative listening skills so that help can be offered to those whose skills are not yet fully developed.

Numerous authors have expressed their definition of listening and why listening is so important. However, others such as Ronald B. Adler and Neal Towne (1984) have also classified different types of non-listening situations. There are times when listeners may have to ask speakers to repeat what they have said because they (the listeners) were not paying attention. Other times, listeners may appear interested in the subject, but are really thinking of something else. These events are also referred to as types of non-listening behavior.

Pseudolistening - "Whatever the reason, the significant fact is that pseudolistening is really counterfeit communication" (Adler, et al., 1984). Pseudolisteners are the type of people that pretend to be listening when in reality they are not. They could be considered actors, playing their part as listeners in a one-way communication process.

Stage-hogging - "They are interested in expressing their ideas and don't care about what anyone else has to

say" (Adler, et al., 1984). This is another example of a one-way conversation in which the listener is virtually limited to listening to a speech. "Stage-hogging" speakers will not allow you to express your opinion unless they know that it is either short or that they can use it to their own benefit.

Selective Listening - This type of attitude is closely related to "stage-hogging." These individuals listen to only those topics that interests them. Unless speakers know ahead of time what subject stimulates their listening audience, they may have problems drawing their attention.

Insulated Listening - "Whenever a topic arises that they would rather not deal with, insulated listeners simply fail to hear or acknowledge it" (Adler, et al., 1984). This type of listener can be found at controversial, political and religious meetings. At times, they may even be a combination of all three prior types of non-listeners.

Defensive Listening - These people are always ready to answer any question or intrigue the speaker, but only for their own benefit. They could also be called "speech lawyers." They wait for a key word or a key phrase you may make in order for them to defend their position. They do not really care about evidence you may present, because they will always be right (Adler, et al., 1984).

Ambushing - Different from the "speech lawyers" of defensive listening, "ambushers" will take whatever you say

and utilize it against you. As Adler, et al. (1984) explain, "these are the 'prosecution attorneys' of the art of listening. If you are not aware of your words, they can turn them against you."

Insensitive Listening - These listeners are so involved with their own thoughts that the message is heard but the meaning is not interpreted or is lost. If an insensitive listener asks you about your family and you comment that they are all dead, the insensitive listener may respond with, "That's Good!" He is not so concerned about your role in a two-way communication process or the message involved. He is more worried about how he performs as a speaker (Adler, et al., 1984).

As we have discussed so far, effective listening skills are an important part of our everyday life. They allow us to take control over social activities. These skills also gives us a greater awareness of the environment. You may also be thinking that listening is not one of the easiest tasks to carry off successfully. Retention is another problem as it relates to effective listening. Studies have shown that people do not continuously concentrate on one subject. "Scientists have found that you must break concentration or focus every two to five seconds" (Raney, 1984).

Effective listening may also be an essential tool in many organizations and corporations. "When you are

motivated to listen better you increase your chances of becoming a more effective manager. When you work at becoming an effective manager you listen better. Whichever way you go, you stand to gain" (Reed, 1985). In the business world, listening has become an important managerial skill. Good listening skills can help managers avoid workplace problems. A study by Clinton O. Longenecker and Patrick R. Liverpool (1988) revealed four managerial listening habits that often irritate employees:

- 1) Continuously looking at the time or out the window during discussions.
- 2) Turning away from employees who are talking.
- 3) Fidgeting during conversations.
- 4) Interrupting with questions or comments.

A number of guidelines are also offered for managers wanting to increase their listening skills. A different approach by Ted Karger (1988) describes the way proactive listening can expand the role of corporate researchers. Five listening formats are presented: observational, measurement, dialogue-in-depth, question-answer, and focus groups discussion.

To increase or modify the level of listening of an audience, Reed (1985) suggests three important aspects that you as a speaker must consider: eye contact, body language, and spoken language. The first aspect that needs attention is your eye contact. In the case of meetings, attenders tend to listen more attentively when they believe the

speaker is interested in them. According to Reed (1985) one way of increasing eye contact is by focusing on one person in the audience. Later on, you can shift from person to person. This creates a sense of importance to the audience and a desire to keep listening. When a speaker continually focuses on the floor or some other inanimate object, hardly ever looking at the audience, the results may often be lost communication and disinterest.

The second important aspect of increasing listening as explained by Reed (1985) is the use of body language. "Speakers can not afford to neglect the significance of their posture and bodily movements as a means of gaining and keeping the audience interested in the subject" (Reed, 1985).

According to Reed's research (1985) the last aspect involves the very essence of a speech; the language. He explained that, as a speaker, you may keep eye contact all the time or have excellent body language, but, if your spoken words are not appropriate, you will lose the audience. Speakers should also be wary of using words that may trigger negative responses. The use of "non-words such as 'and - a' used as stopgap hesitations before proceeding to a new thought, also get in the way of a speaker's effectiveness and lose the audience" (Reed, 1985).

In 1977, John E. Baird indicated that total listening requires virtually all the senses plus a great deal of

mental activity. One useful technique in testing your listening skills, he says, is by paraphrasing. This is what you should do if are not sure of the message you received. "Paraphrasing goes beyond simply restating the message or putting it in different words; it requires telling the speaker what the message meant to you" (Baird, 1977). He also made reference to what is known as the "Ten Commandments for Good Listening" in his book, The Dynamics of Organizational Communication.

Stop talking - Obviously, you can not listen to others if you are constantly talking. Give them an opportunity to express their ideas while you listen.

Put the speaker at ease - Try not to intimidate the speaker. A comfortable and open minded environment will allow speakers to express their ideas more freely.

Show the speaker that you want to listen - By showing interest in the speech, you will encourage the speaker to continue exposing new ideas to the argument.

Remove distractions - Environmental distractions might be unavoidable at times. Personal distractions such as worries, debts, thoughts or the imagination of other things should be avoided. Good listening requires full attention.

Empathize with the speaker - This does not mean that you have to accept the other person's point of view. It means to see things from a different perspective.

Be patient - At some particular point, you will have

time to express your opinion or refute their argument. Avoid forcing the speaker into saying things out of context or out of time. Let the flow of ideas follow its course. Give the speaker time.

Hold your temper - This is easier said than done. Only practice and a high sense of self-awareness will help you in controlling your emotions. Do not change the subject in the middle of the conversation just because you disagree with what is being said. Allow the speaker to finish and then ask for evidence.

Go easy on argument and criticism - Remember that everyone has their own opinion. What you consider to be right can be seen as wrong by others and vice-versa. Try not to be seen as offensive to others or you may risk the neutrality of the discussion.

Ask questions - Remember to paraphrase if you are not quite sure of the intentions of the speaker. Never be afraid of asking questions. People often hesitate to ask questions, fearing that their question may sound "stupid". The only "stupid" question is the question you have and fail to ask.

Stop talking - Once you are given the opportunity to ask questions or expose your point of view, stop talking again. Remember, your main purpose is to listen.

The way we listen to someone may also depend on situational factors, such as whether we are on the job or at

home. "Body language, eye contact and paying attention are all aids to good listening, but they are used in different ways by each of us. Just as there are individual styles of walking, talking, and looking, so are there individual styles of listening" (Atwater, 1981). In many instances, our characteristic listening style is affected by sex-role differences. Studies in this subject have demonstrated that while men tend to concentrate more on the content of the conversation, women tend to pay more attention to the process (McGregor, 1986).

The whole idea of listening is just incredible. "Even the ordinary listener performs countless auditory tasks which call for great accuracy and discrimination" (Ihde, 1976).

Several other researchers have found numerous ways to improve listening skills. With such a diversified subject and the many variables which have been found, it is no surprise to see new findings every day. These studies deal with everything from science to business and school. In an article by Frank Vander Wert (1989) in American Salesman he states: "Listening skills are crucial for career advancements. A good listener will probably avoid errors on the job, save time, and impress the boss for doing superior work. Listening requires focusing on what and how something is said, maintaining eye contact and good posture, and seeking value in what a speaker is relating."

