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THE RELATIONSHIP BETWEEN THE ABILITY TO DECODE NONVERBAL COMMUNICATION, PERSONALITY AND AFFECTIVE SENSITIVITY(EMPATHY)

BY

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Dedicated to my wife, Susan, for her loving support

and to my parents for their caring and kindness

I. The Research problem

In the last 15 years there has been a great deal of research on all aspects of nonverbal communication. This includes studies that focus on the ways in which people use facial, body, and paralinguistic(e.g. tone of voice) cues to communicate information and feelings as well as studies that focus on the way people decode this information. While this experimental research has been going on, clinicians such as Carl Rogers, Alexander Lowen, Fritz Perls, and previously Wilhelm Reich and even Sigmund Freud at times, have stressed the importance to therapeutic effectivieness of observing and understanding nonverbal cues which reflect the patient's affective state, personality and relationship to others. The ability to decode nonverbal cues is often considered one major component of general affective sensitivity or empathic ability. Empathic ability is conceptualized as the ability to detect and describe the immediate affective or emotional state of another. Empathic ability is a basic skill important to all forms of effective psychotherapy and counseling.

One implication of this research and writing is that there is a skill that might be called nonverbal decoding ability which some people have more of than others and which might be taught through training or experience. Several researchers have used instruments, usually consisting of films or photographs, that purport to measure this ability(e.g. Ekman, Friesen, and Ellsworth, 1972; Rosenthal, 1974a; Burns and Beier, 1973; Archer and Akert, 1977). However, very little research has been done in which the same subjects have been given two different measures of nonverbal decoding ability to see the extent to which a unitary skill is involved. One goal of the present study was to see if

two different measures of nonverbal decoding ability-- the Profile of Nonverbal Sensitivity(Rosenthal, 1974) and a test developed by Ernst Beier(Burns and Beier, 1973)-- correlate with each other. Another goal of this study was to assess experimentally whether nonverbal decoding ability as measured by each of these measures is a significant component of general affective sensitivity(empathic ability) as measured by the Affective Sensitivity Scale Form D(Kagan and Schneider, 1975). A third purpose of this study was to see whether there are sex differences in the ability to decode nonverbal cues and in empathic ability. A fourth purpose of this study was to determine whether mental health professionals are more skilled than students in these areas. Finally, the study assessed whether a broad personality variable related to psychotherapy and counseling, called the A-B therapist personality variable(Whitehorn and Betz, 1954; 1960) is related to skill in decoding nonverbal communications and/or empathic ability.

II. Review of the relevant literature

The first renowned scientist to study nonverbal communication in humans was Charles Darwin in 1872(Darwin, 1955). He focused on the expression of basic emotions and concluded that distinct nonverbal facial patterns reflected distinct inner emotional states. He further concluded that these basic patterns are innate and universal. He also distinguished between nonverbal behavior patterns arising automatically out of excitation and those that had a communicative or signalling function. He based his conclusions on his knowledge of anatomy and on observations of children, adults of different races, the insane, great art and animals.

The first psychotherapist to point out the importance of understanding nonverbal communication and the expression of emotions was Sigmund Freud in 1905. Although he stressed verbal cues to understanding the unconscious, he recognized the necessity of attending to nonverbal cues as well when he said, "He that has eyes to see and ears to hear may convince himself that no mortal can keep a secret. If lips are silent, he chatters with his fingertips: betrayal oozes out of every pore(Freud, 1905, p. 77)."

In the past 15 years the interest in and awareness of the richness of nonverbal communication shown by these two pioneers is being shared by an increasing number of researchers and clinicians as well as by the general public. This is evident in the publication of several full-length books summarizing copious research(e.g. Davitz, 1964; Lowen, 1967; Izard, 1971; Ekman, Friesen, and Ellsworth, 1972; Ekman and Friesen, 1975; Birdwhistell, 1970; Knapp, 1972; Efron, 1972; Weitz, 1974; Mehrabian, 1972; Beier and Valens, 1975; Speigel and Matchotka, 1974; Argyle, 1969; 1975) as well as popular books that have made best-seller lists(Fast, 1970; Morris, 1977). Interest has focused on how human beings intentionally or unintentionally communicate emotions, beliefs, mental state, social status, ethnic background, and the nature of interpersonal relationships through nonverbal signals and cues that can augment, qualify, negate or substitute for verbal messages.

The following is a review of some of the kinds of information that can be transmitted nonverbally and may be of use to researchers and clinicians.

A. Expressions of emotions

Researchers in nonverbal communication have referred to the human face as an affect display system(Tomkins, 1963; Ekman and Friesen, 1968). People can fairly accurately and reliably recognize a wide range of specific affects both in posed and spontaneous situations(see reviews by Davitz, 1964; Izard, 1971; Ekman, Friesen, and Ellsworth, 1972). While the face and body are malleable enough to transmit extremely subtle and complex affect blends[1] that can only be decoded by extensive knowledge of the situational context, there are basic emotions that are recognizable without knowledge of context(Ekman et al, 1972; Ekman, 1973). The basic emotions found by Ekman, which substantially agrees with those found by Izard(1971), are: 1)Happiness(enjoyment, love) 2)Surprise 3)Fear(terror, apprehension 4)Sadness 5)Anger 6)Disgust(contempt) 7)Interest(attention). Affective expressions can also be reliably recognized along dimensional lines such as Pleasant-Unpleasant; Positive-Negative(Izard, 1971); Responsive-Unresponsive(Mehrabian, 1970); Potent-Weak(Mehrabian, 1969).

Birdwhistell(1970) argues that all body and facial expressions are learned and therefore one can say nothing about meaning without knowing the situational context and culture. However, studies by Ekman(1971) show that facial expressions for at least happiness, sadness, disgust, and anger are universally recognizable and probably innate. He showed photographs of facial expressions of Westerners to members of two different preliterate tribes in New Guinea who had almost no contact with Westerners. They had little difficulty distinguishing the four emotions mentioned. Furthermore,

[1]Affect blend is the term used by Ekman to refer to combinations of facial expressions of primary feelings. For example, smugness is a blend of the expressions of anger and happiness(Ekman, 1973, p. 182).

he had the natives express emotions and when he showed the videotapes to American college students they were able to judge the six intended emotions correctly except for a confusion between fear and surprise. In light of these findings, Birdwhistell's view can be reconciled with Ekman's results by stating that while certain facial expressions have universal meaning, cultural and contextual factors are very important in determining what events will elicit a particular emotion and how that emotion will be displayed.

Body acts and positions give cues to the intensity of an emotion more than to the specific emotion involved(Ekman and Friesen, 1968) Body acts, or gestures, such as raising a clenched fist, can give information as to specific affective state, but body positions, such as trunk lean or hand and leg relaxation, give information only about gross affective states(e.g. pleasant or unpleasant). People are also able to accurately infer stress or relaxation(Ekman and Friesen, 1968; 1974b), feelings of like or dislike(Mehrabian, 1970), depression(Waxer, 1976), and anxiety(Waxer, 1977) through body cues. However, more often body acts and positions convey information about the nature of an interpersonal situation rather than expressing basic emotions. This will be discussed in another section. Paralingistic cues--e.g. tone of voice, rate and rhythm of speech-- may confirm, qualify, or negate other cues(Ekman and Friesen, 1976). Tone of voice may provide reliable information in expressing anxiety or anger(Burns and Beier, 1973) but, like body cues, are not as likely as facial cues to reveal basic emotions.

The finding that people can send and detect specific emotions and

gross affective states through three separate nonverbal channels-- the face, body, and tone of voice-- is relevant to the constructs purportedly measured by the instruments used in the present study. If there is a general skill involved in decoding nonverbal communication then people who are good at detecting and discriminating between discrete emotions(as is required in Beier's test) should also be good at discriminating between more general emotional states(as is required in the PONS and the Affective Sensitivity Scale). Furthermore, people who are good at understanding facial cues might be expected to be good at understanding body and paralinguistic cues.

B. Cultural information

Although basic emotions expressed by the face appear to be innate, gestural behavior--the use of hands, wrists, and head positions accompanying speech--is largely learned and has a strong cultural component. Evidence for this is that there are few gestures with universal meaning, except for a few gestural illustrations such as pointing in a direction. Therefore, in order to infer meaning form gestures, information about a person's cultural background is very helpful. Efron(1941), in his study comparing Italian immigrants and traditional Jewish immigrants living in lower Manhattan in New York City showed basic differences in the way these two cultures use gestures. Traditional Jews, originally from Eastern Europe, use gestures to trace the logic and rhythm of the conversation, rarely trying to depict the things being referred to. Traditional Italians tended to illustrate the objects they were talking about with gestures and

to use emphatic movements at the end of a statement. Interestingly, assimilated Italians and Jews resembled each other in gestural behavior more than their respective groups. Similary, Graham and Argyle(1975) showed experimentally that the gestures of Italian college students communicate more effectively than those of English college students.

Another group of researchers found cultural differences in the ability to decode affective states from paralinguistic cues(Albas, McCluskey, and Albas, 1976). Using content filtered speech, they found that Canadian whites were more accurate in discriminating vocal tones of happiness, sadness, love and anger of other whites while Indians were better at decoding the affective states of other Indians, although there were no differences in over-all decoding ability between the two groups. They also point out that American Indian children often feel their white teachers are mean and angry simply because they speak in tones that are louder than are used in Indian culture. Earlier, it was found that Mexican children identified the affective content of filtered speech more accurately than did their Canadian counterparts(McCluskey, Albas, Neume, Cuevas, and Ferrar, 1975).

