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USE OF EYE CONTACT BY BLIND PERSONS AS A
MEANS OF INCREASING COMMUNICATION
DURING AN EMPLOYMENT INTERVIEW

by

George Arnold Mayo, Jr.

A Dissertation Submitted to the Faculty of the
REHABILITATION CENTER

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College

THE UNIVERSITY OF ARIZONA

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THE UNIVERSITY OF ARIZONA

GRADUATE COLLEGE

I hereby recommend that this dissertation prepared under my direction by George Arnold Mayo, Jr. entitled USE OF EYE CONTACT BY BLIND PERSONS AS A MEANS OF INCREASING COMMUNICATION DURING AN EMPLOYMENT INTERVIEW be accepted as fulfilling the dissertation requirement of the degree of Doctor of Philosophy

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SIGNED: George Arnold Mays, Jr.

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ABSTRACT

The purpose of this dissertation was to determine whether a blind individual could improve his effectiveness in an employment interview by increasing his eye contact with the interviewer. Specifically, the researcher investigated three questions. First, does an employment interviewer choose to hire a blind individual who makes high eye contact in preference to a blind individual who makes low eye contact? Second, does an employment interviewer rate a blind individual who makes high eye contact more favorably on character trait scales than a blind individual who makes low eye contact? Third, does an employment interviewer specifically detect the difference between a blind individual who makes high eye contact and one who makes low eye contact.

The research procedure involved making four (4) employment interview films. In each film a blind woman played the roles of two different blind women who were being interviewed for employment. In each film one of the blind women made high eye contact and the other made low eye contact. Each film was then shown to a group of businessmen who were instructed to observe the two women in the film and to indicate which one of the two they would hire, state the reason for their choice, and to rank the women on character trait scales.

The results of the investigation established that the businessmen chose to hire the blind individual in the films who made high eye contact in preference to the one who made low eye contact. The businessmen also

rated the blind individual who made high eye contact in the films more favorably on character trait scales than the one who made low eye contact. Only thirty percent of the businessmen detected the fact that one of the blind individuals in the film was making more eye contact than the other.

The study concluded that a blind individual can increase his effectiveness in an employment interview by making high eye contact with the employment interviewer. The recommendation was made that blind individuals learn to use non-verbal communication, such as eye contact.

CHAPTER 1

INTRODUCTION

Spoken language and body language are dependent on each other. One cannot get the full meaning of what another person is saying unless the facial gestures and body movements which simultaneously accompany the verbal utterances are observed. If the listener hears only the words and does not observe the facial gestures and body movements of the speaker, the message will be incomplete.

Kinesics, the systematic study of human communication through body movements and gestures, has demonstrated the interdependence of verbal stimuli and body movements in effective communication. The science of kinesics is based on the conviction that body language is primarily learned through enculturation. It is assimilated by the members of the culture (Birdwhistell, 1970).

Body movements and gestures are broken down into an ordered system of isolatable elements by the scientists who study kinesics. A major technique used to study body language is the audio visual film which can be stopped to permit the investigator to record the posture and facial expression of the subject. An annotational system is used to break all the relevant movements into kines: the smallest units of body movements. The kines or units of body movement are given symbols. For example, the symbol (O) is an open eye; the symbol (-) a closed

eye. Open eyes are recorded with the symbol (OO), closed eyes with this symbol (- -). Thus, a wink with the right eye would be recorded (- O) (Fast, 1971).

Statement of the Problem

Zunin (1972) points out that in a typical encounter both parties appraise each other during the first few minutes and decide whether the encounter will continue. Thus, accepting Zunin's hypothesis, one has just a few minutes in which to make a favorable impression.

Obviously, this period of time is extremely crucial for a blind person and any techniques or devices that will enhance his presence would be of great benefit. Certainly, a lack of appropriate body language on the part of the blind individual would detract from his presentation, and conversely, the use of appropriate body language would enhance his presentation.

Congenitally blind individuals do not have the opportunity to learn the body movements which simultaneously accompany speech in this culture. Therefore, the blind individual is at a severe disadvantage in interpreting the meaning of others' verbal remarks to him. Conversely, the blind individual has difficulty utilizing appropriate facial gestures and body movements himself. He, therefore, often exhibits unusual mannerisms which detract from his verbal statements and make him appear "conspicuous" and frequently causes others to feel uncomfortable when in his presence.

It would seem that blind individuals will continue to rely exclusively on verbal nuances in understanding others' communications to

them. However, to a degree, it would seem that congenitally blind individuals could learn body language, gestures, facial expressions, postures, and improve their communication with others.

This study proposed to investigate one mode of non-verbal communication, i.e., the use of eye contact by blind persons. Specifically, this study attempted to determine whether increased eye contact measurably improved communication in an employment interview.

Rationale for the Study

Special schools for the blind have been in existence in this country for over a hundred years. The purpose of these schools is to provide the blind individual with academic and vocational training to enable him to prepare for gainful employment. In addition, each State has a vocational rehabilitation program which has as its function the rehabilitation of blind adults (Obermann, 1965). These programs assist the blind by providing medical and vocational diagnosis, training, tools and equipment, and other services which are required for employment.

These special programs and services are usually successful in assisting the blind individual in securing academic and/or technical job skills. However, these vocational skills are of little value to the blind individual if he is unable to socialize and to communicate effectively in a job interview (Apple, 1972).

The blind individual who has not learned the use of gestures which normally accompany speech in our culture may give the impression that he is "strange." The typical employer may not note specifically the absence of gestures on the part of the blind individual but he will

sense that there is something intangibly "different" about the way in which a blind person speaks (Carroll, 1961).

Often, blind persons have expressionless faces which give the impression that they lack emotion. Sometimes blind individuals appear to be "disturbed" because they unconsciously exhibit facial expressions which are not appropriate to the situation. Therefore, it is imperative that special educators and rehabilitation workers make an effort to teach blind individuals, insofar as possible, the proper use of gestures and facial expressions so that they can communicate effectively and assume the role of contributing members of society.