Poor listening skills can also cause great loss of money. "Former University of Minnesota assistant rhetoric professor Dr. Lyman Steil estimates that faulty listening costs U.S. businesses \$1 billion annually" (International Toastmistress Clubs, 1987). Another study by Michael J. Papa and Ethel C. Glenn (1988) presented in the Journal of Business Communication supports the hypothesis that "differences in employee listening ability account for a significant variance in employee performance with new technology, and that employees who participate in a listening training program perform at higher levels with new technology than those who receive no such training."

A number of recent researches deal with the psychological aspects of listening. Anthony J. Clark (1989) conducted an investigation of the relationships of willingness to communicate, communication apprehension and receiver apprehension to comprehension of content and emotional meaning in spoken messages. Several other investigations conclude that the act of listening is "the missing side of school communication" (Hinds, et al., 1987). Others suggest that listening is not being taught properly. All of these researches agree on one thing; the need to develop strong listening skills.

Effects of Nonverbal Elements in the Communication Process

According to a researcher, "nonverbal communication falls into three categories; sign language, action language

and object language" (Heslin, et al., 1982).

Sign Language - This includes all those forms of expressions in which words, numbers and signs have been substituted by gestures (e.g. hitch hiker's sign, language of the deaf).

Body Movements - This includes all movements that are not used exclusively as signals. They normally have a dual function. On one hand they serve personal needs and on the other they constitute statements to those who may perceive them at any given time (e.g. walking, drinking).

Object Language - This includes all intentional and unintentional display of material things. Elements such as machines, art objects, architectural structures and whatever clothes cover the body are also included.

According to Heslin, et al., (1982) sign, action and object languages usually require a certain space that ordinarily cannot be modified. Different nonverbal languages do not appeal to the same senses. Sign language is perceived by the eye much in the way spoken language is received by the ear. However, the researcher also explained that action language may be perceived by the eye, the ear and sometimes through the sense of touch (e.g. temperature, pain), whereas object language appeals to distance and closeness as well as the senses of taste and smell.

All these characteristics of nonverbal communication have notable effects upon the mutual position of the

participants in a communication relationship. "Nonverbal communication take on prime importance in situations where words fail completely" (Rosenthal, et al., 1979).

In the communication process the message is not limited to the spoken word only. Body language has been defined as nonverbal communication: the gestures and mannerism by which a person communicates with others (Ekman, et al., 1969). It involves all other channels of communication not expressed by words. Our use of space, and numerous other signals play a crucial role in communication. These signals include the use of silence and the body rhythm of our movements (Mehrabian, 1971). Without a clear understanding of the relationship between these nonverbal elements and good listening skills, the transmission of messages from sender to receiver can be hindered.

The overwhelming majority of organizations in the United States include individuals with a variety of multicultural backgrounds. "People are generally discouraged from an overt (linguistic) expression of their feelings, so they convey them in less consensual and less easily recognizable forms" (Mehrabian, 1971). These forms are known as body language or nonverbal communication.

According to Nichols, et al., (1954) nonverbal behavior refers to actions as distinct from speech. In their research, they defined two principal modes of communication, digital and analogic. They explained that digital

communication takes place in discrete step intervals, principally via language. This is the area of communication that involves written or spoken words and numbers sequenced one after another. They also explained that this type of communication is conducted basically on the level of consciousness. They affirmed that the study of body language must concentrate on the analogic mode. It involves symbols or actions which in their proportions or relations bear a similarity to a thing, idea, feeling or event. Nichols, et al. (1954) indicated that body language takes place in an unconscious level of communication. The combination of these two modes (analogic and digital) creates our every day communication.

Cultural barriers such as geographical areas, or a different language may influence our means of communication (Ekman, et al., 1969). Each culture has developed specific patterns of behavior for each of the channels of interpersonal communication. Other writers and researchers also include behaviorally relevant attributes such as physical appearance, body odor and artifactual cues. "Artifactual cues include items such as clothing, glasses or jewelry" (Patterson, 1983).

Another important consideration deals with mass communication. A lecturer capable of recognizing their own strengths and weakness in both verbal and nonverbal communication, can select the proper medium for delivering

a message to the masses. "A politician relying more heavily on his gestures and facial expressions than on his tone of voice may make a good showing on television, but may be less effective on radio" (Benthall, et al., 1975). The contribution of our actions rather than our speech is especially significant since it is inseparable from the feelings that we knowingly or inadvertently project.

Albert Mehrabian (1971) conducted studies based on a research by Ekman and Friesen (1969) in which they proposed five major categories of nonverbal behavior. The first category is known as EMBLEM. According to his findings this refers to the small class of nonverbal acts that can be accurately translated into words. Some examples of these acts can be a smile, a hand shake or shaking a fist at someone.

The second category is known as ILLUSTRATOR. This category is related to speech and serves the function of emphasis. The concept behind this kind of nonverbal communication as explained in his research, is to facilitate the understanding of the main idea in the message. A turn of the head, pointing with the hand or tracing the contour of an object are examples of this type of behavior. They add punctuation to the object or the person referred to verbally. The third category deals with feelings and is known as AFFECT DISPLAY. These are emotions that can be distinguished and understood by the majority of people.

Such emotions include happiness, anger, surprise, fear, disgust and sadness among others.

The fourth category is known as REGULATOR. This kind of nonverbal communication refers to acts that help to initiate and terminate the speech of participants in a social situation. This may also suggest the speaker should keep talking.

The fifth category is known as ADAPTOR. This type of behavior refers to the acts that are related to the satisfaction of bodily needs such as moving into a more comfortable position or scratching.

In studies involving the gender of participants, investigators found that females generally had more eye contact with each other during a conversation than did males (Westlake, 1969). They also found that members of both sexes had less eye contact with one another when the interaction was adverse. Another discovery was that males had a tendency to decrease their eye contact over a period of time and females tended to increase it. Other researchers explained that the degree of eye contact decreased as the distance between subjects decreased (Siegman, et al., 1978). Based on these premises, it should not be surprising to find that cultures having the greatest preference for physical closeness also show less preference for more eye contact.

Study results have also indicated that eye contact can be significantly related to status differences (Ruben,

1975). It was determined that eye contact is moderate with a very high-status addressee, at a maximum with a moderately high-status addressee and at a minimum with a very low-status addressee. Although the amount of eye contact varies from individual to individual and culture to culture, it is still a strong element in nonverbal communication.

Facial expressions and gestures are an important part of the effort to explain an idea or to convey a feeling. Even when speakers know that their facial expressions are not available to their listeners, (e.g. radio broadcaster), they do not stop using them or automatically start using other behaviors to compensate for their absence.

In a study conducted by Mehrabian (1971) the subjects were asked to produce sarcastic messages that were to be audio recorded. Many subjects who tried to be sarcastic consistently relied on their facial expressions. When the recordings were heard, they were found to be totally lacking in sarcasm. It was proven that body language is not only an effective way to communicate, but an unconscious way to communicate.

Nonverbal communication is often conducted through three prominent channels; audible, visible and body movement (Dittmann, 1974). These are systems or forms of expression by which we communicate with others. They can also be channels of emotional messages. A study by Dittmann (1974) explains the importance of these communication channels

normally used by individuals. Heslin, et al., (1982) go beyond this study in an attempt to define each individual channel.

Audible channels include information from speech other than that derived from the words which are spoken. It includes what is ordinarily called "tone of voice." Sometimes you can tell that someone is angry by the way he talks to you or answers a question. People's attitudes can be reflected in nonverbal behavior (Heslin, et al., 1982).