Hall(1966) has shown the differences in the use of personal space in various cultures and the sometimes amusing or frightening misunderstandings that result when people of different cultures interact. Applying Hall's observations in a more scientific manner, Baxter(1970) showed that Mexicans visiting a zoo interacted at closer distances than did Anglos. Blacks interacted at further distances than did either Anglos or Mexicans. Will(1966) found that blacks greet each other at greater distances than do whites. Arabs, on the other hand, prefer much closer interaction distance, touch each other more, and have more eye contact than

Americans(Watson and Graves, 1966).

The cultural factors cited above suggest that measures of nonverbal decoding ability or interpersonal sensitivity should take into account the cultural background of the people whose behavior is to be decoded as well as that of the people being tested. Different measures of nonverbal decoding ability may differ in the extent to which they include culturally based gestures as cues. If there is a general, unitary skill in decoding nonverbal cues then people who are good at decoding discrete universal emotions should also be bood at decoding the nonverbal cues of their own culture.

C. Interpersonal situations and feelings

It is in understanding the nature of interpersonal situations that sensitivity to nonverbal cues is potentially most useful. This belief is shared even by researchers who have focused on recognizing discrete emotions or categorizing nonverbal behaviors apart from context(Ekman and Friesen, 1968). Nonverbal behaviors can give cues to the kind of interpersonal situation taking place and the relationship and feelings between the participants. These relationship cues are used by the participants themselves as well as by both trained and untrained observers(e.g. Archer and Akert, 1977). At the broadest level, nonverbal cues can play an important role in defining the appropriate frame of reference of a given interpersonal situation--e.g. is a situation play acting or for real?--(Goffman, 1974). Once a framework has been established nonverbal cues can give information about the nature of the relationship.

There are three basic dimensions of interpersonal relationships that can be expressed nonverbally: evaluation, potency or status, and responsiveness(Mehrabian, 1970; Waldron, 1975). Evaluation refers to such categories as liking or disliking(Mehrabian, 1968; 1970), positive or negative attitude(Zaidel and

Mehrabian, 1969), pleasant or unpleasant(Dittman, Boomer, and Parloff, 1965), empathetic or non-empathetic(Haase and Tepper, 1972), accepting or rejecting (D'Augelli, 1974), warmth or coldness(Johnson, 1971). Nonverbal factors are often more important than verbal factors in communicating evaluation(Haase and Tepper, 1972; Zaidel and Mehrabian, 1969). Generally, increases in positive evaluation are denoted by immediate[1] positions and postures such as closer distance, more forward trunk lean, more eye contact, more direct orientation(Mehrabian, 1970; Haase and Tepper, 1972), and more head nods and smiles(D'Augelli, 1974). Apparently facial expressions and eye contact are of greater importance than body positions in communicating positive evaluation(Waldron, 1975).

On the other hand higher status and potency may be communicated more through body positions than through facial expressions. Mehrabian(1968) found that for males higher status relative to the person being addressed was communicated by, in order of importance: head less close to the horizontal(more head hanging), one leg or one foot crossed in front of the other, less eye contact, presence of arms akimbo, more leg and hand relaxation, and less direct shoulder orientation. For females the same cues communicated status but in a different order of importance. Other researchers have found that nonverbal cues are more important than verbal cues in communicating leadership, one form of status(Gitter, Black, Fishman, 1975; Gitter, Black and Walkley, 1976).

The third dimension, responsiveness, is denoted by greater actvity--especially facial activity, speech intonation, and speech rate(Mehrabian, 1970). Nonverbal cues can also communicate cooperativeness or competitiveness in a situation, although verbal cues may be more important here(Johnson, McCarthy, and Allan, 1976). Johnson's group found that cooperativeness was com-

[1]Mehrabian states that, "Immediacy behaviors are those which increase the mutual sensory stimulation between two persons.(Mehrabian, 1972, p. 6)..

municated by a soft tone of voice, smiling, an interested facial expression, relaxed posture, leaning toward the subject, direct eye contact, open gestures, close spatial distance and an occasional soft touch. The opposite behaviors(e.g. harsh tone of voice, lack of eye contact, leaning away) denoted competitiveness. Sexual involvement between people is also denoted by nonverbal cues, expecially by the duration and reciprocity of gazing behavior(Thayer and Schiff, 1977). Similarly, it has been found that newly married couples reveal the degree of harmony in their relationship through nonverbal means. Couples that were assessed by questionnaires and interviews as relatively happy and conflict free sat closer together, looked more frequently into each other's eyes and would touch each other more often than themselves(Beier, 1974).

Sensitivity to nonverbal cues can enable observers to ascertain some characteristics of participants in an interpersonal situation even when one of the participants is not seen(Benjamin and Creider, 1975). Viewers who watched videotapes of the faces of subjects engaged in spontaneous social interaction could guess at better than chance levels the sex, age, and degree of acquaintance of the unseen interactant. Similarly, two researchers have devised a test of nonverbal interpersonal sensitivity which shows that observers can tell much better than chance such things as whether a woman is talking on the phone to a man or another woman, who is the winner in a one on one basketball game, and who is the mother in a scene involving a baby and two women(Archer and Akert, 1977). For one scene, that of a woman talking on a phone, only 51% of those reading a transcript could guess correctly that she was talking to a man, while 81% guessed correctly while looking at a videotape.

Other researchers have focused on the regulating function of nonverbal cues in interpersonal settings. Duncan(1972) has detailed the way in which nonverbal turn-taking cues such as the termination of a hand

gesticulation, a drop in paralinguistic pitch, or a drawl at the end of a phonemic clause, are used in a dyadic conversation to signal when the speaker is willing to relinquish his turn, and the listener can claim his turn to speak. Some behaviors, such as smiles, head nods and active gesticulations appear more related to maintaining the interpersonal setting and seeking approval than any particular content(Rosenfeld, 1966; 1967). Other kinds of behavior--body positions and self-manipulative behaviors--may regulate the expression of negative feelings that cannot be expressed verbally because of cultural rules(Mehrabian, 1971; 1972). The degree of eye contact, smiling, physical distance between interactants, body lean, and body openness interact to regulate the degree of intimacy between people. According to Argyle and Dean(1965) and supported by a more recent review of the literature(Patterson, 1973), each person uses these nonverbal behaviors to maintain a level of intimacy with which he feels comfortable--an equilibrium point that reflects both his approach and avoidance drives in a given situation. Therefore, if one component of intimacy changes, another must also change, in compensation, to maintain equilibrium. If the change is in the direction of too much intimacy the person will feel anxiety about revealing himself and thus avoidance forces will predominate, leading to less eye contact or a backward lean for example. If too little intimacy is perceived the person will feel deprived and approach forces will predominate, leading to more eye contact, or closer physical distance. One study that supports this compensation theory showed that eye gaze was greater when discussion between strangers was on less personal topics(Exline, Gray, and Shuette, 1965).

Since factors such as empathy, liking, positive evaluation, cooperativeness and intimacy can be communicated nonverbally it is likely that the nonverbal behavior as well as the affective sensitivity(empathy) of teachers will affect student performance. Rosenthal(1973) found that

friendly smiling from a psychologist administering a test could raise his subject's score. He also found that students responded to their teacher's expectations of success or failure as communicated by non-verbal means. Another study showed that the intelligence test scores of rural Alaskan Indian and Eskimo children could be raised by communicating greater personal warmth through physical closeness, smiling, and a mutually seated posture(Kleinfeld, 1973). It has been suggested that teachers should study nonverbal communication as part of their training(Lewis and Page, 1974). The study of the effect of the teacher's sensitivity to the affective state of his students as expressed both verbally and non-verbally may be a fruitful area of research(e.g. Gage, Runkel, and Chatterjee, 1969).

Recent research on detecting deception in interpersonal situations has been creative and interesting and points to another area where non-verbal sensitivity is important. Ekman and Friesen(1969) point out that there are two types of deception--alter deception, where the deceiver conceals information from the other interactant, and self-deception, where the person is the object of his own deception. In alter deception both inhibition of the true feeling or information, and simulation of the false feeling and information is necessary. Since the face is most subject to voluntary control of affect displays, Ekman and Friesen hypothesized that body and hand cues would give more clues to deception than would the face. They found some support for this. Judges who saw the videotape of the body of a psychiatric patient who was lying about feeling well enough to be discharged(she broke kown after the interview) described her as more anxious and restless than judges who saw only her face and neck. Wilson(1976) also found that judges made more accurate

judgements of deception from the body than from the face. Recently Ekman, Friesen and Scherer(1976) looked at the ratings of observers who saw videotapes of student nurses who had been instructed to convince others they had just seen a pleasant film when they had actually seen a pleasant film(honest setting) and when they had actually seen a very unpleasant film of amputation and mutilation(dishonest setting). Observers who saw only the faces of the student nurses became more positive in their ratings as they went from viewing the honest setting to the dishonest setting, while ratings made by judges exposed to only the bodies of the nurses became more negative as they viewed the dishonest setting. Previously, Ekman and Friesen(1974b) found that hand shrugs and face-hand play specifically increased during deception, though over-all hand behavior did not. In fact, it seems that over-all movement, especially head nodding and gesticulation, decreases during deception while facial pleasantness and tone of voice increases(Mehrabian, 1971; Ekman, Friesen, and Scherer, 1976). Sex differences may be important since males gazed longer into females eyes while lying, and females gazed longer into males eyes while lying(Burns and Kinty, 1976). It is unclear from these studies whether untrained observers can usually detect deception from nonverbal cues better than chance. One study found they could not(Gagnon, 1976). It would be interesting to see if training judges to pay attention to body cues could increase the ability to detect both alter and self deception. One focus of the present study is the degree to which mental health professionals differ from students in nonverbal sensitivity. This might have implications for psychotherapy training. Interestingly, skill in facial deceiving was positively related to the clinical grades of the student nurses in the 1972 study by Ekman mentioned above.