Research Questions

This research was designed to answer the question whether a blind individual could increase his level of communication by the use of proper body language. Specifically, the research questions were:

1. Does an employment interviewer choose to hire a blind job applicant with high eye contact in preference to a blind job applicant with low eye contact.
2. Does an employment interviewer rate a blind individual with high eye contact differently on character trait scales than a blind individual with low eye contact during the interview.
3. Does an employment interviewer specifically detect the frequency of eye contact on the part of the blind individual.

Definition of Terms

The following terms are defined for the purpose of this research:

Raters

This term refers to businessmen or retired businessmen who will observe the blind individual in the film and rank him according to his performance.

Eye Contact

This term refers to the blind individuals facing the camera so that the face is constantly within a twenty degree angle with the camera lens.

High Eye Contact

This term refers to the blind individual facing the camera approximately eighty percent of the time during the employment interview.

Low Eye Contact

This term refers to the blind individual facing the camera approximately twenty percent of the time during the employment interview.

Limitations of the Study

This research project had several limitations which affect the generalization of these research results to real life employment interview situations:

1. The observed employment interview was on film. The results may be different in a "live" employment interview.

2. The blind individual in the film memorized a script for the interview which resulted in the interview being somewhat rigid and lacking in spontaneity.
3. The raters of the films were members of service organizations who volunteered to participate in this research. Perhaps other groups such as personnel workers and women, might judge the blind individuals in the film differently.
4. Only the amount of eye contact was varied. Perhaps the timing of eye contact is an important variable.
5. The subject was a female being evaluated by males. The results may be different if female raters evaluate females, or males evaluate males, or females evaluate males.

CHAPTER 2

REVIEW OF THE LITERATURE

Eye Contact Research

The eye is more capable than any other body part of conveying a subtle nuance. A review of relevant research (Argyle and Dean, 1965) indicates that the meanings conveyed by eye contact are both numerous and complex:

1. Eye contact is used primarily to obtain feedback as to how one is being received. A speaker looks into the eyes of his audience to determine if the audience is in agreement or disagreement with his previous statement (Nielsen, 1964).
2. Eye contact is used to convey respect, liking, and a positive attitude toward someone. We look at those for whom we have respect and ignore those with whom we do not care to communicate (Exline, Gray and Schuette, 1965; Exline and Winters, 1965; Nachshon and Wapner, 1967).
3. Eye contact is used to signal readiness to receive communication. A speaker usually looks away from the person he is addressing until he has finished, at which time he looks at the person to whom he is talking as if to say: "I'm finished now. What do you want to say?" (Nielsen, 1964).
4. Eye contact is used to seek recognition. One looks at another individual for eye contact to confirm that he is being noticed.

At a distance, eye contact substitutes for a handshake as a greeting (Goffman, 1963).

5. Continuous eye contact or staring is used to convey disrespect or contempt (Goffman, 1963).
6. Minimal eye contact or lack of eye contact is used to conceal one's emotions, or convey a refusal to acknowledge another individual (Goffman, 1963).

A set of rules has developed to regulate the ways and under what conditions one looks into another's eyes. The rules which regulate eye contact are learned through subtle, social processes (Nielsen, 1964).

Some of the rules are:

1. We do not stare at another human being as staring is reserved for non-humans. We may, however, stare at actors, athletes, or others whose role is to be stared at (Fast, 1971).
2. We look briefly at a stranger when taking a seat on a bus, or sharing an elevator, or passing on the sidewalk. Then we look away without locking glances. We say in effect: "I acknowledge your presence but I will not infringe on your privacy" (Goffman, 1963).
3. A speaker, especially during a long discussion, looks at his fellow conversant very little. This prevents his being interrupted and also is a way of avoiding distraction (Nielsen, 1964).
4. A listener looks at the speaker a great deal. This is probably because the listener is also attending to non-verbal communication and is lip reading when the speaker is speaking in a low

volume. Also, the listener wants to signal that he is attending should the speaker glance at him (Nielsen, 1964).

5. A person makes less eye contact when an interviewer questions him about potentially embarrassing subjects than when he is questioned about innocuous contents (Ellsworth and Carlsmith, 1968).
6. As one moves physically close to another the amount of eye contact decreases, unless of course they are about to fight (Argyle and Dean, 1965).
7. When a person stares at us and when we notice the stare, it is the duty of the person staring to look away. If he does not look away he invades our psychological privacy (Nielsen, 1964).
8. We must look someone straight in the eye if we intend to convey a communication of sincerity or honesty (Fast, 1971).

Several general conclusions may be drawn from these diverse findings:

1. Eye contact is usually an indicator of attention, respect, and liking.
2. Eye contact can provide the speaker with information or feedback relative to his impact on the listener.
3. Eye contact must always be considered in the context of the other non-verbal behaviors and the conversation itself.

Where a person looks during a conversation functions as a signal regulating the exchange and maintenance of the speaker role. Also, the timing of eye contact is important in the regulation of conversation.

When and for how long does one look at another?

Kendon (1967) found that during a conversation the speaker and the listener usually changed roles by the speaker looking at the listener with a sustained gaze as he finishes his remarks (as if to say, "What do you have to reply to what I have just said?") and the listener looking away as he begins to speak. During long passages of speech the speaker looks occasionally at the listener. However, during passages of nonfluent speech or uncertainty the speaker never looks at the listener.

According to research by Nielsen (1964) normally the speaker looks away from the listener over half the time. The general tendency is for speakers to gaze less than listeners. Nielsen and others offer two explanations for this phenomenon:

1. It permits the speaker to concentrate and prevents distraction.
2. It prevents the listener from interrupting.

Blindness and Non-verbal Communication

Carroll (1961, p. 47) in listing the losses which result when an individual becomes blind mentions the loss of ease in spoken communication, a loss which seldom receives attention from rehabilitation workers:

This loss affects not only actual listening and speaking, but also gestures, posture, mannerisms, pantomime, and facial expression--all the unspoken elements of "spoken" communication. Yet, unlike the previous one (loss of ease of written communication), this loss is seldom recognized . . . but the loss of ease in spoken communication is one aspect of blindness which (even apart from the psychological barriers it raises) tends to cut the blind person off from the world of people as well.