Many facial expressions such as smiles and frowns make up the content of messages transmitted over visible channels. Heslin, et al., (1982) indicated that "using techniques such as live, videotaped or photographic presentation of natural or role played emotions have generally indicated considerable accuracy in judging emotional states from facial expressions." The study of body movement is very complicated. There are many body areas to be moved to begin with, and in many circumstances they can be moved quite independently. Several body movements have been treated as discrete categorical events in research. There are head nods, gaze direction and combination of body positions. Many variables have been studied in the body movement channel (Heslin, et al., 1982). One of these variables is known as body orientation; how squarely one person faces another. Another variable is body accessibility; whether the body is kept covered by the arms

with legs close together or relatively open (Reed, 1985).

Heslin, et al., (1982) explained that "action language is the principal way in which emotions are expressed". Imagine that during an argument a person slams his fist upon a table. This action, along with other signs of tension and frustration, is well understood by others. The combination of verbal and nonverbal communication can enlighten but also can obscure issues in a conversation. Many words can be used to conceal forthcoming actions. Contradictory expressions may be used to create confusion as well.

An example given by Heslin and Patterson (1982) involves American and Javanese business men at a cocktail party in Java. The American was seeking to develop a business relationship with a prominent Javanese and seemed to be doing very well. Yet, when the cocktail party ended, so apparently did a promising beginning. The result was that the American spent nearly six months trying to arrange a second meeting. He finally learned, through pitying intermediaries, that at the cocktail party he had momentarily placed his arm on the shoulder of the Javanese in the presence of other people. This act, in Javanese tradition, is considered humiliating. A complete knowledge of the language of another culture does not prepare a person for the behavioral differences.

There are many functions for nonverbal behavior in human-relations workshops. "Nonverbal behavior can help

people experience themselves and others in new and deeper ways." (Knapp, et al., 1985). There are many assumptions underlying the use of nonverbal behavior as a central focus in human-relations training. According to Siegman, et al. (1978) one of these assumptions is that "facilitating a comfortable experience with nonverbal intimacy in a training group should generalize to situations outside of that group." Another assumption by Weitz (1974) is that "the openness and honesty stimulated by nonverbal behavior should transfer to verbal behavior." However, Siegman, et al. (1978) expressed that it is possible for nonverbal behavior to be deliberately managed to represent reactions not genuinely felt: "From languages using body movements as their medium to 'body language' as the term is used so often today, is a long step."

Summary

In short, people communicate by making statements. These statements are signals that are coded in various prearranged ways. When they refer to earlier impressions, they become signs. These signs, exist only in the minds of people, because their interpretation is based upon prior agreements. A statement becomes a message when it has been perceived and interpreted by another person. When sender and receiver can consensually validate an interpretation of the digital mode (words) and the analogic mode (gestures), then the process of communication is complete and

successful. When lecturers are aware of the different kinds of nonverbal communication and their relationship, they may use them for their advantage when presenting a particular speech. A proper knowledge of nonverbal communication, its characteristics and relationship to effective listening skills can increase the possibilities of greater attention from the audience.

We are constantly reading each other or trying to using all the information we can get from sources other than just the words that pass between us. An attractive feature of nonverbal communication as a research area is that it can capture the interest of different disciplinary backgrounds (e.g. linguists, psychiatrists, sociologists).

This work is only a minor abstract of the many studies related to listening and nonverbal communication. A particular definition for listening may never be found because the act itself is as unique as people. Many are simple definitions, others are quite complex, but a definition is important. Good listening skills do not develop overnight. It takes practice and assistance from professionals or experienced people to understand the different kinds of listening. It is also important to be aware of barriers to listening. These barriers can easily obstruct the communication process. However, knowing them and their consequences can assist the speaker in communicating effectively. The types of listening are many

and so are the types of non-listening. They are different, yet, they can be found in combinations and disrupt the speaker's message. To improve our listening skills, it is wise to follow the rules and guidelines set by experts in the subject.

The ability to listen correctly will increase in proportion to a person's desire for improvement. Future researches and investigations will bring new light to this intriguing and variable subject. At the end, they will all concur in one thing; responsible listening is everyone's duty, but to listen or not to listen, is everyone's choice.

Conclusion

The following chapter includes the methodology applied during the experiment of this research. The intent is to examine the relationship between the use of nonverbal elements of communication and the improvement of effective listening of the audience.

Design of the Experimental Study

Subjects. This study involved the use of seventy-five college students as experimental subjects and one college professor as a lecturer; all volunteers. The subjects were selected from three separate class sessions in the Department of Speech, Communication and Theatre at Austin Peay State University. The data were collected from students that ranged in academic standing from freshmen to seniors including some nontraditional students. Students with an academic major other than mathematics were chosen due to the nature of the research and the content of the lecture. To insure the legitimacy of the research and to avoid a biased answer, student candidates were presented with an initial questionnaire (see Appendix A) several days before the actual test to verify they fulfilled the following requirements:

1. Student does not recognize the lecturer - This allowed the researcher to avoid any student who would have given more attention to the lecture because of familiarity with the lecturer.

2. Student is not interested in the subject - If the students are interested in the subject, they are more likely to retain the information. This study, however, was not intended to test and compare memory capabilities.

3. Student's grade point average - To insure a diversity of grade levels among the subjects.
4. Student's academic year - To insure a variety of academic levels among the subjects.
5. Student's preferred instructional mode - To provide a heterogeneous grouping of instructional preferences.

Permission Forms

In accordance with requirements for conducting the research, two different permission forms were required. An experimental proposal including a completed checklist for research involving human subject was forwarded and approved by the Human Research Review Committee (see Appendix B). A statement of informed consent was signed and collected from all subject involved in the experiment (see Appendix C).

Finally, a letter of approval was signed by the lecturer in order to utilize the content of the lecture for the experiment (see Appendix D). Additional authorization was granted without the need of written statements for the use of various technical facilities such as video cameras, the television studio and the use of computer programs.

Description of the Experimental Instruments

Experimental Apparatus. A lecture of approximately fourteen minutes was recorded and videotaped. The lecturer was given a checklist (several weeks before the actual recording of the lecture [see Appendix E]) to take into consideration when preparing the lecture . The main topic

selected for the experiment was a lecture on principles of statistical inference. This topic was selected because the majority of the subjects that were pretested placed mathematics as their least preferred subject when compared to nine other academic subjects (see Appendix A).

The recording section of the lecture was made with the use of two video cameras simultaneously. This insured that each of the groups would receive exactly the same amount of information. Each camera videotaped the lecturer from the same angle but from a different perspective. A copy of the audio track from one of the videotapes was edited onto another videotape.

There were three copies of the recorded lecture. Copy #1 consisted of the recorded message of the lecture without a visual image of the lecturer. This copy was presented to the subjects with the use of a video tape recorder and a video monitor with no image of the lecturer. For purposes of identification, this copy was referred to as "audio recording." Copy #2 consisted of the recorded message of the lecture and included a visual image or video shot of the lecturer's face only. This copy was presented to the subjects with the use of a video monitor. For purposes of identification, this copy was referred to as "talking head." Copy #3 also included the recorded message of the lecture but a different visual image which consisted of a video shot of the lecturer from the waist up. This copy was also

presented to the subjects with for the use of a video monitor. For purposes of identification, this copy was referred to as "medium shot."

Evaluation Instruments. Three questionnaires were developed for this research. The first questionnaire (see Appendix A) was created to select adequate candidates for the experiment. This questionnaire consisted of six parts which included questions dealing with demographic information, personal interests and general knowledge. From the results of this questionnaire it was determined that some changes were needed in the wording of the instructions. It was also determined that none of the potential candidates recognized the lecturer. It was also determined that all three experimental groups fulfilled the initial requirements. The second questionnaire, referred to as the pretest questionnaire (see Appendix F), was developed from the initial questionnaire. The purpose of this questionnaire was to record the initial level of interest of the subjects to mathematics prior to the actual test. Also, within the second questionnaire, there was a section which included questions referring to demographic information. This information would prove helpful in the final analysis and comparison of results. The third questionnaire, referred to as the test questionnaire (see Appendix G), consisted of twenty-five questions based on information given by the lecturer. The total recording time of the

lecture was fourteen minutes, so there was an average of two questions asked for each minute of information. Some of the questions were selected from specific instances during the recorded lecture when the lecturer utilized nonverbal elements of communication. The answers for the test questionnaire were recorded on an answer sheet that was provided to the subjects (see Appendix H).