The preceeding research shows that nonverbal behavior certainly plays a role in how people understand the interpersonal situations they observe. Therefore, if a test of nonverbal sensitivity, such as the PONS or Beier's test, is valid it should correlate with a test of empathic ability consisting of scenes of interpersonal situations such as the Affective Sensitivity Scale.

D. Characteristics of the individual

Several researchers have concluded that features of the interpersonal situation and relationship have a greater affect on nonverbal behavior than does personality(Ellsworth and Ludwig, 1972; Fretz, 1966b). However, some personality factors have been found to be related to nonverbal behavior and expressiveness. Women are more active than men in their visual behavior. They show more eye contact and more non-reciprocal glancing while speaking, listening and during silences in a free peer level dyadic conversation(Exline, Gray, Schuette, 1965). Females high in assessed need for approval smile more in peer interaction(Rosenfeld, 1966). Speakers high in need for achievement differed from those low in that need in their visual behavior(Exline, 1971). Men very high in need for control of others as measured by the FIRO-B looked less when listening than while speaking, while those very low in the need to control others looked more when listening than while speaking(Exline, 1975). During a structured interview students high in need for abasement looked away to the left markedly more often than did those low in the need for abasement. Students high in nurturance maintained eye contact more often than low nurturance students(Libby and Yaklevich, 1973). Studies in proxemics--the use of personal space--revealed that exhibitionistic and impulsive subjects choose to interact at closer distances(Sewel and Heisler, 1973). Sensitivity to nonverbal cues may enable observers to assess the presence of some personality traits when the person is trying to hide these traits. For example, it was found experimentally that observers rated actual extraverts compared to intraverts(as measured by tests) as more extraverted when the subjects were viewed acting out either an extraverted or an intraverted role(Lippa, 1976). The predominance of different kinds of nonverbal behaviors also differentiates various age groups(Janovic, Weiner, and Devoe, 1975) and degrees of emotional and interpersonal

maturity(Steingart and Freedman, 1972; Freedman and Steingart, 1975).

E.Psychopathology and nonverbal communication

Clinicians have long assumed nonverbal cues to be a rich source of information in assessing the presence, type and degree of psychopathology in individuals and groups. In the past 10 years researchers have been attempting to demonstrate experimentally specific nonverbal manifestations of psychopathology. For example, Ekman and Friesen(1968) had naive judges view silent films of psychiatric patients being interviewed at hospital admission and then at discharge. The judges were able to accurately describe the difference in the patient's mental state by responding to differences in the nonverbal behavior displayed by the patient at admission and at discharge. They also showed that paying attention to hand and body cues, rather than facial cues, could show that a patient was still anxious and depressed despite verbal denials(Ekman and Friesen, 1969). It has also been demonstrated that both undergraduate psychology students and clinical psychology graduate students could fairly accurately assess the depth of depression of 12 depressed and 8 non-depressed patients by observing silent videotapes of standard hospital admission interviews. This could be assessed, though not as accurately, even when the observers were not specifically instructed to look for signs of depression. Signs of depression included poor eye contact, downward contracture of the mouth, and lack of hand movements(Waxer, 1976). Similarly, raters naive to the content or context of a clinical situation could accurately assess how anxious a patient was on the basis of nonverbal cues alone(Waxer, 1977). Nonverbal cues may also be crucial in differential diagnosis. Cues such as interpersonal approach behavior, affective expressiveness, firmness of handshake, and degree of

eye contact, may be as important as analysis of thought processes in distinguishing schizophrenia from certain kinds of manic-depressive disorders(Jardon, 1977). Subtle changes in facial muscle patterns, as measured by EMG recording, could distinguish when subjects were self-generating happy, sad, or angry thoughts and feelings even when no differences were readily apparent in the overt face. Furthermore, depressed subjects as compared to normals, showed attenuated facial EMG patterns for happy imagery and accentuated patterns while self-generating sad imagery(Schwartz, 1976). Schizophrenic and depressed patients spend significantly less time looking at an interviewer than do normal subjects(Rutter and Stephenson, 1972). Depressed patients showed very significant increases in the amount of eye contact as they recovered(Hinchcliffe, Lancashire, and Roberts, 1971). It appears that depressives, compared to other psychiatric patients and normals, are poorer at expressing variations in emotional states through nonverbal cues(Prkachin, Craig, Papegeorges, Gunther, 1977).

Another group of researchers has been studying the relationship of hand movements to self-object differentiation, language construction and specific clinical states. Freedman and Hoffman(1967) have differentiated two basic types of hand movements--those accompanying speech which are called object-focused movements, and those involving some form of self-stimulation which are called body-focused movements. In subsequent research they have found that the more withdrawn, disorganized, and undifferentiated the clinical state of a patient, the greater is the percentage of time spent in body-focused hand movements as compared to

object-focused movements during clinical interviews. In fact, chronic schizophrenics use few of the normal object-focused movements people use to punctuate, illustrate or qualify speech. Furthermore, chronic isolated schizophrenics could be differentiated from chronic belligerent schizophrenics by the specific type of body focused movements that predominate. The former show more amorphous and bilateral finger-on-hand activity while the latter show more discrete, instrumental body touching such as scratching and hair touching, just prior to speech(Grand 1976; Grand, Marcos, Freedman, and Barroso, 1977). Changes from an acute paranoid psychotic phase to a post acute phase also showed corresponding changes from body-focused to object-focused movements, and from unrelated, gross object-focused movements(e.g. arm stretching) to movements more directly related to speech(Freedman and Hoffman, 1967). This is consistent with the findings of Ekman and Friesen(1972) that there was a significant increase in the use of speech related hand movements called illustrators, in psychotic depressive patients from admission to discharge.

Psychopathology also appears related to a deficit in the ability to accurately recognize the nonverbal expressions of emotions. Dougherty, Bartlett, and Izard(1974) asked schizophrenics and normals to classify photographs depicting eight basic emotion categories that had been previously standardized. The schizophrenic group did significantly poorer on this emotional recognition task. Also, accuracy patterns differed. Normals were much more accurate in recognizing the categories disgust/contempt and shame/humiliation. Schizophrenics made many more enjoyment/joy and

many fewer disgust/contempt and shame/humiliation responses than normals. This is consistent with Ekman's finding, using the Brief Affect Recognition Test, that depressives did worse than normals in recognizing anger and fear, while schizophrenics did worse in recognizing disgust(Ekman, 1974a). It would be interesting to know if this deficit in schizophrenics is due to an avoidance of specific emotions(e.g. shame/humiliation) or to a general difficulty with more complex emotions. Boys with visual perceptual problems and learning disabilities had greater difficulty recognizing and labeling emotions than did other boys(Bachara, 1976).

F. Psychotherapy, Counseling and nonverbal communication

The psychotherapy or counseling situation is a special kind of interpersonal setting where the study of nonverbal factors and general affective sensitivity(empathy) may be fruitful in increasing the rapport between therapist and client and in furthering the therapist's understanding of his client. Consequently, studies have focused either on the consequences of the therapist's nonverbal behavior, nonverbal indicators of rapport, or on the meaning of the client's behavior and expressiveness.

The focus of studies of the meaning of a client's nonverbal behavior often depends on the theoretical orientation of the researcher. Psychoanalytically oriented researchers have focused on nonverbal expressions of and defenses against unconscious wishes, thoughts, feelings and repressed memories. This has lead to an emphasis on idiosyncratic and body-focused nonverbal behaviors such as self-touching and postural positions which are not directly related to speech, rather than communicative gestures which have a culturally shared meaning. For example, Mahl(1968) noted body acts and gestures and wrote down clinical impressions while observing psychiatric interviews through a one way mirror. He then compared these impressions with

those he obtained from case records and from listening to a tape recording of the interview. From this he concluded the following: Rubbing or touching the nose alluded to feelings of contempt or disgust; scratching related to inhibition of aggression; finger-mouth contact is related to oral erotic needs and gratification; self-rubbing related to general stimulation and tension reduction; picking, smoothing, and cleaning reflected obsessive traits. Deutsch(1952) noted postural configurations of analytic patients while on the couch and concluded that, "The appearance and disappearance of a posture represents the attitude of the ego towards an action impulse with which the specific movement is associated" (Deutsch, 1952, p. 200). He believed that very specific relationships could be found in individuals, such as a turn to the right signifying a turn to the father image and a turn to the left toward the mother image. Reich(1944) saw nonverbal cues as indicators of long-term character traits. Fenichel(1953) felt nonverbal messages could help the therapist to choose the right time for interpretation. A shortcoming of all of these studies is that they are not controlled and are very much subject to observer bias. In a study less subject to bias, Sainsbury(1955) showed that gestural movements increased when stressful topics were discussed in psychiatric interviews, especially so when feelings of resentment and indignation were stirred.