Carroll (p. 48) goes on to point out what researchers in body language have maintained; i.e., that the change of gestures and facial expressions often is capable of changing the meaning of verbal statements:

But words are only one element of speech. The facial expression which accompanies any statement is capable of changing its whole meaning. As a smile may make a gross insult into a compliment, a sneer can turn the compliment into a slur. The person who cannot see the changes of facial expression may completely miss the meaning of the speaker; and thus ordinary communication, vocal communication, has failed him.

Carroll (p. 49) also remarks that sighted speakers note the facial expressions and body movements of their audience to gage the audience's reception of their communication and thus have the ability to modify their statements:

A strong element in our speaking is the reaction to what we are saying. In ordinary speaking, we never know, when we begin on a topic, what words we may bring into it, let alone what vocal or facial emphasis we may give them. The total conversation develops according to the reaction which we perceive as we continue. If that reaction is hidden from us because we cannot see it, our speaking is greatly interfered with.

Most sighted individuals do not specifically notice the lack of non-verbal communication or inappropriate non-verbal communication on the part of the blind individuals but they do sense that there is something "unusual" about the way in which blind individuals communicate, and communication is therefore strained. Carroll notes this when he says (p. 50):

This loss of gestures is not something that the average sighted person specifically notices. What he does notice is that there is something intangibly different about the way in which the blind person speaks. He will go away with a sense of something missing, and its very mysteriousness will make more serious the interference with normal communication and so make this particular loss more important.

In addition to the loss of appropriate facial expressions and body movements which normally accompany speech, many blind individuals possess "blindisms"--expressions, habits, and mannerisms which interfere with normal social intercourse and cause a real barrier to communication. Examples of "blindisms" are the bland, expressionless face, the tendency of the eyes not to focus, the tendency of the eyeballs to roll around the socket, a swaying back and forth or "rocking" of the upper body, the tendency to touch or rub the eyes, the drumming and snapping of the fingers, and the tendency of the blind individual not to face the person to whom he is speaking. Carroll says (1961, p. 162): "Blindisms may be due to the fact that the blind person is never reminded visually of the gestures, mannerisms and attitudes of sighted people and cannot see his own, and so he is not aware that he is failing to do things he once did or acquiring new mannerisms or tics."

In order to overcome the loss of communication the blind individual can be taught to "localize" sound, that is, locate the source of a sound, such as a speaker's voice, so that he can face the speaker and "look" at the speaker, whether the speaker be sitting or standing (Toonen and Wilson, 1969). The blind individual can also be taught to shrug his shoulders when expressing doubt or uncertainty, to nod his head up and down when agreeing or from side to side when in disagreement, or to wink to indicate teasing.

The prestigious American Foundation for the Blind, in its manual, A Step By Step Guide to Personal Management for Blind Persons (1970, p. 197), discusses the importance of facial gestures for blind persons.

The guide instructs blind individuals to locate the sound of a speaker's voice and to look at the speaker's face, occasionally looking at some other part of the speaker's body or at some other direction in the room, but always returning to the speaker's face: "When talking to a specific individual the blind person should face that person having used sound localization to pinpoint his location. Again, this should not be done with a frozen stare but the person should occasionally direct his attention to anything other than the person to whom he is speaking."

Lowenfeld (1973, p. 315) in discussing the teaching of social skills to blind children says: "One of the most important and first skills he should learn is to face people who are talking to him or to whom he is talking. This can be readily done by localizing the voice of the person. In fact, he can tell something of the individual's height by the height from which the voice comes."

Toonen and Wilson (1969, p. 123) observed that in order for a blind person to give the impression of "looking" at another person the blind person must first:

be able to localize the sound of the other person's voice and then to direct his apparent line of visual regard through the use of this information. This direction of the "gaze" should be controlled with enough precision so that the deviation of the apparent direction of the gaze from what would be a sighted person's line of regard would be small enough to go unnoticed by the person being looked at. It is not known if a blind person can thus direct his eyes to a source of sound with enough prevision to give the impression of looking at another person.

Toonen and Wilson (1969) then go on to design and test a procedure for shaping a subject's looking behavior so that the subject could "gaze" at the experimenter who would talk as he moved his position in a

room. They concluded that it is possible to train a blind person to direct his gaze at a sound source in the horizontal dimension.

Apple (1972) states that most gestures and facial expressions which accompany speech appear to be learned and that blind individuals are usually not proficient in expressive movements as they have not had the opportunity to observe them. Apple goes on to say that while special educators and rehabilitation workers recognize the importance of eliminating "blindisms" relatively little attention has been given to teaching blind persons appropriate gestures and facial expressions.

Apple (p. 203) goes on to say:

In order to make himself more clearly understood and to put others at ease, the blind individual needs to acquire gestures appropriate to such situations as informal conversations, soliciting information from the man on the street, and business interviews and meetings.

Apple (p. 206) goes on to review the theories and modes of study of non-verbal communication. She concludes by stating:

Although the literature which serves as a background for this study can suggest various approaches to the subject of non-verbal communication its major limitation is that it is related almost exclusively to sighted persons. Apparently no attempt has been made in the past to study the problems of non-verbal communication in blind persons; consequently, most of the information may be only indirectly applicable to this study.

Apple states that a formal training program should be designed to teach blind individuals non-verbal communication techniques.

Summary of the Literature

A review of the literature on non-verbal communication revealed that eye contact is one of the most important dimensions of non-verbal communication. Several authorities in work for the blind have

recognized this and have urged that blind individuals learn to face people who are talking to them or to whom they are talking. However, no research reports were found which actually documented the fact that a blind individual can increase the effectiveness of his communication by increasing his eye contact. Also, no schools or rehabilitation centers for the blind were found which have a program for teaching blind individuals non-verbal communication, such as eye contact.