Limitations of the Study

The following limitations of the study are recognized by the investigator as possible influential factors in the gathering of data:

1. Physical conditions - The investigator had no control of any hearing handicap present in any of the subjects. A medical screening was not conducted.
2. Emotional conditions - The investigator had no control of any emotional changes in the subject occurring before or during the actual test which may have influenced the results.
3. Grade-point-average information (GPA) - The investigator had no control over the accuracy of the answers to this demographic section of the questionnaires. The results will be analyzed and presented based on the information given by the subjects.
4. Environmental conditions - Although the experiment took place in a closed classroom environment, the investigator had no control over any possible external

distractions such as loud noises which may have influenced the results.

5. Technical difficulties - All equipment was pretested to insure proper operation during the experiment. The investigator had no control over possible malfunctions during the actual test; however, there were no technical difficulties reported.

6. Recognition of the lecturer - The subjects were pretested with the initial questionnaire several weeks before the actual test to avoid this situation. The investigator had no control over the possibility of an interaction between the subjects and the lecturer from that date to the date of the actual test.

7. Familiarity with the lecture - When recording the lecture, the investigator had no control over familiarity of the subjects with the content of the lecture.

Procedure

The total time required for the experiment was thirty minutes including viewing or listening to the recorded lecture and answering the pretest and test questionnaires.

The students were divided into three equal groups of twenty one students each. For the analysis of the results, the original number of subjects (25) was modified due to various reasons. In the first group (group A), two subjects did not participate in the experiment and two subjects filled out the questionnaire incorrectly. The

result was a total of only twenty-one subjects available from this group. In the third group (group C), four subjects terminated their participation during the actual experimentation. This action also resulted in the availability of only twenty-one subjects. In the second group (group B), however, all subjects participated in the experiment. The investigator then decided to select only twenty-one subjects from a total of twenty-five. Each answer sheet from this group was given a number (1-25) which was also written on strips of paper placed inside a bag. The appropriate number of subjects (21) were randomly drawn from the bag and the rest eliminated from analysis.

The three groups were named groups A, B and C. Group A was presented the recorded lecture without a visual image of the lecturer (copy #1, audio recording). Group B was presented the recorded lecture which included the lecturer's face only (copy #2, talking head). Group C was presented the recorded lecture which included the lecturer's hands and arms (copy #3, medium shot).

Although there were no foreseeable risks involved in this research, a statement of informed consent was signed and collected from the subjects (see Appendix C). The subjects were informed about their anonymity and freedom of choice to participate. The general concept of the investigation was explained to the subjects but the specific purpose was explained after the test. This prevented the

subjects from trying to memorize the lecture as it was presented.

Each group completed the pretest questionnaire prior to initiating the actual test. The subjects were asked to keep this questionnaire until the end of the video/audio presentation. Each group was tested at a different time and day. As soon as each individual tape/videotape ended, the subjects were administered the test questionnaire which they also completed anonymously. Upon completion of this third questionnaire, the subjects were fully apprised of the specific purpose of the experiment and the potential benefits that could be generated. The data collected were coded and evaluated with the help of a computer program for statistical analysis research.

Method of Statistical Analysis

A statistical analysis of covariance (ANCOVA) was utilized to evaluate the results from the experiment. This method was selected because it "enables one to statistically extract variance from the dependent variable that is accounted for by one or more measured control variables before assessing the effects of the various experimental factors on the dependent variable" (Stempel III, 1989). The variable this investigator was interested in was the level of interest toward the subject matter.

ANCOVA assisted in the comparison of test scores between the audio recording, the medium shot and the talking

head as they related to conditions prior to the test. This method of analysis allowed the investigator to determine the following:

- 1 - If a topic presentation is effective to an audience due to the way it is presented or to its content.
- 2 - If nonverbal elements enhance the flow of ideas in the communication process or not.

The statistical hypothesis known as the null hypothesis was considered in the analysis of covariance. "This hypothesis assumes that there is no significant difference between the mean results of the treatments. That is, that the differences which did occur were due to chance" (Lamond, 1987). It was the intention of this study to reject the null hypothesis. In the analysis of the results, the investigator will agree or disagree with the research hypothesis.

A second method of statistical analysis known as the product moment correlation coefficient (Pearson r) was also utilized. This method of statistical analysis measures the strength of the relationship between two variables. This test provided grounds to determine if there was a relationship between the initial level of interest of the subjects and the test scores.

The interpretation of the Pearson r correlation coefficient was based on guidelines provided by Guilford and Williams (Stempel III, 1989). These guidelines determined

the strength of the correlation between the two variables.

Finally, the results of a Scheffe test are included for multiple comparison of the means of the treatment groups. This test was applied for comparison involving one or more means averaged together (e.g., treatment of group A compared to the average of groups B and C respectively). All tests and the analysis of the data were calculated with the use of a computerized program at the 0.05 level of significance.

In the following chapter, the analysis of the study results are examined. After this, the summary of the analysis and the recommendations for future research are presented in chapter 5.

CHAPTER 4

Analysis of the Study Results

The results of the questionnaire and the experimentation were computed based on the analysis of covariance (ANCOVA) as described in chapter three. In addition, two other tests (Pearson r and Scheffe) were also utilized in the comparison of the tests scores. These results provided the supporting material needed in order to effectively evaluate the following:

- 1 - To understand the reason or reasons why some students may listen better to a lecturer than others.
- 2 - To compare the effectiveness of using and not using nonverbal elements of communication in the presentation of a lecture.
- 3 - To investigate if there is a relationship between the initial level of interest of the audience to a particular topic and the level of listening skills.

Table 1 indicates the overall effect of the treatments on the scores. It was determined that the type of treatment utilized to represent the lecture to the subjects had a significant difference in answering the test questionnaire correctly. The results concluded that a figure of $F = 14.95$ with a probability of 0.0001 is a significant score. This indicated that there is a significant effect of treatment on scores.

Analysis of Covariance of the Effect of Treatment on Scores
with Conditions Prior to the Test

Source Variation Groups A-B-C Estimated	Adjusted SS	df
Between 254.58	509.17	2
Within 17.03	1004.63	59
Total	1513.80	61
F-Ratio =	14.95	
Probability =	0.0001	

In order to effectively understand the results of the study, the data were analyzed independently and compared. The results from the initial questionnaire were coded and tabulated in order to record the initial level of interest to mathematics and the preferred instructional mode. As indicated in Table 2, the percentage of students that placed mathematics as their least preferred subject for a lecture was forty-two percent. However, the total percentage of students that placed mathematics within the five least preferred subjects for a lecture was eighty-one percent. This was indicative that the majority of the subjects tested were not interested in the subject of the lecture. This condition also fulfilled one of the requirements for selecting the appropriate subjects for testing.

Table 3 represents the percentage of students that selected a videotaped presentation as their most preferred instructional mode. It was determined that from a total of sixty-three subjects, only six percent selected a videotaped presentation as their favorite instructional mode. It is interesting to note that the majority of the students, eighty-four percent, selected group discussions as their preferred instructional mode. With only four subjects selecting a videotaped presentation as their preferred mode for a lecture, it could be determined that the subjects were not necessarily inclined to listen to the recorded lecture because of the way it was presented.

Students Marking Mathematic Five or Higher as Their Least Preferred Subject

Groups A-B-C	5	6	7	8	9	10	Total
Number of Answers	1	3	3	6	11	27	51
Percentage	2%	5%	5%	10%	17%	42%	81%

1	2	3	4	5	6	7	8	9	10
Most								Least	
Desirable								Desirable	
Subject	----->						Subject		

Student Preference of Instructional Mode

Groups A-B-C	Most Desirable	Least Desirable	Other	Total
Videotaped Presentation	4 (6%)	0 (0%)	59 (94%)	63 (100%)
Group Discussion	53 (84%)	5 (8%)	5 (8%)	63 (100%)

Each of the parts from the pretest questionnaire (see Appendix F), was coded with numbers in order to analyze the data. Part one was coded with numbers from one to six. Part two was also coded with numbers from one to six. Part three was coded with numbers from one to ten and part four with numbers from one to five.