Interactional and family researchers focus on nonverbal communication as either an expression of an individual's role in a group or as a way of maintaining pathological relationships and inconsistent communications. Here the emphasis has been on either facial expression, tone of voice, and proximity of group members, or on postural configurations which have a

shared meaning to the members of the group(e.g. Minuchin, 1965; Ferber, 1972; Scheflen, 1964). For example, Scheflen shows, in a minute analysis of the first half-hour of a taped family therapy session, how each postural shift relates to a shift in role--say from explaining to defending(Scheflen, 1973). Charney(1966), analyzing a film of a psychotherapy session, concluded that postural configurations are behavioral indicators of rapport or relatedness. When the patient assumes a posture that is congruent with that of the therapist or "mirrors" the therapist's posture, rapport is good and verbalizations tend to be more positive, interpersonal, specific and relevant. All of these studies need to demonstrate reliability of interpretation across different observers.

The great majority of experimental studies on the effect of nonverbal behavior of the therapist and the therapeutic setting have been done by counseling psychologists coming from a Rogerian background. Therefore, the emphasis has been on the relationship of nonverbal factors to the perception of the counselor as positive, warm, genuine, and empathetic. Fretz(1966a)found that the client's leaning forward and backward often during a counseling session was significantly related to a good therapeutic relationship as measured by the Barrett-Leonard Relationship Inventory. This is a self-report inventory filled out by client and therapist which measures such factors as level of regard, empathetic understanding, congruence, unconditionality of regard, and willingness to be known(Barrett-Leonard, 1962). Counselors who perceived a more favorable relationship used more hand movements and smiles and laughs. Generally a high degree of gestural movements by the counselor leads to more positive descriptions by observers while immobility leads to counselors being seen as cold, aloof and analytic(Strong, Taylor, Bratton, and Loper, 1971).

Studies of proxemics have found that people prefer closer client-counselor distances of between 30 and 50 inches as opposed to interaction distances greater than 66 inches(Haase, 1970). A close position may elicit greater verbal output(Kelly, 1973). Both very close(30") and very far(88") counseling interaction distances provoke greater anxiety than middle distances(Dinges and Oetting, 1972). Males and females show similar preferences.

Several studies have established that greater counselor eye contact, more forward trunk lean, and closer interaction distance contribute significantly to higher ratings of empathy by observers(Haase and Tepper, 1972; Kelly, 1973). Although little can be done to salvage a verbal message that is very low in empathy, the proper combination of nonverbal behaviors can significantly raise the empathic value of verbal messages that are of medium empathy. Furthermore, negative nonverbal behavior, especially gaze aversion, can significantly lower the value of even highly empathetic verbal messages(Haase and Tepper, 1972). Consistency between the therapist's verbal and nonverbal messages, even where both messages are negative, leads to higher ratings of counselor genuineness by the client(Graves and Robinson, 1976). There is some evidence that these nonverbal factors, especially in the way they reflect over-all empathy, relate to outcome in psychotherapy. For example, it was shown that evaluations by both parents and therapists noted significantly more improvement for children with therapists rated higher in accurate empathy, nonpossessive warmth and genuineness communicated both verbally and nonverbally. There was some evidence to suggest deterioration in children seen by therapists providing low levels of these attributes(Traux, Altman, Wright, and Mitchell, 1973).

The research findings relating nonverbal cues to charactersitics of the individual, psychopathology, and psychotherapy suggests that it would be helpful if psychotherapists and counselors were more skilled in assessing both verbal and nonverbal cues than is the general population. The present study, to be discussed later, will look at differences between mental health professionals and college students in nonverbal and affective sensitivity.

III. Affective sensitivity(empathy) and the ability to decode nonverbal cues

From the previous review it is clear that nonverbal cues can provide a rich source of information about inner emotional states and the nature of interpersonal relationships. In the course of studying the expression of emotions, several researchers developed materials that could be used to compute the accuracy with which individuals can recognize different emotions by nonverbal cues. These materials usually consisted of photographs(e.g. Izard, 1971; Ekman, Friesen, and Ellsworth, 1972) or films(e.g. Burns and Beier, 1973) of facial expressions or body parts(James, 1932) of different emotions posed by either one actor or several different actors. Judges would usually be required to choose, in a multiple choice format, which emotion was being expressed. A few researchers used photos or silent films of spontaneous emotions evoked by experimental manipulation, such as purposely inducing stress in an interview. Here subjects were asked to guess which set of circumstances(e.g. stressful or unstressful) elicited the expression they were viewing(Ekman, 1965; Lanzetta and Kleck, 1970). Results with these and more recent materials developed explicitly to measure nonverbal decoding ability have shown wide individual differences as well as differences between various groups. It is clear that individuals can generally read nonverbal cues at better than chance levels with both posed and spontaneous stimuli(Ekman et al, 1972; Rosenthal, 1974a; 1974b; Zuckerman, DeFrank, Hall, and Rosenthal, 1976; Archer and Akert, 1977).

The focus of the present study is the relationship between the ability to decode nonverbal communications and a more general skill that depends on both verbal and nonverbal cues, called affective sensitivity or

empathic ability. Affective sensitivity is conceptualized as the ability to detect and describe the immediate emotional and interpersonal state of an individual. If nonverbal decoding ability is an important component of general affective sensitivity then individuals who score high on measures of the former should also score high on measures of the latter, assuming that the measuring instruments are valid. Nonverbal decoding ability was measured by two instruments used in previous studies--the Profile of Nonverbal Sensitivity(Rosenthal, 1974a; 1974b) and a test constructed by Beier(Burns and Beier, 1973). General affective sensitivity was measured by the Affective Sensitivity Scale-Form D(Kagan and Schneider, 1975, 1977).

The only reports in the literature in which the same subjects were tested with two different measures of nonverbal decoding ability are those by Zuckerman and his colleagues using the Profile of Nonverbal Sensitivity(PONS). In the first study subjects(senders) were videotaped while posing expressions of anger, happiness, sadness, fear, surprise, and disgust--first visually and then via tone of voice(Zuckerman, Lipsets, Koivumaki, and Rosenthal, 1975). These expressions were presented to the senders and another group of judges for decoding. Accuracy scores were obtained and a significant correlation of .31 was found between decoding accuracy scores and scores on the PONS. In the second study subjects viewed two pleasant and two unpleasant videotaped scenes. To get spontaneous emotional expressions, their faces were videotaped when they watched the scenes and when they talked about their reaction to the scenes. Later "senders" were also videotaped while posing the appropriate expressions for each of the four scenes. The videotaped facial expressions were presented to the senders for decoding. There was a significant correlation of .58 between the ability to decode the spontaneous facial expressions

of those watching pleasant or unpleasant scenes and the ability to decode the posed expression. There was also a significant correlation between over-all decoding ability(a composite measure of the posed, spontaneous, and talking condition) and decoding ability measured by the PONS. Therefore, based on this limited evidence, it was hypothesized in the present study that there would be a significant correlation between the PONS and Beier's test, which purport to measure similar skills.

There have been no reports of studies correlating a measure of nonverbal decoding ability with a measure of general affective sensitivity(empathic ability). There is indirect evidence that these two skills are related. For example, most studies have found that females are better than males at decoding nonverbal communications(Rosenthal, 1974b; Zaidel and Mehrabian, 1969; Zuckerman et al, 1975;1976; Penprase, 1974; Kehoe, 1974; Glazner, 1974; Sweeney and Cottle, 1976) as well as superior in empathic ability and affective sensitivity(Dymond, 1949; Schneider, Kagan, and Wernèr, 1977). The sex differences are usually small but significant and may decrease as age increases. A few studies have found no sex differences in nonverbal decoding ability(Buchman, 1972; Zlatchin, 1974; Beldoch, 1964; Lee, 1976; and some of the early studies summarized by Davitz(1964). One problem with these studies is that males and females were not matched on I.Q. or other measures of intellectual or academic achievement.

A majority of studies also show that people who are engaged in fields of work or study that require empathic skills for success score higher on measures of nonverbal sensitivity as well as on measures of affective sensitivity. Rosenthal(1974a), using the PONS, states that for actors, artists, interior and industrial designers. psychiatrists, clinical psychologists students in visual arts courses, and schoolteachers, men score as high as women. This

would indicate that these groups score higher than the norm on this test of nonverbal decoding ability. Similarly, a look at the norms of various groups tested with the Affective Sensitivity Scale(AFSS) shows that psychotherapists, school counselors, Ph.D students in counseling, teacher trainees, and social work undergraduates score somewhat higher than other groups. Several others, using different measures of nonverbal decoding ability have found clinical and counseling psychologists superior to control groups(Kehoe, 1974; Lee, 1976; Waxer, 1976). However, a few researchers have not found psychologists superior to nonpsychologists. Sweeney and Cottle(1976) found no difference between counselors and noncounselors in nonverbal decoding ability while Taft(1955) found that people educated in psychology were less accurate in making judgements about others than are people involved in decision making such as business managers. It is possible that these disparate results reflect important differences in the instruments used. For example, in the three studies where psychologists were found superior to non-psychologists in nonverbal decoding ability the instruments consisted of either actual or simulated scenes of counseling or psychiatric interviews. In the study in which no differences were found between counselors and noncounselors(Sweeney and Cottle, 1976) the instrument used consisted of photographs of posed expressions of discrete emotions, not of nonverbal behavior in counseling situations.