CHAPTER 3

RESEARCH METHODOLOGY

The Subject and Raters

The subject was a 35 year old blind Mexican-American female. The raters were the members of four (4) service organizations, two Lions Clubs and two Optimist Clubs. The members of these service organizations are business and professional men who engage in fund raising activities for youth and disabled persons. These organizations were used because of their willingness to participate in this research and their accessibility to the researcher.

Procedure

The subject played the role of two blind women, a Mrs. Martinez and a Mrs. Lopez, who were being interviewed for a position as a PBX operator-receptionist in a bank. The researcher stated to the raters that Mrs. Martinez and Mrs. Lopez were blind twin sisters. The subject played the role of Mrs. Martinez wearing her own hair, plain black sunglasses, and plain sweater. The subject played the role of Mrs. Lopez wearing a wig, a white framed pair of sunglasses, and a checkered sweater. The objective of the subject's cosmetic changes in the two roles was to give credence to the researcher's statement that Mrs. Martinez and Mrs. Lopez were two different women, even though, in fact, both roles were being played by the same blind subject.

The subject was filmed in a seven minute employment interview as Mrs. Martinez and then filmed in a seven minute employment interview as Mrs. Lopez. Identical dialogues were used by Mrs. Martinez and Mrs. Lopez. It was stated to the raters that the interview dialogues would be identical. The employment interview dialogue was developed in collaboration with bank personnel officers. The employment interview dialogue is reproduced as Appendix A.

A series of four (4) films was made. Each of the four (4) films showed both Mrs. Martinez and Mrs. Lopez in the course of their employment interviews. Each woman's dialogue with the bank personnel officer was identical. However, they rotated in making high eye contact and low eye contact in each film. They also rotated in their order of appearance in each film--appearing first in one film and appearing second in another film. The sequence is presented as Figure 1.

In the first film, Mrs. Martinez was observed making high eye contact and presented first. Mrs. Lopez was observed making low eye contact and presented second.

In the second film, Mrs. Lopez was observed making high eye contact and was presented first. Mrs. Martinez was observed making low eye contact and was presented second.

In the third film, Mrs. Martinez was observed making low eye contact and was presented first. Mrs. Lopez was observed making high eye contact and was presented second.

In the fourth film, Mrs. Lopez was observed making low eye contact and was presented first. Mrs. Martinez was observed making high eye contact and was presented second.

	PRESENTED FIRST	PRESENTED SECOND
FILM I. SHOWN TO GROUP I	Ms. Martinez high eye contact	Ms. Lopez low eye contact
FILM II. SHOWN TO GROUP II	Ms. Lopez high eye contact	Ms. Martinez low eye contact
FILM III. SHOWN TO GROUP III	Ms. Martinez low eye contact	Ms. Lopez high eye contact
FILM IV. SHOWN TO GROUP IV	Ms. Lopez low eye contact	Ms. Martinez high eye contact

Figure 1. Sequence of Presentation of Employment Interview
Films to Rater Groups

The subject was filmed so as to give the impression that the bank personnel officer viewed the subject through the lens of the camera. The subject was shown from the waist up as she approached the camera, introduced herself, and took a seat. The subject was filmed from the shoulders up during the remainder of the interview.

Each film was then shown to one of the four (4) service organizations. The members of the organization were instructed to observe each of the blind employment applicants and to indicate which one of the two they would hire and to state the reason for their choice. They were then instructed to rate each of the women on character trait scales. The instructions to the four (4) groups are included in Appendix B.

Instrumentation

The character trait scales are used by one of the local banks to rate applicants for employment. The scales are similar to Likert-type scales in that a graded response to each character trait is required. Each scale has five categories: outstanding (5 points), above average (4 points), average (3 points), borderline acceptable (2 points), and unsatisfactory (1 point).

The character trait scales are defined as follows:

personality: impression on public and associates, the type that would wear well with others, attitude friendly and cordial.

appearance: neat, well-groomed, physical appearance, maturity in relation to age.

manner: courteous, respectful, tactful, social bearing, poise.

maturity, self-reliance: desirable self-confidence, regard for consequences.

ease of expression: diction, clear, concise, sincere, does she sell herself well.

The Applicant Rating Form is included as Appendix C.

Statistical Application

The experimental design included a test for the difference between expected percentages and obtained percentages for the number of times the subject was chosen when making high eye contact and the number of times not chosen (Downie and Heath, 1974).

A t test was done for the difference between the means on the character trait scales for the subject making high eye contact and making low eye contact (Weinberg and Schumaker, 1962).

Hypotheses

The specific hypotheses to be tested in this study are as follows:

Hypothesis 1 There will be no statistically significant difference between the number of times the individual is chosen when making high eye contact and not chosen.

Hypothesis 2 There will be no significant difference between ratings on the character trait scales for the individual making high eye contact and the individual making low eye contact.

Also, the question as to whether the eye contact differences of the subject was specifically mentioned by the raters was investigated by calculating the percentage of time the raters mentioned eye contact.

Summary of Research Methodology

The researcher made four (4) films. Each film showed two blind women in an employment interview. One of the women in each film made high eye contact and the other made low eye contact. The women rotated as to which one made high eye contact and which one appeared first in each film. Unknown to the raters, the role of each blind woman was played by the same individual.

The raters were instructed to indicate which one of the two women they would hire, to state the reason for their choice, and to rank each woman on a character trait scale.

CHAPTER 4

PRESENTATION AND ANALYSIS OF THE DATA

As stated in Chapter 3, four (4) audio visual films were made. In each film the blind subject was interviewed twice regarding possible employment as a PBX operator-receptionist in a local bank. In each film the blind individual was interviewed once as a Mrs. Martinez and once as her twin sister, a Mrs. Lopez. Thus, in each film Mrs. Martinez was interviewed seven minutes and Mrs. Lopez was interviewed seven minutes. The questions and answers in each of the interviews were identical. The blind individual wore her hair naturally, a plain sweater, and black framed glasses when playing Mrs. Martinez. The blind individual wore a wig, a checkered sweater, and white framed glasses when playing Mrs. Lopez.