The first two parts, which included the demographic information of the subjects, were not used for analysis of the test scores but rather to fulfill one of the requirements of selecting a heterogeneous grouping of subjects as presented in chapter one. The results from the second questionnaire were tabulated by assigning one point for each correct answer adding to a possibility of twenty-five points for each test. The total scores from the three groups were calculated in order to obtain a mean for the scores and the average of the highest score and the lowest score. Table 4 describes the findings from this calculation. It was found that from a sample size of sixty-three subjects available and a twenty-five question test, the mean for correct answers was 13.54 with a standard deviation of ± 5.04 . The highest score recorded was 24 from group C. The lowest score recorded was 3 from group B.

In Table 5, the analysis of covariance also provided the adjusted mean of scores for each group tested. The adjusted mean of group A was 13.01. For group B, the adjusted mean was 10.32 and group C recorded an adjusted

Table 4

Analysis of the Mean of Total Scores

Sample Size	63
Mean	13.54
Standard Deviation	5.04
High Score	24
Low Score	3

Analysis of the Mean of the Effect of Treatment on Scores
with Conditions Prior to the Test

Group	Covariate Mean	Dependent Mean	Adjusted Mean
A	3852.52	13.14	13.01
B	8241.81	10.14	10.32
C	5027.67	17.33	17.29

Group	Covariate Standard Deviation	Dependent Standard Deviation	Sample Size
A	828.41	3.92	21
B	12522.14	4.39	21
C	8540.96	4.10	21

Group A - Audio Recording

Group B - Talking Head

Group C - Medium Shot

mean of 17.29. The group with the highest scores in the test was group C (medium shot) followed by group A (audio recording) and finally, group B (talking head).

In order to determine if a truly significant difference exists between the three groups, a multiple comparisons Scheffe test was conducted. The results from this test are presented in table 6 at the 0.05 level of significance.

It was found that between group A and group B there was no significant difference in the treatments recorded at the probability of 0.0714. However, between group A and group C, there was a significant difference recorded at 0.071. The highest significant difference recorded was between groups B and C with a probability of 0.0001. This explains the difference in the results of the tests scores based in the different treatments.

With this analysis, the study hypothesis, which indicated that the amount of nonverbal communication utilized by a lecturer contributes to improvement in listening skills of the audience, was strongly supported. The students in group C scored higher after viewing the videotaped presentation that included the majority of the nonverbal elements.

It was also the intention of this study to verify if there was any significant relationship between the initial level of interest in a topic and the listening level. In order to determine the level of strength of these two

Table 6

Analysis of Multiple Groups Comparisons (Scheffe)

Matrix of Probabilities *			
	A	B	C
A	1.0000	0.0714	0.0071
B	0.0714	1.0000	0.0001
C	0.0071	0.0001	1.0000

* 0.05 level of significance

Group A - Audio Recording

Group B - Talking Head

Group C - Medium Shot

variables, the data were analyzed using the product moment correlation coefficient test (Pearson r). Table 7 represents the results of this analysis. In order to interpret the results, the guidelines provided by Guilford and Williams (Stempel III, 1989) were utilized.

A correlation coefficient of 0.2333 is indicative of a low correlation or small relationship between the initial level of interest and the test scores. It was determined that the initial level of interest of the subjects was not a determining factor in deciding how effectively the subjects listened to the lecture.

Conclusion

The final analysis of the results allowed the investigator to reject the null hypothesis and agree with the study hypothesis. The fact that eighty-four percent of the subjects tested were not interested in mathematics, and that there was a significant difference in tests scores between the groups, answers the third research question.

The majority of the subjects from all three groups were not interested in the topic itself, however, the presentation including the nonverbal elements was more effective. In the second research question, it was suspected that the use of nonverbal elements could be distracting in presenting the information to an audience. With a total average score of 13 correct answers from a 25 question test, the second research question was also

Analysis of the Correlation Between the Initial Level of Interest and Test Scores

Item	Score 1	Score 2
Sample Size	63	63
Mean	6.25	13.54
Standard Deviation	2.42	5.04
Correlation	0.2333 *	
Probability One-Tailed	0.0658	

less than .20	slight correlation; almost negligible relationship
* .20 - .40	low correlation; definite but small relationship
.40 - .70	moderate correlation; substantial relationship
.70 - .90	high correlation; marked relationship
more than .90	very high correlation; very dependable relationship

Guidelines Provided by Guilford and Williams for Interpreting the Strength of a Pearson Correlation Coefficient (Stempel III, 1989).

answered. Not only was the total average score higher than fifty percent of the total questions, but the highest scores occurred with group C, the group viewing the videotape with the nonverbal elements.

Finally, the first research question which dealt with the instructional mode of presentation itself was also answered. The subjects in group C apparently listened to the lecture more effectively because of the way it was presented thus giving more evidence for supporting the study hypothesis. The following chapter represents a summary of the analyzed results along with recommendations for future research.

Summary of Analysis and Recommendations

Summary of Analysis

This study represents an attempt to understand the effectiveness of using nonverbal elements of communication in the improvement of listening skills of an audience. Through an experimentation process, sixty-three university students were tested in order to verify the research hypothesis. It was the intention of this investigation to confirm that the proper use of effective nonverbal elements by a lecturer contributes to improvement in listening skills in the audience.

Although the main purpose of this research was directed toward the audience as listeners, speakers may find the results useful in planning speeches as well. The analysis of the data gathered and the results from the analysis confirmed the study's hypothesis and concluded that the amount of nonverbal elements utilized by a lecturer allows for a significant difference in how much an audience really listens and how much is just simply heard.

For the experimental section of this research, three different treatments were considered:

- 1 - Group A (audio recording)
- 2 - Group B (talking head)
- 3 - Group C (medium shot)

It was predicted that after viewing and/or listening to

a videotaped lecture, the students from group C would answer a post-test questionnaire more accurately than the students in groups A or B. This prediction was supported in the final results.

When first deciding on the experimentation, the investigator wanted to find out if a group of students would listen more effectively to a lecture because of the topic or because of the way it was presented. It was determined that it is possible to increase listening effectiveness even in subjects with low audience interest. In order to study this factor a lecture was presented in the three different forms of communication mentioned before but containing exactly the same information. If the way a lecture is presented is a significant factor then there was to be a difference between the three groups. If the way a lecture is presented is not a significant factor, then all three groups should have scored evenly in the final questionnaire.

The results demonstrated that students who were exposed to the videotaped presentations which included the majority of the nonverbal elements (group C), had better scores than the other two groups. One reason for this could be that the way the lecture was presented did make a difference in how attentive the audience was. However, it was necessary to determine if these students were more attentive because of the mode of presentation or because the topic was interesting. An interest in the topic to be presented could

create a disadvantage within the modes of presentation. Therefore, a pretest screening was conducted in order to obtain the best candidates. It was necessary to find a general topic that all subject (or at least a majority) would find uninteresting or unappealing. The pretest screening resulted in selecting mathematics as a common topic for testing.

A second prediction for the test was that if the student's initial interest in a topic was great, then they would be more attentive no matter how the lecture was presented. The results would probably have been the same for all three groups.

It was concluded that the subjects were tested with a very low initial interest in the topic of the lecture. Therefore, when group C scored better than the other groups in this section, it was determined that the key factor was not the content of the lecture, but the way the lecture was presented.

When conducting the initial research for this investigation, it was brought to this investigator's attention that perhaps nonverbal elements could be distracting in the communication process. Thus, this investigator decided to confirm this by comparing the final results of the questionnaires. If such elements are distracting, then group C would be the group with the least correct answers. The results were actually to the contrary.