If nonverbal decoding ability is an important component of empathic ability then personality characteristics that are related to nonverbal decoding ability should also relate to empathic ability. Very little research has been done relating personality characteristics to present measures of these abilities. Rosenthal(1974b) reports that preliminary studies with the PONS show that those with greater nonverbal decoding ability had warmer and more satisfying peer relationships, though fewer

friends. High scores were also related to more effective functioning in the social and intellectual areas of the California Personality Inventory. Similarly, cognitive complexity was related to high scores on the PONS but the over-all relationship to I.Q. was small(r=.2). High scorers were task-oriented rather than people-oriented workers on a test of leadership. Teachers who were more sensitive to nonverbal cues were less authoritarian and more democratic in their teaching orientation. Zaidel and Mehrabian(1969) found that people low in the need for social approval were better at expressing variations in negative attitudes nonverbally. However, there was no significant correlation between the need for social approval and nonverbal decoding ability as measured by the ability of judges to discriminate between three degrees of liking and disliking enacted by senders speaking single words using facial or vocal signals. No formal studies relating personality characteristics and empathic ability as measured by recent testing instruments such as the Affective Sensitivity Scale(AFSS)(Kagan and Schneider, 1975, 1977) have been reported.

A secondary purpose of the present study was to see if a broad personality factor relevant to psychotherapy and counseling, the A-B therapist variable(Whitehorn and Betz, 1954; 1956), relates to skill in decoding nonverbal cues and/or affective sensitivity. Originally A therapists were those who worked best with schizophrenic patients, while B's were those who had the most difficulty with such patients. Subsequently, various interest patterns, personality factors and interpersonal styles were found to relate to A and B type therapists. Later it was found that people in general could be divided into A personality types and B types depending on their interest patterns. Since sensitivity to nonverbal

expressions of feelings and interpersonal relationships was considered especially important in work with schizophrenics(Fromm-Reichmann, 1950), it was hypothesized that A types would do better than B types on all three measures--the PONS, Beier's test, and the AFSS--used in this study but especially on the AFSS.

In summary the following hypotheses, based on the review of previous studies outlined above, was tested in this study:

1)Scores on the two measures of nonverbal decoding ability, the PONS and Beier's measure, will show a significant positive correlation with each other.

2a)Scores on the PONS will show a significant positive correlation with scores on the measure of empathic ability, the AFSS.

2b)Scores on Beier's measure of nonverbal decoding ability will show a significant positive correlation with the AFSS.

3a)Female students will score slightly but significantly higher than male students on all three measures.

3b)There will be no significant sex differences among mental health professionals.

4)Mental health professionals will score significantly higher than students on all three measures.

5)A therapist personality types will score significantly higher than B types on all three measures. This will be more marked for scores on the AFSS since others have suggested a relationship between A-ness and empathy(Silverman, 1967).

Subjects

The subjects for this study were 46 undergraduate students and 14 mental health professionals. Student subjects were from the City University of New York and were recruited from posters on campus asking students to volunteer for a study about skill in understanding nonverbal communications. There were 21 male students and 25 female students. Mental health professionals were acquaintances of the experimenter. They included six Psychologists either with Ph.D degrees or with all Ph.D requirements completed but the dissertation, seven Psychiatric Social Workers, and one Community Mental Health Nurse. All were relatively beginning professionals with about one or two years completed working in a clinical setting as staff members. There were seven male and seven female mental health professionals. The average age of the professionals was 28.6 and the average age of the students was 23.4, a statistically significant difference.

Method

Subjects were tested in two sessions. During the first session subjects were given two different tests of their ability to decode nonverbal cues, the PONS and then Beier's test. During the second session, approximately one week later, subjects were given a test of empathic ability, the AFSS-Form D, and filled out the A-B therapist scale questionnaire. A correlation matrix was generated showing the relationship between the three measures over-all and for students and professionals. A therapist personality types were compared with B types. T-tests were performed to test for significant correlations in accordance with the hypotheses. The experimenter was given only instructions and answer booklets for the PONS and the AFSS and therefore was not aware of the correct responses for these tests. The PONS was scored at Harvard University by Rosenthal's colleagues and the AFSS was scored by Kagan at Michigan State.

Materials

A. Profile of Nonverbal Sensitivity(PONS)(Rosenthal, 1974a; 1974b)

This test purports to measure a person's ability to understand two kinds of nonverbal communication--tone of voice and movements of the face and body. The test is a 45 minute 16MM sound film comprised of 220 two-second segments of posed facial and/or body expressions accompanied by spoken phrases that can be heard as sounds or tones but not as words. The viewer is instructed to choose which one of two statements best describes the two-second scene he has just seen. The subject has about five seconds to choose an answer before the next scene begins. For example, the examinee would have to choose between "expressing jealous anger" and "talking to a lost child" or between "helping a customer" and "talking about one's divorce". The same actress portrays each scene. There are a total of 20 different scenarios--10 portraying positive affects and 10 portraying negative affects--represented by 11 nonverbal channels. The eleven channels are face, body, face plus body,content-filtered audio, randomized-spliced audio,face plus randomized-spliced audio, face plus content-filtered audio, body plus randomized-spliced audio, body plus content-filtered audio, face plus body plus randomized-spliced audio, and face plus body plus content-filtered audio. The test yields a total score as well as subtest scores representing a person's ability to decode cues in each of the 11 channels and for each of four emotion categories--positive-dominant, positive-submissive, negative-dominant, and negative-submissive. For the purpose of this study only total scores are reported, since the interest is in over-all nonverbal decoding ability, not just for a particular emotion category or body area. Rosenthal(1974a) points out that full scale reliability is moderate, .75 and that scores on the four affective categories or quadrants, correlate about .5 with each other. He states that some validity studies have shown that subjects' PONS scores

are correlated with how sensitive to nonverbal cues their spouses report them to be. High PONS scorers were also more accurate at assessing life histories based on Dailey's Programmed Cases method.

B. Beier's measure

This measure of nonverbal decoding ability was not developed specifically as a test. It was used to see the degree to which verbal, vocal, and visual cues assume importance in successfully decoding portrayals of different emotional states(Burns and Beier, 1973). This measure is a 16MM sound film consisting of 56 portrayals of seven different emotions, each lasting approximately five seconds. The portrayals were done by different male and female undergraduates. The emotions portrayed are Indifferent, Sad, Anxious, Happy, Flirtatious(Seductive), Angry, and Sarcastic. In order to eliminate any possible implications of verbal content, the film was shown without sound. The viewer is required to choose which one of the seven emotion categories is being portrayed after each segment. A total score was converted to the percent of correct answers. Of the 56 portrayals, only 44 were reported to be reliable(Beier, personal communication, 1975). An item was considered reliable if 11 out of 21 judges(52%) in a criterion group were able to judge correctly what emotion the actor was trying to portray. Only these 44 items were counted in the score. There are no reports of test-retest reliability for the total score. Administration of this test takes about 25 minutes.

C. Affective Sensitivity Scale-Form D(Kagan and Schneider, 1975, 1977).

The AFSS is an instrument designed to test a person's ability to detect and identify the immediate affective state of another who is engaged in various interpersonal interactions. It was developed as an objective measure of empathy, although it is often used to train counseling psychologists. The test is a 16MM sound film consisting of 30 segments, varying from eight seconds to two minutes, taken from real life interpersonal

encounters. Following each scene the examinee is asked to choose which one of five statements would reflect what one of the participants is feeling. For each item there is one preferred correct answer which scores two points and at least one other non-preferred but correct answer that scores one point. Schneider(1977) states, "Correct alternatives were generated from two sources: a)what persons said they were actually feeling at that time, which was determined from their recall while viewing the videotape of the interaction immediately following the session, and b) what a panel of people who were reputed to be highly empathetic, usually clinical supervisors who were sought out by students, said they thought was going on "(Schneider, 1977, p. 4). Scenes were selected from a wide variety of interactions including doctor-patient interviews, informal interactions between friends, teachers with students, group settings, as well as counseling and psychotherapy sessions. Scenes included men and women and blacks and whites in both the interviewer and interviewee role. A total score is obtained as well as a series of subscale scores reflecting the categorization of different types of scenes. These categories are Client, Interviewer, Adult, Child, Male, Female, Group, Dyad, Educational, Health Care, Informal, Counseling, and Psychotherapy. Studies of the reliablity of an earlier version showed a test-retest reliability of .75 after two weeks and between .58 and .67 after six months. Internal consistency ranged from .58 to .77(Campbell, Kagan, and Krathwohl, 1971; Danish and Kagan, 1971). The new Form D, which was employed in the present study, has shown test-retest reliability of .63(Schneider, 1977) and moderate internal consistency of .67(Kagan, 1977). One validity study reported by Schneider showed that

People identified as highly empathetic by colleagues scored significantly higher than the normative sample. Another study found the AFSS sensitive to change as a function of training in Interpersonal Process Recall and other types of empathy training(Burke, 1976). It should be noted that the old Form B does not correlate with the new Form D(Kagan, 1977). Form D differs from Form B in the following ways: 1) the quality of the film in Form D is much superior. Subjects taking the old Form B reacted with annoyance and anger while people report enjoying taking Form D; 2) Form B allows only one right answer while Form D allows more than one correct answer for each item; 3)Form B presents three alternatives for each item while Form D presents 5 alternatives; 4)Form D has a wider variety of scenes.

D. A-B therapist personality type scale

The A-B therapist type scale administered to all subjects in this study consists of the 23 items of the Strong Vocational Interest Blank that were found to differentiate those psychiatrists who were most successful with schizophrenics from those who were least successful(Whitehorn and Betz, 1960). As show interest patterns similar to those of professions which require flexibility(Lawyers and CPA's) while Bs show interest patterns of professions that require precision and a mechanistic approach(Printers and Mathematics-Physical Science Teachers). For a more detailed review of the A-B scale and its personality correlates see Appendix B.