In two films Mrs. Martinez made high eye contact and in two films Mrs. Lopez made high eye contact. Also, Mrs. Lopez was interviewed first in two films and Mrs. Martinez was interviewed first in two films. The films were then shown to four (4) groups of businessmen who were members of a service organization. Each of the four (4) groups of businessmen viewed a different film.

Data for Hypothesis 1

Group I consisted of sixteen (16) members of the Sunrise Optimist Club, who observed the first film. In this film Mrs. Martinez, who made high eye contact, was shown being interviewed first. Mrs. Lopez, who made low eye contact, was shown being interviewed second. Ten (10) members chose Mrs. Martinez as the blind individual they would hire and six (6) members chose Mrs. Lopez as the blind individual they would hire.

Group II consisted of thirty (30) members of the Tucson Breakfast Lions Club, who observed the second employment interview film. In the second film Mrs. Lopez, who made high eye contact, was shown being interviewed first. Mrs. Martinez, who made low eye contact, was shown being interviewed second. Twenty-six (26) members chose Mrs. Lopez as the blind individual they would hire. Four (4) members chose Mrs. Martinez as the blind individual they would hire.

Group III consisted of thirteen (13) members of the Tucson Sunrise Lions Club who observed the third employment interview film. In the third film, Mrs. Martinez, who made low eye contact was shown being interviewed first. Mrs. Lopez, who made high eye contact, was shown being interviewed second. Nine (9) members chose Mrs. Lopez as the blind individual they would hire. Four (4) members chose Mrs. Martinez as the blind individual they would hire.

Group IV consisted of ten (10) members of the Breakfast Optimist Club, who observed the fourth film. Mrs. Lopez, who made low eye contact, was shown being interviewed first in this fourth film. Mrs.

Martinez, who made high eye contact, was shown being interviewed second. Six (6) members chose Mrs. Martinez as the blind individual they would hire. Four (4) members chose Mrs. Lopez as the blind individual they would hire.

A total of sixty-nine (69) votes were cast by the combined membership of the two Lions Clubs and two Optimists Clubs. The blind individual making high eye contact was chosen fifty-one (51) times or .696 percent of the time and not chosen eighteen (18) times or .304 percent of the time. A test for the difference between expected percentages and obtained percentages for this data results in a z score of 3.26 which is significant at the .01 level of confidence. Thus, the null hypothesis was rejected that there would be no statistically significant difference between the number of times the blind individual is chosen making high eye contact and not chosen. This suggests that a blind individual can increase his effectiveness in an employment interview by increasing his eye contact with the interviewer.

Data for Hypothesis 2

The blind individual making high eye contact during the interview received higher ratings than the blind individual making low eye contact on all the character trait scales of personality, appearance, manner, maturity, and ease of expression. The difference on each trait, with the exception of appearance, is significant at the .05 level of confidence as measured by a t test for the difference between the means. Thus, the null hypothesis that there would be no significant difference between the ratings on the character trait scales was rejected on four

of the five scales. These results are reproduced as Table 1. This suggests that a blind individual can improve his rating on character traits such as personality, manner, maturity and ease of expression by increasing his eye contact with the interviewer.

Data for Supplemental Question

An examination of the reasons given by the raters for their choice of a particular blind individual reveals that twenty-one (21) of the sixty-nine (69) raters or only thirty percent specifically mentioned "eye contact," "gaze," or downward "tilting" of the head. This would tend to support Carroll's (1961) statement that the typical employer may not note specifically the absence of gestures such as eye contact on the part of the blind individual, but he will sense that there is something intangibly "different" about the way in which a blind person speaks. The reasons given by the raters for their choice of subject are reproduced as Appendix D.

None of the raters questioned the researcher's statement that the blind women were twins in a discussion period following the completion of applicant rating forms. Several raters did question whether the individuals in the film were blind or sighted persons posing as blind persons.

Summary of the Data

In summary, the null hypothesis that there would be no difference between the blind individual exhibiting high eye contact and the blind individual exhibiting low eye contact in being chosen in an employment

Table 1. Means, Standard Deviations, and t Test Probabilities for the Difference Between Means of High and Low Eye Contact Individuals on Character Trait Scales

	MEAN	STANDARD DEVIATION	2-TAIL PROB.
PERSONALITY			
High eye contact	3.4783	.633	
Low eye contact	2.8841	.814	.000
APPEARANCE			
High eye contact	3.4783	.740	
Low eye contact	3.3478	.764	.310
MANNER			
High eye contact	3.6522	.638	
Low eye contact	3.1449	.692	.000
MATURATION			
High eye contact	3.6377	.785	
Low eye contact	3.0435	.930	.000
EXPRESSION			
High eye contact	3.4493	.916	
Low eye contact	3.0000	.840	.003

interview was rejected by a test of proportions at the .01 level of confidence.

The null hypothesis that there would be no difference on character trait scales between a blind individual exhibiting high eye contact and a blind individual exhibiting low eye contact was rejected on the character trait scales of personality, manner, maturation, and ease of expression by a t test for the difference between means at the .05 level of confidence.

The members of the service organizations specifically mentioned "eye contact" or "gaze," or "tilting of the head" thirty (30) percent of the time when stating the reason for their choosing one blind individual in preference to another. Other reasons frequently given were "more poise," "more self-confidence," and more "personality."

CHAPTER 5

SUMMARY, LIMITATIONS, RECOMMENDATIONS, AND CONCLUSION

Summary

A review of the literature on non-verbal communication revealed that eye contact is one of the most important dimensions of non-verbal communication. Several authorities in work for the blind have recognized this and have urged that blind individuals learn to face people who are talking to them or to whom they are talking. However, no research reports were found which actually documented the fact that a blind individual can increase the effectiveness of his communication by increasing his eye contact. Also, no schools or rehabilitation centers for the blind were found which have a program for teaching blind individuals non-verbal communication such as eye contact.