As explained before, this group was the one that scored best followed by the audio recording and the talking head last. Nonverbal elements such as hand gestures, facial expressions and body movements contributed to the flow of ideas even when the audience was not interested in the topic or the way it was presented (in this case a videotaped presentation)

In conclusion, this research indicated that the amount of nonverbal elements of communication utilized by a lecturer does have a significant effect in the listening level of the audience. It is important to note that this research represents only one of the many variables that influence the improvement of listening skills. There are many different factors that could be considered, and provide a basis for future research.

Recommendations for Future Research

This study was successful in demonstrating the importance of nonverbal elements in the communication process. Nevertheless, the study of the results here presented can lead to a number of alternative researches.

According to Roper (1979), "Television has clearly established itself as a major news medium in the United States." For many years, television has become an important part of our society. We wake up and turn on the television, we watch television while eating and we fall asleep watching television. Some university students receive their news, are entertained and even plan their daily activities based

on television programming schedules. With such a strong influence, it would be interesting to examine and compare if the results from this study were due to a fascination of college students with television. Perhaps the reason why group C scored better was because of the similarity of the videotaped presentation to an everyday television program.

Another variable that may be studied could be the influence of age in the results of the test. It would be interesting to investigate if differences in age and television viewing behavior could be a determining factor in information retention of a test similar to the one conducted in this research.

Finally, a study by Rubin, et al. (1980) indicated that "environmental context is more influential than chronological age in determining viewing motivation." Although all three groups were tested in the same environment (classroom), a study focusing on the effects of environmental changes could be very revealing in how people listen. A study on the effects of gender and vocal quality of the speaker could also explain why some students would choose to listen to one lecturer over other lecturers.

Since the lecturer selected was male, maybe some students paid more attention to the videotaped presentation than to the audio recording because of similarity to a newscaster. However, an interesting research by Hutchinson (1981) suggested that "the more equal two competing

newscasters are in their news ability, the more likely it is that nonverbal communication will play a role in determining which newscaster the viewer will select." All of these variables provide for numerous researches in the area of listening.

Conclusion

Due to the limited resources of this study, it is important to note that the results from this research constitute only a minor comparison of a particular number of students. Although this study was conducted according to scientific principles of research, the results should not be considered representative of the total student population of Austin Peay State University. A much larger number of experimental subjects and a greater number of comparisons will be required in order to reach a more satisfactory conclusion.

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APPENDIX A

SURVEY QUESTIONNAIRE

DATE _____
 TIME _____
 AGE _____

The purpose of this questionnaire is to develop an instrument of analysis for a research project. Your responses are CONFIDENTIAL. At no time will you be identified nor will anyone other than the investigators have access to your responses. The information collected will be used only for purposes of analysis.

Your participation is completely voluntary, and you are free to terminate your participation at any time without any penalty.

Please, answer the following questions to the best of your ability and as quickly as possible. Circle or write the correct answer.

1. Which of the following represents best your academic year level? (Circle the letter)
 - A. Freshmen.
 - B. Sophomore.
 - C. Junior.
 - D. Senior.
 - E. Graduate School.
 - F. Other. Explain: _____

2. Which of the following represents best your grade point average (GPA)? (Circle the letter)
 - A. 4.00 - 3.90
 - B. 3.89 - 3.50
 - C. 3.49 - 3.00
 - D. 2.99 - 2.50
 - E. 2.49 - 2.00
 - F. 1.99 - below

3. Place the following subjects in your order of preference from one (1) to ten (10).

1	2	3	4	5	6	7	8	9	10
								Least	
								Desirable	
Desirable <----->									

_____History _____Sciences (Biology, Chemistry) _____Languages _____Mathematics _____Social Sciences	_____Politics _____Communications _____Psychology _____Art _____Education
--	---

4. Which of the following Professors or Instructors HAS NOT given you a lecture? (Circle the letter or letters)

A. Dr. Paul D. Shaffer

B. Ms. Yvonne Prather

C. Dr. Rae Hansberry

D. Dr. Reece Elliott

E. Dr. Chin-Zue Chen

F. Dr. Ellen Kanervo

G. Ms. Irisbel Aguayo

H. Dr. John D. Foote

I. Ms. Jeri L. Lee

J. Dr. George Bratton

K. Dr. Mike Gotcher

5. Which of the Professors or Instructors of question #4 you DO NOT recognize? (Circle the name or names)

6. Place the following instructional modes in your order of preference for a lecture.

1	2	3	4	5
Most				Least
Desirable <-----> Desirable				

_____ Audio Recording (Tape recorded and headphones)

_____ Formal Lecture (Professor with students in classroom)

_____ Group Discussion (Classroom environment)

_____ Videotape (TV monitor and videocassette)

_____ Film (Film production)

THANK YOU FOR YOUR COOPERATION

APPENDIX B

APPROVAL OF PROPOSED

— Research Paper

X Thesis

Field Study

THE GRADUATE SCHOOL

I am submitting herewith a proposal by Juan M. Aguayo Leal
(name of student)

appropriate to the pursuance of Master of Arts, Mass Communication
(department) (course number)

I (we) recommend that it be approved.

Ellen Yamano - Asst. Ch.
(Chairperson-Director)
10/2/90
(Date)

We have read and approved
this proposal:*

Reece Elliott - Thesis Director
(Second Committee Member)

Paul A. Skiff
(Third Committee Member)

*Signatures required for Theses and Field Studies ONLY.

(THIS FORM, WITH AN ATTACHED PRÉCIS OF THE APPROVED PROPOSAL, SHOULD BE FILED IN THE OFFICE OF THE DEAN OF THE GRADUATE SCHOOL BEFORE THE STUDENT REGISTERS FOR RESEARCH PAPER, THESIS, OR FIELD STUDY.)

AUSTIN PEAY STATE UNIVERSITY

CHECKLIST FOR RESEARCH INVOLVING HUMAN SUBJECTS

(MUST BE TYPEWRITTEN)

TITLE A comparison of different forms of communication and listening skills of students at Austin Peay State University. (Thesis Research)

FUNDING SOURCE Juan M. Aguayo (Graduate Student)

PRINCIPAL INVESTIGATOR Juan M. Aguayo DEPARTMENT Speech, Comm.

SPONSOR (if student research) Dr. Ellen Kanervo, Dr. Reece Elliott, Dr. Paul Shaff

1. Give a brief description or outline of your research procedures as they relate to the use of human subjects. This should include a description of the subjects themselves, instructions given to them, activities in which they engage, special incentives, and tests and questionnaires. If new or non-standard tests or questionnaires are used, copies should be attached to this form. Make notation if the subjects are minors or "vulnerable" (i.e. children, prisoners, mentally or physically infirm, etc.). The purpose of this study is to investigate, test, and analyze the reason or reasons why students at Austin Peay State University may be victims of a "communication gap" in their everyday classes. This study involves a research which includes the use of seventy-five (75) college students as experimental subjects and one (1) college professor as a lecturer; all volunteers. A lecture of approximately twenty (20) minutes will be recorded and videotaped. The students will be divided into Three (3) equal groups. Each group will listen and/or see the lecture in one of three ways: Recorded lecture only, Videotape of the lecturer from the waist up, Videotape of the lecturer's head only (close-up). After each individual presentation, each group will be given a questionnaire to answer. The total experimental time, including filling out the questionnaire should not take more than thirty (30) minutes. The data collected will be analyzed with the help of a computer program and method of research. A copy of the questionnaire will be included with the final report. A written consent statement will be collected from all subjects prior any procedures. (See attached proposal)
2. Does this research entail possible risk to psychic, legal, physical, or social harm to the subjects? Please explain. What steps have been taken to minimize these risks? What provisions have been made to insure that appropriate facilities and professional attention necessary for the health and safety of the subjects are available and will be utilized?

There are no foreseeable risks or discomforts to the subjects involved in this study.