For the present study subjects were classified as A types if 13 or more of their responses were A responses and as B types if 13 or more responses were B. If a subject had 12A and 11 B responses or 12 B and 11 A, he was counted as neither A nor B. This was done to avoid the possibility that scores of people who were neither A nor B types would obscure significant differences. In addition, A-ness or B-ness was correlated with other measures as a continuous variable by counting the number of A responses of all subjects. Normative data on the distribution of A-B types is not available.

Results

Examination of Table 1 shows that hypothesis 1--that there would be a significant positive relationship between the two different measures of nonverbal decoding ability--is not supported.

Table 1

The correlational relationship between the PONS, Beier's test and the AFSS--all subjects combined

Test	Beier($\bar{X}$=67.14)	PONS($\bar{X}$=170.65)	AFSS($\bar{X}$=77.21)
Beier	_____	r=.19 (n=56,p=.15) ns	r=.04 (n=48,p=.75) ns
PONS	r=.19 (n=56,p=.15) ns	_____	r=-.01 (n=47,p=.9) ns
AFSS	r=.04 (n=48,p=.75) ns	r=-.01 (n=47,p=.9) ns	_____

The correlation between the PONS and Beier's test is positive(r=.19) but does not reach statistical significance(p=.15). Apparently these two tests measure different abilities. Table 2 shows that this nonsignificant relationship holds for both students and professionals.

The internal consistency of the two tests of nonverbal decoding ability was analyzed since low internal consistency on either test would lower the probability of finding a significant correlation between the two tests. The internal consistency of the PONS, based on the intercorrelations of the 11 independent channels, was good--alpha=.79. This is

Table 2

The relationship between Beier's test, the PONS, and the AFSS for students and mental health professionals separately

Students

Test	Beier	PONS	AFSS
Beier	-----	r=.15 (n=43) ns	r=.13 (n=34) ns
PONS	r=.15 (n=43) ns	-----	r=.16 (n=34) ns
AFSS	r=.13 (n=34) ns	r=.16 (n=34) ns	------

Mental Health Professionals

Test	Beier	PONS	AFSS
Beier	-------	r=.38 (n=13) ns	r=-.41 (n=14) ns
PONS	r=.38 (n=13) ns	-------	r=-.52* (n=13)
AFSS	r=-.41 (n=14) ns	r=-.52* (n=13)	------

*p=.06

similar to the K 20 internal consistency of .86 reported recently by Rosenthal(Rosenthal, Hall, Archer, DiMatteo, and Rogers, 1978). The internal consistency of Beier's test, based on the intercorrelations of the seven independent emotion categories, was poor--alpha=.41. Examination of the intercorrelations of the 11 PONS channels(see Appendix C) shows that most of the channels correlate significantly with each other, indicating that some consistent ability is being measured across channels. On the other hand, examination of the intercorrelations of the seven emotion categories of Beier's test(see Appendix D), shows that very few of the emotion categories correlate significantly with each other. This indicates that different abilities are

involved in decoding the different emotions shown in Beier's test. This finding suggested it would be important to look at the relationship between the ability to decode individual emotions as measured by Beier's test and the over-all PONS scores. Table 3 shows the ability to decode sadness is the only one of the seven emotions significantly related to total PONS scores(r=.29,p=.03). In addition, decoding Beier's sadness category was marginally significantly related to decoding negative-dominant scenes on the PONS(r=.26,p=.06) and decoding anger was significantly related to decoding negative-dominant PONS scenes(r=.41,p=.002).

Table 3

Relationship between Beier's emotions, total PONS scores and PONS emotion category subscales

Beier's Emotion Categories	PONS Total and Emotion Category Subscale Scores					
	Total PONS(N=52)	Positive-Submissive	Pos-Dom	Negative-Submissive	Neg-Dom	
Indifferent	r=.12 n=52 ns	r=.18 n=52 ns	r=.08 n=52 ns	r=.03 n=52 ns	r=.04 n=52 ns	
Sad	r=.29* p=03	r=.23 ns	r=.19 ns	r=.17 ns	r=.26* p=.06	
Anxious	r=-.02 ns	r=-.25 ns	r=-.05 ns	r=.04 ns	r=.21 ns	
Happy	r=.06 ns	r=.002 ns	r=.11 ns	r=.03 ns	r=.05 ns	
Flirtatious	r=.01 ns	r=-.01 ns	r=.07 ns	r=-.11 ns	r=.16 ns	
Angry	r=.15 ns	r=.02 ns	r=-.15 ns	r=.22 ns	r=.41* p=.002	
Sarcastic	r=-.04	r=-.01	r=-.08	r=-.14	r=.16	

*significant

These correlations may indicate there is a general ability to decode specific types of emotions--e.g. certain negative emotions--that are measured by both tests, although there is no general nonverbal decoding ability common to both tests. However, it is also possible that these three significant correlations found between Beier's emotions and the PONS are due to chance. Table 3 contains a post-hoc analysis of 35 correlations. Approximatley two such correlations would be expected to reach significance by chance alone.

A similar problem arises in the post-hoc analysis of the correlations between individual channels of the PONS and Beier's test and it's individual emotion categories, as presented in Table 4. Table 4 shows a significant correlation between total scores on Beier's test and the Face+Body channel of the PONS and between total Beier scores and the Content-Filtered channel of the PONS. All other PONS channels show no significant correlation with total Beier scores. It is difficult to make sense of these correlations. Why should the channel of the PONS that depends on tone of voice cues(content-filtered) correlate with Beier's test, which was shown without sound, while the channel that shows face+body+voice cues does not correlate? Similarly, there is no evident pattern in the seven significant correlations(out of a possible 77) found between the individual PONS channels and the individual emotions of Beier's test. If these few significant correlations do not reflect chance findings, they may reflect an unknown common factor between items on the two tests other than nonverbal cues or emotions expressed.

Table 4

The relationship between the PONS channels and Beier's emotion categories

PONS Channels	Beier's emotion categories								
	Total Beier N=56	Indif-ferent	Sad	Anxious	Happy	Flirt-atious	Angry	Sarcas-tic	
Channel 1	r=.11 ns	r=.08 ns	r=.20 ns	r=.02 ns	r=-.11 ns	r=.01 ns	r=.19 ns	r=-.11 ns	
Channel 2	r=.20 ns	r=-.00 ns	r=.26 ns	r=-.02 ns	r=.16 ns	r=.29*	r=.05 ns	r=-.10 ns	
Channel 3	r=.29*	r=.27*	r=.33*	r=.10 ns	r=.04 ns	r=.07 ns	r=.16 ns	r=-.09 ns	
Channel 4	r=.13 ns	r=-.06 ns	r=.15 ns	r=.03 ns	r=.05 ns	r=.03 ns	r=.21 ns	r=.04 ns	
Channel 5	r=.27*	r=.05 ns	r=.10 ns	r=.11 ns	r=.07 ns	r=.12 ns	r=.25 ns	r=.28*	
Channel 6	r=-.10 ns	r=.11 ns	r=.10 ns	r=-.14 ns	r=-.09 ns	r=-.16 ns	r=-.13 ns	r=-.13 ns	
Channel 7	r=-.04 ns	r=.09 ns	r=-.03 ns	r=-23 ns	r=.01 ns	r=-.03 ns	r=.03 ns	r=.003 ns	
Channel 8	r=.14 ns	r=-.02 ns	r=.39*	r=.08 ns	r=.03 ns	r=.01 ns	r=-.09 ns	r=.01 ns	
Channel 9	r=.12 ns	r=.31*	r=.006 ns	r=.15 ns	r=.03 ns	r=-.22 ns	r=.07 ns	r=.03 ns	
Channel 10	r=-.02 ns	r=-.06 ns	r=.15 ns	r=-.14 ns	r=.09 ns	r=-.10 ns	r=.01 ns	r=-.27*	
Channel 11	r=-.01 ns	r=.01 ns	r=.07 ns	r=-.21 ns	r=.03 ns	r=-.10 ns	r=.13 ns	r=.001 ns	

* p=less than .05

Channel 1--Face; Channel 2--Body; Channel 3--Face+Body; Channel 4--Randomized spliced speech; Channel 5--Content-filtered speech; Channel 6--Face+Randomized spliced; Channel 7--Face+Content-filtered speech; Channel 8--Body+Randomized spliced; Channel 9--Body+Content-filtered speech; Channel 10--Body+Face+ Randomized spliced speech; Channel 11--Face+Body+Content-filtered speech

Hypothesis 2a and 2b--that there would be a significant positive relationshp between each test of nonverbal decoding ability and the test of affective sensitivity(empathy)--also was not supported. Examination of Table 5 shows that the relationship between the PONS and the AFSS and that between Beier's test and the AFSS is almost 0. However, examination of the correlations for students as compared to those for professionals, as seen in Table 2, shows some interesting trends. For students there is a positive (r=.16), thought not statistically significant relationship(p=.34), between PONS scores and scores on the AFSS, while for mental health professionals there is a negative relationship that is marginally significant(r=-.52, p= 06). Using Fisher's Z' test for differences between independent correlations(Cohen and Cohen, 1975), the PONS-AFSS correlation for mental helath professionals is significantly different for mental health professionals from that for students(p=.05). One must be cautious in interpreting this difference since the negative correlation for professionals is marginally significant and the N is small. However, apparently not only are the skills measured by the PONS and Beier's test very different from those measured by the Affective Sensitivity Scale, but for mental health professionals being high in skills measured by the PONS is associated with being low in skills measured by the AFSS. Possible reasons for this will be discussed in the next section.