Therefore, this researcher designed an experiment to test whether a blind individual can increase the effectiveness of his communication by increasing his eye contact. This experiment involved making four (4) films. Each film depicted two blind twin women in an employment interview. Unknown to the raters, the role of each of the blind women was played by the same blind woman, who changed her appearance by wearing a wig, a different pair of sun glasses, and a different sweater. In each of the films one of the blind women made high eye contact during the interview and the other blind woman made low eye contact.

In the films, the blind women were rotated as to which one made high eye contact and which one was presented first during the interview.

The films were then shown to the members of service organizations who were asked to indicate which of the two blind women in each film they would hire, to state the reason for their choice, and to rate each of the blind women on a series of character traits: personality, appearance, manner, maturity, self-reliance, and ease of expression.

The blind individual who made high eye contact in the film was chosen in preference to the blind individual who made low eye contact by the members of the service organizations sixty-nine (69) percent of the time, which is significant at the .01 level of confidence on a test for the difference between expected votes and obtained votes. Thus, in this research project it has been demonstrated that a blind individual can increase his communication by increasing his amount of eye contact.

Also, the blind individual who made high eye contact in the films was rated over the individual who made low eye contact on the character traits of personality, appearance, manner, maturity, self-reliance, and ease of expression. The difference on each trait, with the exception of appearance, is significant at the .05 level as measured by a t test for the difference between means.

The members of the service organizations specifically mentioned "eye contact" or "gaze" or "tilting of the head" thirty (30) percent of the time when stating the reason for their choosing one blind individual in preference to another. Other reasons frequently given were "more poise," "more self-confidence," and "more personality."

Limitations

This research project had several limitations which affect the generalization of these research results to real life employment interview situations:

1. The observed employment interview was on film. The results may be a little different in a "live" employment interview.
2. The blind individual in the film memorized a script for the interview which resulted in the interview being somewhat rigid and lacking in spontaneity.
3. The raters of the films were members of service organizations who volunteered to participate in this research. Perhaps, other groups such as personnel workers, women, etc., might have judged the blind individuals in the film differently.
4. Only the amount of eye contact was varied. Perhaps, the timing of the eye contact is an important variable.
5. The subject was a female being evaluated by males. The results may be different if female raters evaluate females, or males evaluate males, or females evaluate males.

Recommendations

The recommendations for future research flow directly from the limitations mentioned above:

1. Repeat the research using an in-person employment interview.
2. Repeat the research with the blind applicants using different but equivalent job resumes.

3. Use personnel officers of banks and other businesses to rate the blind individuals.
4. Experiment with varying the timing of eye contact in addition to the amount of eye contact.
5. Experiment with using applicants and raters of the same sex.

Assuming that further research incorporating the above recommendations confirms the present results that a blind individual can increase the effectiveness of his communication by increasing his amount of eye contact, then other facets of non-verbal communication by blind individuals should be studied such as the use of nodding the head, motions with the arms and hands, and shrugging of the shoulders.

The applied implications of this research for rehabilitation workers for the blind is that they incorporate specific plans in their rehabilitation program for teaching blind individuals effective use of non-verbal communications such as eye contact.

Conclusion

Recent amendments to the Federal Vocational Rehabilitation Act mandate that State Vocational Rehabilitation Agencies place special emphasis on serving the severely disabled including the blind. The amendments also require the government agencies and business establishments which receive federal funds initiate an affirmative action program for hiring disabled persons including the blind.

University programs have now trained rehabilitation specialists for the blind, such as orientation and mobility instructors,

rehabilitation teachers, and counselors to teach the blind the special skills they need in order to lead maximally rewarding lives including gainful employment. Also, there have been recent developments in aids and appliances for the blind which further increase the potential of blind people for becoming self-sufficient.

Thus, there are more opportunities now than ever before for blind individuals to receive training for gainful employment. However, there has been relatively little attention to training the blind individual in interpersonal communication skills. The lack of such interpersonal communication skills may very well limit the blind individual from profiting from the recent developments and improvements noted above.

This research project suggests that blind individuals can effectively improve their ability in an employment interview by increasing their level of eye contact. The recommendation is made that other non-verbal communication skills be taught to blind persons, thus increasing their effectiveness in communication.

APPENDIX A

EMPLOYMENT INTERVIEW DIALOGUE

A: Applicant P: Personnel Officer

- A: Mr. Jones, I am Mrs. (Lopez) Hernandez. I am here for my employment interview.
- P: Mrs. (Lopez) Hernandez, I have been expecting you. How are you today?
- A: I am fine thank you; and how are you?
- P: Just fine. Would you like to have a seat? There is a chair just to your right.
- A: Thank you.
- P: You know, I have never interviewed a blind person before. I thought that most blind people worked in sheltered workshops or concession stands.
- A: Yes, that's true, but there are blind persons employed as teachers, lawyers, computer programmers, dictaphone typists, and many other occupations.
- P: That is very interesting. I see from your employment application that you are from Colorado.
- A: Yes, I am from Denver, where I attended East High School from 1958 through 1961.
- P: What kind of program did you take in high school?
- A: Initially I was enrolled in a college preparation program, however, during my junior year I transferred into the general business program.
- P: How did you like the general business program?
- A: It was a good program. I enjoyed it very much.

P: Did you have employment while you attended high school?

A: Yes. During my junior year and senior year I worked part time in the afternoon as a PBX operator and receptionist.

P: What were your duties?

A: I answered all incoming telephone calls, referring them to the appropriate party, or if the caller had a routine question I answered it myself. Also, I greeted all visitors to the school and announced their arrival to the person they wishes to see. It was a most pleasant experience.

P: It sounds like you enjoy working with people. What did you do after high school graduation?

A: After graduation I obtained a position as a PBX operator and receptionist in a branch office of Continental Bank in Denver.

P: What were your duties?

A: I received, screened, and routed all telephone calls to the appropriate person. All the routine calls I answered myself.