II. FOR RESEARCH INVOLVING HUMAN SUBJECTS

The potential benefits of this activity to the subjects and to mankind in general outweigh any possible risks. This opinion is justified by the following reasons: All people involved in the research will be informed of the benefits that may result from their cooperation. Subjects will obtain information of the different levels of listening of students at Austin Peay State University. Any risks are minimal in comparison to the information gained.

4. Will legally effective, informed consent be obtained from all subjects or their legally authorized representative?

Yes. (See attached informed consent form)

5. Will the confidentiality/anonymity of all subjects be maintained? How is this accomplished? (If not, has a formal release been obtained? Attach.)
 (a) If data will be stored by electronic media, what steps will be taken to assure confidentiality/anonymity? (b) If data will be stored by non-electric media, what steps will be taken to assure confidentiality/anonymity? Confidentiality and anonymity will be maintained on all subjects. A separate list of names will be kept in case of a change in the number of subjects to be utilized. All data will be retained by the principal investigator.

6. Do the data to be collected relate to illegal activities? If yes, explain.

No

7. Are all subjects protected from the future potentially harmful use of the data collected in this investigation? How is this accomplished?
 Yes. All subjects will be protected from future potentially harmful use of the data. (See attached informed consent form)
 At no time will the data be attached to any name nor will it identify its source.

I have read the Austin Peay State University Policies and Procedures on Human Research and agree to abide by them. I also agree to report to the Human Research Review Committee any significant and relevant changes in procedures and instruments as they relate to subjects.

James M. Granger
 Student Signature

October 2, 1990
 Date

Student research directed by faculty should be co-signed by faculty supervisor.

Rene Elliott
 Faculty Signature

APPENDIX C

RESEARCH PROJECT
DEPARTMENT OF SPEECH, COMMUNICATION AND THEATRE
AUSTIN PEAY STATE UNIVERSITY

INFORMED CONSENT STATEMENT

The purpose of this investigation is to compare the effectiveness of different forms of communications for a lecturer.

Your responses are CONFIDENTIAL. At no time will you be to your responses. The information collected will be used only for purposes of analysis. Your participation is completely voluntary, and you are free to terminate your participation at any time without penalty. The total time required for the research will not take more than thirty (30) minutes. This research represents no risks or discomforts to you or anyone involved. The results of this research will provide valuable information for the development of effective educational techniques. The scope of the project will be explained fully upon your completed participation. The results will be available for public analysis in the library.

I agree to participate in the present study being conducted under the supervision of a faculty member of the Department of Speech, Communication and Theatre at Austin Peay State University.

I have been informed, either orally or in writing or both, about the procedures to be followed and about any discomforts or risks which may be involved. The investigator has offered to answer any further inquiries I may have regarding the procedures.

I understand that I am free to terminate my participation at any time without penalty or prejudice. I also understand that all data obtained from me will be secured and utilized only by the investigators involved in the research. I have been told of any benefits that may result from my participation.

Name (Please Print)

Witness (Please Print)

Signature

Signature

Date

Date

THANK YOU FOR YOUR COOPERATION

APPENDIX D

RESEARCH PROJECT
DEPARTMENT OF SPEECH, COMMUNICATION AND THEATRE
AUSTIN PEAY STATE UNIVERSITY

INFORMED CONSENT STATEMENT

The purpose of this investigation is to compare the effectiveness of different forms of communications for a lecturer.

The information collected will be used only for purposes of analysis. This research represents no risks or discomforts to you or anyone involved. The results of this research will provide valuable information for the development of effective educational techniques. The scope of the project will be explained fully upon your completed participation. The results will be available for public analysis in the library.

I, George Bratton, professor of mathematics at Austin Peay State University, agree to participate in the present study being conducted under the supervision of a faculty member of the Department of Speech, Communication and Theatre at Austin Peay State University. I have been informed, either orally or in writing or both, about the procedures to be followed and about any discomforts or risks which may be involved. The investigator has offered to answer any further inquiries I may have regarding the investigation. I also understand that all data obtained from me will be secured and utilized only by the investigators involved in the research. I have been told of any benefits that may result from my participation. I authorize the researchers to utilize the content of the videotaped material only for experimental purposes.

George Bratton
Name (Please Print)

George Bratton
Signature

11/16/90
Date

J. Ronald Gorton
Witness (Please Print)

J. Ronald Gorton
Signature

11/16/90
Date

THANK YOU FOR YOUR COOPERATION

APPENDIX E

CHECKLIST FOR LECTURER

LECTURE MUST BE:

- * Without visual aids
(Chalkboards, graphics, etc...).
- * As much information as possible in 15-20 minutes.
- * A topic which allows for nonverbal elements or images (the more expressive, the better).
- * Ideas that the audience could remember graphically.

METHODOLOGY:

- * Three groups of students will be presented the lecture in three different forms of communication.
- * Group A will listen to the recorded lecture without a visual image ("audio recording").
- * Group B will listen to the recorded lecture and a visual image which will consist of a video shot of the lecturer from the waist up ("talking head").
- * Group C will listen to the recorded lecture and a visual image which will consist of a video shot of the lecturer from the waist up (medium shot).

POTENTIAL LECTURER:

Dr. George Bratton (Math Dept)
Claxton Building, Office 302-C
Telephone # 7834

POINT OF CONTACT:

Juan M. Aguayo
Department of Speech, Communication and Theatre
Telephone # 7378

APPENDIX F

Questionnaire 1

Date _____
Time _____
Age _____

The purpose of this questionnaire is to develop an instrument of analysis for a research project. Your responses are CONFIDENTIAL. At no time will you be identified nor will anyone other than the investigators have access to your responses. The information collected will be used only for purposes of analysis.

Your participation is completely voluntary, and you are free to terminate your participation at any time without any penalty.

Please, answer the following questions to the best of your ability and as quickly as possible. Circle or write the correct answer.

1. Which of the following represents best your academic year level? (Circle the letter)

A. Freshmen.
B. Sophomore.
C. Junior.
D. Senior.
E. Graduate School.
F. Other. Explain: _____

2. Which of the following represents best your grade point average (GPA)? (Circle the letter)

A. 4.00 - 3.90
B. 3.89 - 3.50
C. 3.49 - 3.00
D. 2.99 - 2.50
E. 2.49 - 2.00
F. 1.99 - below

3. Place the following subjects in order of preference from one to ten.

1 2 3 4 5 6 7 8 9 10
Most Least
Desirable <-----> Desirable

_____ History	_____ Politics
_____ Sciences (Biology, Chemistry)	_____ Communications
_____ Languages	_____ Psychology
_____ Mathematics	_____ Art
_____ Social Sciences	_____ Education

4. Place the following instructional modes for a lecture in order of preference from one to five.

1 2 3 4 5

Most Desirable <-----> Least Desirable

____Audio Recording (Tape recorded and headphones)

____ Formal Lecture (Professor with students in classroom)

_____Group Discussion (Classroom environment)

_____ Videotape (TV monitor and videocassette)

_____Film (Film production)

Please, keep this questionnaire until asked for.

APPENDIX G

Questionnaire

Read the questions carefully and then circle only the most correct answer on the answer sheet provided. Please, do not write your answer on the questionnaire.