Hypothesis 3a--that females would score significantly higher than males in both nonverbal decoding ability and affective sensitivity--was not supported. Table 5 shows that the mean score for males is slightly higher that that for females on the PONS and on the AFSS, while females averaged slightly higher on Beier's test but these slight differences could easily have been due to chance and do not approach statistical significance.

Table 5

Comparison of test scores by sex--for all subjects combined.

Test	Sex	N	$\bar{X}$	SD	t	
PONS	Males	26	172.0	11.8	.81	
	Females	30	169.4	11.6		NS
Beier	Males	27	66.7	9.6	.32	NS
	Females	30	67.5	9.6		
AFSS	Males	24	77.5	7.3	.28	NS
	Females	27	76.9	6.4		

Hypothesis 3b-- that there would be no significant sex differences among mental health professionals is supported by the results in Table 6. Table 6 does not support the hypothesis that there would be significantly higher scores for female students than for male students on all three measures. In addition Table 7 and Table 8 show that there were no significant sex differences on any of the 11 PONS channels or on any of the seven emotions of Beier's test

Table 6

Comparison of test scores by sex--for students and professionals

Students					Mental Health Professionals				
Test	Sex	N	$\bar{X}$		Test	Sex	N	$\bar{X}$	
PONS	Males	20	171.9	NS	PONS	Males	6	172.16	NS
	Females	23	170.0			Females	7	167.50	
Beier	Males	20	66.8	NS	Beier	Males	7	67.5	NS
	Females	23	66.5		Beier	Females	7	69.7	
AFSS	Males	17	75.8	NS	AFSS	Males	7	81.42	NS
	Females	20	77.1			Females	7	76.42	

Table 7

Sex differences on the 11 channels of the PONS--all subjects

Channel**	Sex	N	X	SD	t	Channel	Sex	N	X	SD	t
1	Male	26	164.42	17.1	1.41	7	Male	26	167.88	12.8	1.14
	Female	30	157.83	17.6			Female	30	162.83	19.2	
2	Male	26	157.30	24.0	.72	8	Male	26	152.30	21.1	.09
	Female	30	152.83	22.6			Female	30	151.83	16.4	
3	Male	26	163.07	19.3	-.05	9	Male	26	147.69	14.8	.70
	Female	30	163.33	19.7			Female	30	144.66	17.3	
4	Male	26	121.34	22.07	-.90	10	Male	26	165.76	15.7	.10
	Female	30	121.16	17.8			Female	30	165.33	17.3	
5	Male	26	127.30	20.6	.33	11	Male	26	172.30	17.5	.96
	Female	30	125.50	20.5			Female	30	167.66	18.5	
6	Male	26	180.34	15.3	.90						
	Female	30	176.66	15.3							

**Channel definitions can be found at the bottom of Table 4 (page 41)

Table 8

Sex differences on Beier's seven emotion categories

Emotion	Sex	N	$\bar{X}$	SD	t	Emotion	Sex	N	$\bar{X}$	SD	t
Indifferent	Male	18	4.61	1.6	-.02	Flirtatious	Male	18	4.83	1.0	-1.25
	Female	21	4.61	1.6			Female	21	5.28	1.1	
Sad	Male	18	3.83	1.4	.15	Angry	Male	18	6.61	.7	.57
	Female	21	3.76	1.5			Female	21	6.42	1.1	
Anxious	Male	18	2.00	1.3	-.49	Sarcastic	Male	18	1.27	.6	-.51
	Female	21	2.23	1.6			Female	21	1.38	.5	
Happy	Male	18	6.22	1.2	.55						
	Female	21	5.95	1.7							

Hypothesis 4--that mental health professionals would score higher than undergraduates in nonverbal decoding ability and affective sensitivity--was not supported. Table 9 shows that the mean score for mental health professionals was slightly higher on Beier's test(68.62 compared to 66.66 for students) and the AFSS(78.92 compared to 76.56 for students) while students scored slightly higher on the PONS(170.93 compared to 169.65 for professionals), but these differences do not approach statistical significance and could easily be due to chance. There were no significant differences between students and professionals on any of the 11 PONS channels, as shown in table 10. Of the seven emotion categories on Beier's test, there was one significant difference in scores between professionals and students. Professionals were significantly superior in recognizing anxiety($\bar{X}$=3.23 for professionals compared to 2.12 for students--t=2.23,p=.03). This appears in Table 11. There is support for the possibility that male mental health professionals are superior to male undergraduates in empathic ability as measured by the AFSS. Examination of Table 6 shows that male professionals averaged 81.42 of the AFSS while male undergraduates averaged 75.8. This represents a marginally significant difference(p=.06).

Table 9

Comparison of test scores between students and mental health professionals

Test	Occupation	N	$\bar{X}$	SD	t	
PONS	Professionals	13	169.65	11.3	.25	NS
	Students	43	170.93	13.4		
Beier	Professionals	14	68.62	10.0	.66	NS
	Students	43	66.66	8.2		
AFSS	Professionals	14	78.92	5.4	1.11	NS
	Students	37	76.56	7.2		

Table 10

Differences between professionals and students on the 11 PONS channels

Channel	Occup.	N	$\bar{X}$	SD	t	Channel	Occup.	N	$\bar{X}$	SD	t
1	Stud.	43	159.53	18.1	-1.05	7	Stud.	43	166.74	15.7	1.29
	Prof.	13	165.38	15.7			Prof	13	160.00	19.1	
2	Stud.	43	155.69	21.3	.46	8	Stud.	43	152.55	19.2	.37
	Prof.	13	152.30	29.4			Prof.	13	150.38	16.8	
3	Stud.	43	164.30	17.7	.76	9	Stud.	43	145.81	16.5	-.22
	Prof..	13	159.61	24.5			Prof.	13	146.92	15.48	
4	Stud.	43	123.37	21.0	-.38		Stud.	43	166.97	16.1	1.19
	Prof.	13	125.76	16.0		10	Prof.	13	160.76	17.5	
5	Stud.	43	126.62	21.3	.19	11	Stud.	43	168.83	17.7	-.74
	Prof.	13	125.38	17.6			Prof.	13	173.07	19.3	
6	Stud.	43	178.83	14.6	1.50						
	Prof.	13	176.92	17.9							

Table 11

Differences between Students and Professionals on Beier's seven emotions

Emotion	Occup.	N	$\bar{X}$	SD	t	Emotion	Occup.	N	$\bar{X}$	SD	t
Indifferent	Stud.	39	4.61	1.61	1.42	Flirtatious	Stud.	39	5.07	1.1	.21
	Prof.	13	3.92	1.1			Prof.	13	5.00	1.0	
Sad	Stud.	39	3.79	1.4	-.98	Angry	Stud.	39	6.51	.9	- 1.86*
	Prof.	13	4.23	1.1			Prof.	13	7.07	.7	
Anxious	Stud.	39	2.12	1.5	-2.23**	Sarcastic	Stud.	39	1.33	.6	-.67
	Prof.	13	3.23	1.6			Prof.	13	1.46	.5	
Happy	Stud.	39	5.07	1.1	.21						
	Prof.	13	5.00	1.0							

*p=.06 **p=.03

Hypothesis 5--That A-therapist-personality types would score significantly higher than B types on measures of nonverbal decoding ability and empathic ability was partially supported. Examination of Table 12 shows that A-types scored significantly higher on the AFSS than did B-types. As averaged 79.13 compared to 73.89 for Bs, a difference which is significant at the .05 level. This difference was also significant if A type was measured as a continuous variable($r=.29$, $p=.03$). This supports the hypothesis that A-personality types are more empathic than are B-types, as measured by the AFSS. There were no significant differences between A-types and B-types on either measure of nonverbal decoding ability.

Table 12

Comparison of test scores between A-therapist-personality types and B-types

Test	A-B Type	N	$\bar{X}$	SD	t	
PONS	A-type	22	169.77	12.13	.27	ns
	B-type	14	170.96	14.14		
Beier	A-type	22	66.69	9.74	.34	ns
	B-type	14	67.97	10.42		
AFSS	A-type	22	79.13	6.99	2.17*	
	B-type	14	73.86	7.61		

*significant at $p=.05$

The sample contained 36.7% A-types, 25.0% B-types and 23.3% classified as neither type. This indicates a slight skewing towards A types(Kurtosis= -1.50). It is not known what the distribution of A-B types is in most other studies. However, A-types are more frequent among college students and professional people(Chartier, 1971). In order to see if extreme A-types differed from extreme B types in nonverbal decoding ability, the seven subjects with the most A responses were compared with the seven with the most B responses. Again, there were no significant differences on the PONS($\bar{X}$=168.7 for As; 172.3 for Bs) or on Beier's test(X=68.1 for As; 66.5 for B's).