P: How about your receptionist duties?

A: My duties as a receptionist involved answering customers' questions if they were routine. Customers with specific business were referred to the appropriate bank officer.

P: How did you like the job?

A: I liked meeting customers and being of help to them.

P: How long did you work in that position?

A: Two years in the branch office. Then I received a promotion to the receptionist position in the Home Office.

P: What were your duties there?

A: Basically the same. However, the volume of telephone calls and number of customers who came into the main branch was greater. Also, I did some dictaphone typing for the Customer Relations section.

P: And how long were you employed in that position?

A: Three years, until 1966, when I became pregnant with my first child.

- P: Have you been employed since then Mrs. (Lopez) Hernandez?
- A: No. Three years later, in 1969 I had my second child and I wanted to give my time to the children until they entered school.
- P: So you have two children?
- A: Yes. Juan is eight years old and in the third grade, and Veronica is six years old and in the first grade.
- P: So you have been a housewife for the past nine years?
- A: Yes. However, I was active in the League of Women Voters during those years, in charge of publicity. Most of the time I could do my assignments from home in my spare time so that it didn't conflict with my family activities.
- P: That must have been interesting work.
- A: Oh yes. I had many friends in the Denver area and so I was able to make important contacts to arrange newspaper, radio and TV coverage for the League's activities.
- P: How long have you been in Tucson?
- A: My husband was transferred here by United Life Insurance Co. to manage the local office last summer. Now that the family is settled and the children are in school I would like to go to work.
- P: It seems that based upon your previous employment experiences, you would be qualified for a receptionist job with our bank.
- A: Yes. That is the position I am interested in. Could you tell me the duties of the position?
- P: The receptionist provides informational services and directions to customers. She also announces the customers to the proper office or location. Some of the representative major job duties include:
1. Greeting customers and ascertaining the nature of their visit to the office.
 2. Informing requested contact of customers arrival.
 3. Directing customers to proper locations.
 4. Providing informational services and directions to phone callers and those individuals appearing in person.

5. Assuring prompt and courteous customer service to maintain the bank's public relations image.

- A: The duties are almost identical to the ones I had at Continental Bank in Denver. I am sure I would do well here. What type of switchboard do you have?
- P: We have a 555 PBX console. Are you familiar with it?
- A: Oh, yes. It's very similar to the one I used in Denver.
- P: But how are you able to use it as you can't see the lights when they flash on and off?
- A: The telephone company and the local office of the State Commission for the Blind have had experience in making some of the small modifications necessary so that I can operate it. The Commission for the Blind will pay for the expense necessary to make the modification.
- P: Will other modifications of the job be necessary?
- A: No. I can use any standard typewriter for taking messages.
- P: How would you be able to remember the PBX extension numbers as we have about fifty extensions?
- A: At first I would keep a list of the extension numbers in braille, but after about a week I could remember them all without referring to my braille list.
- P: Fine. I do not see any problems in your being able to do the job. However, I am wondering about your ability to get to and from the job every day, and also to the Ladies Lounge.
- A: The city bus stops only two blocks from my house so I plan to ride it. I am familiar with the downtown area and can locate just about every major building and store as I travel with my cane. I can remember the way to the Ladies Lounge if I'm shown the way once or twice.
- P: Excellent. I think that the next step is for me to arrange an interview for you with Mrs. Smith, who is the manager of the Customer Relations section. She is responsible for hiring the receptionist.
- A: Yes, I would like to meet her. When do you think that it would be possible to schedule an interview?

P: Probably next Tuesday afternoon, but I will call you tomorrow to confirm this. Do you expect to be home tomorrow afternoon?

A: Yes. I'll wait for your call.

END

APPENDIX B

INSTRUCTIONS TO PARTICIPANTS IN BLIND EMPLOYMENT INTERVIEW RESEARCH

You are about to view a film of two blind women in a simulated employment interview with a personnel officer of a bank. The blind women are twins. Each of the women will be interviewed for about seven minutes. The personnel officer will ask each woman the same set of questions and each of the women will respond with identical answers.

Imagine that you are the bank personnel officer. Your task is to carefully observe each woman in the film, and then to indicate on the attached applicant rating form which one of the women you would hire, and briefly state the reason for your choice.

Then you are to rate each of the women on a scale that varies from outstanding to unsatisfactory on such traits as personality, appearance, manner, maturity, self-reliance, and ease of expression.

This experiment is intended to gather information that will be helpful to blind persons preparing for employment interviews. Your participation in this experiment is greatly appreciated.

THANK YOU

APPENDIX C

APPLICANT RATING FORM

Of the two blind job applicants I would hire the (check the appropriate box)

1st applicant 2nd applicant

because _____

CHARACTER TRAITS

		Out- standing	Above average	Average	Borderline acceptable	Un- satisfactory
PERSONALITY						
Impression on public and associates, the type that would wear well with others, attitude friendly, cordial.	1st applicant	<input type="checkbox"/>				
	2nd applicant	<input type="checkbox"/>				
APPEARANCE						
Neat, well groomed, physical appearance, maturity in relation to age.	1st applicant	<input type="checkbox"/>				
	2nd applicant	<input type="checkbox"/>				
MANNER						
Courteous, respectful, tactful, social bearing, poise, alertness.	1st applicant	<input type="checkbox"/>				
	2nd applicant	<input type="checkbox"/>				
MATURITY, SELF-RELIANCE						
Desirable, self-confidence, regard for consequences.	1st applicant	<input type="checkbox"/>				
	2nd applicant	<input type="checkbox"/>				
EASE OF EXPRESSION						
Diction, clear, concise, sincere, does she sell herself well.	1st applicant	<input type="checkbox"/>				
	2nd applicant	<input type="checkbox"/>				