1. According to the lecturer, what is statistical inference?
 - A) The process by which decisions are made in situations where data is missing.
 - B) The process by which decisions are made in situations where data is analyzed.
 - C) The process by which people are divided according to different characteristics.
 - D) None of the above.
 - E) All of the above.
2. Complete the following statement made by the lecturer.
"Statistical Inference. . .
 - A) is not useful in schools."
 - B) is only in mathematical problems."
 - C) plays a major role in our lives."
 - D) plays a major role in a professor's life."
 - E) is very difficult."
3. What was the first example the lecturer used to explain the uses of statistical inference?
 - A) When a new car goes on the market.
 - B) When a new ship goes on the market.
 - C) When a new product goes on the market.
 - D) When a new drug goes on the market.
 - E) None of the above.
4. What was the second example used?
 - A) When a supplier gets a shipment of goods from a manufacturer.
 - B) When a professor wants to test a hypothesis.
 - C) When a student wants to test a problem.
 - D) When a supplier returns a shipment of goods to a manufacturer.
 - E) None of the above.
5. In the public opinion poll example, what was the percentage of people approving the president's rating?
 - A) 23%
 - B) 53%
 - C) 43%
 - D) 63%
 - E) 73%

6. What was the lecturer's definition of "to infer?"
 - A) To separate ideas.
 - B) To draw a conclusion.
 - C) To guess.
 - D) All of the above.
 - E) None of the above.
7. What is the main source of data for problems in statistical inference?
 - A) Mainly books.
 - B) Mainly letters.
 - C) Mainly pictures.
 - D) Mainly numbers.
 - E) None of the above.
8. In the public opinion poll example, what number of people could actually be polled from the total population of the United States?
 - A) 1,000,000
 - B) 1,000
 - C) 5,000
 - D) 2,500
 - E) 1,500
9. According to the lecturer, what is the average population of the United States?
 - A) over 200 million
 - B) over 500 million
 - C) over 300 million
 - D) over 100 million
 - E) over 600 million
10. Which of the following did the lecturer state was a difficulty encountered with problems of statistical inference?
 - A) Graphics designs
 - B) Data gathering
 - C) Problem solving techniques
 - D) Recording the results
 - E) Hypothesis testing
11. In the example of an assembly line, what was the percentage of defective products.
 - A) 20%
 - B) 40%
 - C) 10%
 - D) 50%
 - E) 5%
12. In the example of purchasing a piece of motel property, what was the percentage of occupancy rate?
 - A) 75%
 - B) 90%
 - C) 80%
 - D) 50%
 - E) 10%

13. What word did the lecturer mispronounce?
- A) Propose
 - B) Property
 - C) Purpose
 - D) Purchase
 - E) Provide
14. In the example of a statistical inference problem, how many times was the coin tossed?
- A) 10
 - B) 20
 - C) 50
 - D) 100
 - E) 200
15. According to the lecturer, what laws are used in problems of statistical inference?
- A) The laws of data constructing.
 - B) The laws of relativity.
 - C) The laws of Dr. Chevis.
 - D) The laws of nature.
 - E) The laws of probability.
16. What two types of hypothesis did the lecturer explained?
- A) The null hypothesis and the alternate hypothesis.
 - B) The null hypothesis and the primary hypothesis.
 - C) The true hypothesis and the false hypothesis.
 - D) All of the above.
 - E) None of the above.
17. According to the lecturer, what is a type 1 error?
- A) When the data collected is out dated.
 - B) Rejecting a primary hypothesis when in fact, the null hypothesis is true.
 - C) Rejecting a null hypothesis when in fact the hypothesis is true.
 - D) Accepting a true hypothesis and additional data.
 - E) None of the above.
18. According to the lecturer, what is a type 2 error?
- A) Rejecting a false null hypothesis.
 - B) Accepting a false null hypothesis.
 - C) Accepting a true error.
 - D) Rejecting a true error.
 - E) None of the above.
19. What did the lecturer give as another name for a "type 1 error?"
- A) Simple Error.
 - B) Beta Error
 - C) Alpha Error
 - D) Complex Error
 - E) First Error

20. According to the lecturer, what is another name for a "type 2 error?"
- A) Simple Error
 - B) Complex Error
 - C) Alpha Error
 - D) Beta Error
 - E) Second Error
21. The lecturer called which of the following, "the critical value" in problems of statistical inference?
- A) The point at which we decide to reject rather than accept a particular hypothesis.
 - B) The point at which we write the results.
 - C) The point at which we decide to add the numbers of the data.
 - D) The result of the null hypothesis.
 - E) None of the above.
22. What was being tested in the coin-tossing experiment?
- A) Whether or not the coin was counterfeit.
 - B) Whether or not the coin was balanced.
 - C) The angle of the throw.
 - D) Whether or not the coin was heavy.
 - E) How many times the coin would land "heads" first.
23. What, according to the lecturer, is the nature of problems in statistical inference?
- A) "We always will know whether we are right or wrong."
 - B) "Nobody ever care whether they are right or wrong."
 - C) "We can never know ultimately whether we are right or wrong."
 - D) "It works only with numbers."
 - E) None of the above.
24. According to the lecturer, results from statistical inference problems may include . . .
- A) graphics.
 - B) mistakes.
 - C) fraction numbers.
 - D) charts.
 - E) tables.
25. What was the last example used by the lecturer?
- A) New drug on the market.
 - B) Motel property.
 - C) Shipment of Goods.
 - D) Coin-tossing.
 - E) None of the above.

APPENDIX H

Questionnaire Answer Sheet

Circle the answer you consider the most correct.

Question

- | | | | | | |
|-----|---|---|---|---|---|
| 1. | A | B | C | D | E |
| 2. | A | B | C | D | E |
| 3. | A | B | C | D | E |
| 4. | A | B | C | D | E |
| 5. | A | B | C | D | E |
| 6. | A | B | C | D | E |
| 7. | A | B | C | D | E |
| 8. | A | B | C | D | E |
| 9. | A | B | C | D | E |
| 10. | A | B | C | D | E |
| 11. | A | B | C | D | E |
| 12. | A | B | C | D | E |
| 13. | A | B | C | D | E |
| 14. | A | B | C | D | E |
| 15. | A | B | C | D | E |
| 16. | A | B | C | D | E |
| 17. | A | B | C | D | E |
| 18. | A | B | C | D | E |
| 19. | A | B | C | D | E |
| 20. | A | B | C | D | E |
| 21. | A | B | C | D | E |
| 22. | A | B | C | D | E |
| 23. | A | B | C | D | E |
| 24. | A | B | C | D | E |
| 25. | A | B | C | D | E |

APPENDIX I

AP
AUSTIN PEAY
STATE UNIVERSITY

Clarksville, Tennessee 37044
College of Graduate and Professional Programs
P.O. Box 4458
(615) 648-7414

November 7, 1990

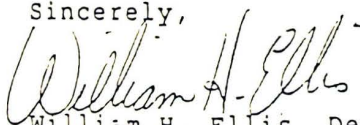
Mr. Juan Aguayo
600 Spruce Dr.
Clarksville, TN 37042

Dear Mr. Aguayo:

Your Thesis subject has been approved by the Graduate School. If, for some reason, there should be a drastic change in your Thesis subject, a revised proposal should be submitted through the same channels.

Please contact this office if you have any problems or feel that we can help you in any way.

Sincerely,



William H. Ellis, Dean
College of Graduate and
Professional Programs

WHE/bls

RESEARCH INVOLVING HUMAN SUBJECTS

Title of Proposal: A comparison of different forms of communication and listening skills of students at Austin Peay State University
 Principal Investigator: Juan Aguayo

Sponsor (if student): Dr. Reece Elliott

Action of the human Research Review Committee:

- xx A. Approved as described. Researcher is responsible for obtaining approval from the Committee prior to introducing any changes in protocol; for keeping signed consent statements for the duration of the project and 3 years thereafter; and informing the Committee of an unexpected physical or psychological effects on subjects.
- B. Approved with recommendations as follows:

Researcher may revise the project in accordance with recommendations and communicate in writing the changes which have been made; discuss the action with the Committee; or withdraw the proposal.

- C. Proposal deferred for additional evidence as follows:

Further action is contingent on the investigator supplying the committee with appropriate information.

- D. Proposal not approved for the following reasons:

Researcher may revise the project or discuss the action with the Committee.

Reviewed by: xx Chairperson,
 Human Research Review Committee

William H. Hall
 11/6/90 Signature

 Membership,
 Human Research Review Committee

 Signature

Copies to: 1. Investigator
1. File with proposal

 Date

PPH FORM 1-001:2