APPENDIX D

STATED REASONS FOR THE SELECTION OF BLIND INDIVIDUALS IN
EMPLOYMENT INTERVIEW FILMS

- + Chose high eye contact individual
 - Chose low eye contact individual
-
- + 1. Ease of expression.
 - 2. Second applicant averted her "gaze" from interviewer; difficult to choose. First one's voice tended to be a little flat and her facial features lacked some expressiveness. Felt the second one would be more "friendly."
 - + 3. Second applicant doesn't appear to have as much confidence in herself, holds head down or to the side while speaking instead of directing herself to the interviewer. No. 2 doesn't project herself as well as No. 1.
 - + 4. More poise, more sure, relaxed.
 - + 5. Good appearance, confident, doesn't let her handicap impede her. Would make good initial contact with customers. Displays ability to do the job.
 - + 6. She seemed to be more sure of herself than No. 2.
 - 7. The differences between the two are the same actually. No. 2 (Mrs. Lopez) just gave a better overall impression.
 - + 8. A receptionist must look at the customers straight in the eyes, or at least give the impression of so doing.
 - + 9. She addressed the interviewer on an eye to eye basis. Second applicant looked down too much, perhaps due to not having recitation memorized. The second applicant had a more fluent delivery, however.
 - + 10. I would hire No. 1 over No. 2 for her aggressiveness, confidence in herself and looked more self-reliant.

- 11. She spoke better and was more responsive, but I wouldn't hire either because both tilted their heads down consistently as though they were not paying attention.
- 12. Although she looked down much more than the first applicant, her appearance was better. Both looked down much too often.
- + 13. She seemed to be more confident in herself, in her carriage, and was more direct.
- + 14. Applicant No. 1 appears to be under more control during the interview.
- 15. Nothing.
- 16. Very close, appearance is very important fact because she would be first person the customer would see.
- + 17. More self-assurance. Tried to maintain facial contact with interviewer. Would not make customer self-conscious about her handicap. Would be more impressive to customer.
- 18. Most knowledgeable of job and equipment to be used. Fine job of selling herself.
- + 19. Faces interviewer. All other aspects equal. I feel its impossible to make a fair choice since neither had a chance to use her own words or show her personality.
- + 20. Seems to maintain direct communication with interviewer. Would do same with customers.
- + 21. No. 1 appeared to have more confidence in herself than No. 2.
- + 22. Fair personality, good appearance.
- + 23. Slightly better performance and appearance to customers.
- + 24. She's more proud of herself as an individual.
- + 25. First applicant appeared more at ease and self-confident. Necessary for job description.
- 26. Personality, maturity, manner.
- + 27. Showed more poise in the interview. Also appeared to be a bit better groomed.
- + 28. This is just a guess because they both were told what to say instead of acting natural.

- + 29. Showed more self-confidence. Did not move head downward as much when speaking to interviewer.
- + 30. She held her head up when she spoke. She was dressed neater, hair was groomed better.
- + 31. The first applicant had more poise than No. 2. Spoke clearly and with some command.
- + 32. Seemed more confident. With a little help and familiarity with job could become a good employee. Appearance was good and although was not as affluent as second applicant, could survive in position applied for.
- 33. Could talk better.
- + 34. Seemed more sure of herself. Believe customers would accept first applicant quicker.
- + 35. Personality traits.
- + 36. Better poise. Seems a little more sure of herself. Second girl by looking down accentuated her handicap.
- 37. Script was too rehearsed and artificial. Disregarding sight problems, neither would be acceptable as being too bland, devoid of personality. This is probably the fault of the script.
- + 38. By her appearance only and her reaction to questions asked.
- + 39. General poise and ability to face the interviewer during most of interview. The second applicant looked down through most of the interview. However, I think this could be overcome with proper training.
- + 40. The key factor was facing the public. Both appeared to have good control of their facial movements, and this is an excellent means of communication.
- + 41. She appeared more self-assured and confident of her abilities and personal appearance. This was primarily indicated through her posture, head position (up addressing the interviewer, not down).
- + 42. She seemed more sure of herself, looked at interviewer more, in a job as receptionist this would be important, however, the second applicant, with constructive criticism, could probably be trained. Neither one did enough smiling.

- + 43. More mature, less nervous, better personality.
- + 44. Her appearance was a bit better and she faced the interviewer more which implies to me she would be more direct with customers.
- + 45. Better expression and more self-confidence.
- + 46. Clear expression self-confident. Did not talk to interviewer; to table or hands.
- 47. She seemed a little more personable and able to express herself a little more.
- 48. Appeared to be more self-reliant.
- + 49. More at ease, more confident.
- + 50. Very close, with both scoring equally in all categories, but No. 2 seemed to have a better voice and diction.
- + 51. More direct, though perhaps less expressive in oral expression.
- + 52. First, bends head too much, turned up collar. Second, hesitates, but understandable as she is in a new situation.
- + 53. The first applicant hung her head and seemed less sure of herself. (Actually, the second applicant also hung her head.)
- + 54. She gave the impression of being more confident with herself than the first applicant.
- + 55. More efficient and better personality.
- + 56. (2) She answered the questions with more ease.
(1) Was slightly tight, acted like she was reading from notes.
- + 57. Of appearance, very difficult as both stated exactly the same things.
- 58. Had more poise and alertness, diction was clearer than No. 2.
- 59. One has to be selected. Could select No. 2 as well because there was no difference between them.
- + 60. I was distracted by the first applicant's look at the floor. Also true of second but to a lesser degree.
- + 61. She seemed more positive in answers and maybe I was influenced by her brighter dress and appearance.

- 62. Appearance (grooming) made first better. Poise of both was unacceptable (looking down while talking).
- 63. First applicant after a time might, I would hope, overcome the lack of self-confidence. Appearance much more becoming.
- + 64. She appeared to have better control of her movement than the first.
- 65. She shows more maturity in appearance. Expression is slightly superior to No. 2.
- + 66. Very little difference except appearance, and lack of attention to interviewer.
- + 67. She looked at the interviewer and seemed less distracted. Neither seemed especially cordial.
- 68. More self-confident, greater outward personality.
- + 69. She looks directly at interviewer more frequently which is essential as a receptionist, otherwise qualifications are quite similar.

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