Discussion

Before examining the implications of the findings of this study--that two measures of nonverbal decoding ability are not significantly correlated with each other and also do not correlate with a measure of empathic ability--it is necessary to assess the likelihood that the results obtained represent a valid sample and a valid design. The mean score on the PONS for the present study was 170.6, almost exactly the same as the mean score, 170, given as the national norm(Rosenthal, 1972). The mean score on the AFSS for the present study was 77.2, not significantly different from the national norm of 79(Kagan and Schneider, 1975; 1977). No normative data was available for Beier's test. However, according to Argyle(1975), in recognition studies requiring people to choose discrete emotions, about 67% correct answers are given when there are seven choices. This is exactly the mean percentage of correct answers found on Beier's test in the present study. These comparisons between the normative scores and the scores obtained strongly suggest that the sample used in the present study was a representative one.

Order effects were not controlled for in this study since all subjects viewed Beier's test after the PONS, during the same session, and then the AFSS one week later in a separate session. While this is a minor flaw in the design, it is unlikely that order effects would matter in a correlational study, since the question posed is whether those who do well on one test are likely to do well on another, and not whether varying conditions lead to an increase or decrease in scores. Still, it

is possible that fatigue or boredom effects from the PONS differentially affected subject's scores on Beier's test.

The results of this study imply that different measures of nonverbal decoding ability(e.g. the PONS and Beier's test)may actually be measuring different, unrelated skills and that these skills are also unrelated to empathic ability as measured by an instrument using spontaneous situations(the AFSS) rather than posed expressions. The generally low correlations between the different emotion categories of Beier's test may, in part, account for the lack of a significant correlation between total Beier scores and the PONS total. Still, if the PONS measures a general skill in decoding nonverbal cues, there should be more significant correlations between PONS scores, Beier's individual emotion categories, individual PONS channels, and the AFSS than were found in this study.

The present study suggests that, at most, there may be a general skill in decoding specific kinds of emotion--e.g. negative feelings such as anger and sadness--that is tapped by both the PONS and Beier's test. Even this must be considered quite tentative until the results are cross validated by further studies since the significant correlations found between the anger and sadness categories of Beier's test with the negative-dominant category of the PONS were part of a post-hoc analysis of a large number of correlations

These results apparently differ from those of Zuckerman et al(1975), who found that a measure similar to Beier's, involving decoding six posed facial expressions of emotion correlated significantly(r=.31) with the PONS. A second study

by Zuckerman et al(1976) found a significant correlation(r=.58) between the ability to decode the spontaneous facial expressions of students watching either a pleasant or unpleasant film and the ability to decode the posed pleasant or unpleasant facial expressions of the same students. A third measure, a "talking" condition, was also used which involved the ability to decode videotapes of these same students talking about either the pleasant or unpleasant film. A significant correlation(r=.31) was found between a composite measure of decoding ability(spontaneous, talking, and posed) and decoding abilty as measured by the PONS. The authors imply that these results support the notion that there is a generalized skill in decoding nonverbal cues that manifests itself in a wide variety of both posed and spontaneous decoding tasks and that this skill can be adequately measured by the PONS. However the significant correlation found between the ability to decode spontaneous and posed pleasant or unpleasant expressions does not necessarily support the notion of a generalized skill since the task involved decoding the same people in both the spontaneous and posed condition and only one basic emotional dimension was used. Furthermore, a closer look at the data of the second Zuckerman study shows that neither the measure of decoding ability using spontaneous expressions nor the measure using posed expressions was significantly related to nonverbal decoding ability as measured by the PONS. While the composite measure, including the "talking" condition, did show a significant correlation with the PONS, the correlation given for the PONS and the spontaneous measure alone was .15 which is not significant(n=60), and that for the posed condition and the PONS was .24, also not significant for n=60. Only the measure which involved decoding the

expressions of students talking about a pleasant or unpleasant film related significantly to the PONS. This measure was much more closely related to the posed measure(r=.31) than to the spontaneous measure(r=.04).

The above analysis of the Zuckerman studies taken together with the results of the present study suggest that we do not yet have a measure of nonverbal decoding ability, including the PONS, which adequately measures nonverbal sensitivity across a wide range of posed and spontaneous situations. This means that any conclusions about the presence or absence of differences between groups--e.g. men vs. women; clinicians vs. students--must be considered tentative since the results may reflect differences in the particular measures used rather than any true differences in nonverbal sensitivity. The same considerations apply to conclusions about empathic ability, especially since the old form of the AFSS shows no correlation with the present form(Kagan, 1977). Therefore, the lack of a relationship between nonverbal decoding ability and empathy may reflect a lack of validity in the measures used rather than a true lack of relationship between the two skills. Ekman, Friesen, and Ellsworth(1972) point out that early studies, due to methodological flaws, came to the erroneous, perhaps ludicrous, conclusion that people could not recognize the facial expressions of emotions of others. There are many factors about the tests, such as the nature of the task and instructions, the nature of the stimuli, and the criterion of what constitutes a correct response, that may be more important in determining differences in scores between people, than any true differences in nonverbal decoding ability or affective sensitivity. This problem, as it affects all recognition studies, is emphasized by

several researchers(e.g. Ekman, Friesen, and Ellsworth, 1972; Knapp, 1972). The following is a summary of the differences and subsequent implications between the two measures of nonverbal sensitivity--PONS and Beier's test--and the measure of empathy--the AFSS--used in this study.

I. The nature of the task

a)Number of alternative categories--The PONS asks the examiner to choose one of two alternatives for each item, while Beier's test asks for one of seven alternatives and the AFSS, one of five. For Beier's test the seven choices are the same for each item. Argyle(1975) points out that in recognition studies requiring people to choose discrete emotions, such as Beier's test, about 67% correct answers are given when there are seven alternatives while only 13% of the items are correctly identified when 40 alternatives are given.

b)Discreteness of alternatives--Another important factor is the degree to which the alternatives differ from each other. This factor may especially affect the validity of the AFSS since some of the alternatives involve quite subtle differences. Therefore, differences in scores may reflect, in part, differences in the ability to make subtle linguistic differentiations(O'Sullivan, 1977).

c)Instructions--Beier's test asks the examinee to choose which distinct emotion is being communicated while the PONS asks which emotional situation is portrayed by the actress(e.g. nagging a child, or expressing jealous anger). The AFSS asks subjects to judge which statement expresses how the protagonist is feeling. Other measures, such as that used by Zuckerman et al(1976) previously discussed, ask the subject to identify the eliciting circumstances(e.g. whether people were watching a pleasant or unpleasant film).

d)Exposure time of the stimuli and time pressure to choose answers--This may be a crucial factor that can entirely change the nature of the task. Beier's test exposed each expression for about five seconds and allowed enough time to choose a response so that examinees did not feel pressured. The PONS, on the other hand, exposed each scene for two seconds and the time pressure to answer before the next scene was very great. The AFSS exposed scenes from 20 seconds to two minutes and, like Beier's test, allowed enough time to choose responses without undue time pressure. Informal comments of subjects showed that they experienced Beier's test as relaxed and undemanding, the AFSS as interesting and challenging, and the PONS as grueling and dull. Therefore, it is possible that the PONS measures the ability to concentrate and respond quickly to uninteresting stimuli without becoming fatigued, as much as it measures nonverbal sensitivity. Recent data on practice effects with the PONS supports the possibility that concentration and properly focused attention are major factors affecting PONS scores. Rosenthal(1978) states that for eight samples that were tested twice, the average increase in performance from the first to the second testing was very large(1.79 S.D.). Psychiatric patients, who often show attentional deficits, profit substantially less than normals from practice effects on the PONS.

II. Criterion for what constitutes a correct answer

a)Degree of intentionality--the PONS and Beir's test use the same criterion, which is the emotion or emotional situation intended by the actor in each item. For the AFSS the criterion is either what the participants in a particular scene said they were feeling during a debriefing session, or the agreed upon opinion of a panel of expert clinicians.

b)Number of correct responses--For Beier's test and the PONS there is one correct answer for each item. For the AFSS there is one preferred correct answer which scores two points and one or more nonpreferred correct responses which score one point.

III. Nature of the stimuli

a)Posed vs. spontaneous emotions--Both measures of nonverbal decoding ability, the PONS and Beier's test, use posed expressions while the AFSS uses spontaneous interactions. Spontaneous expressions of clearcut emotions, such as might be obtained by a panel of judges picking out examples from many newspaper photographs, are decoded about as well as posed emotions(Argyle, 1975). But, it has not been established that the ability to decode posed emotions relates to the ability to decode more subtle spontaneous emotions. It is possible, therefore, that a measure of nonverbal sensitivity using spontaneous, rather than posed, situations might show a significant relationship to empathy as measured by the AFSS. Only in spontaneous situations do cultural affect display rules determine whether a person expresses an emotion or interpersonal attitude naturally, or whether he will intensify, de-intensify, or disguise it(Ekman, Friesen, and Ellsworth, 1972). Although the AFSS involves naturally occuring situations, the very presence of a camera may have influenced the degree to which expressions were truly spontaneous.

b) Number of different emotions or interpersonal attitudes expressed--There are many more emotions, emotion blends, and interpersonal attitudes expressed in the AFSS than in either the PONS or Beier's test. Furthermore, nonverbal cues about personality, culture and physical and mental state are more noticeable in the AFSS since the scenes are of ongoing action. The intensity of affect also varies.

c)Number of stimulus persons--This may be an important difference between the PONS and Beier's test since the same actress portrays all of the PONS scenes while several different actors are used in Beier's test. Rosenthal(1978) states that previous studies support the hypothesis that good decoders are likely to be more accurate than poor decoders across different encoders. He also states that other studies, using instruments other than the PONS, show that the sex of the encoder made no difference in the number of studies showing female advantage in nonverbal decoding ability. It may also be important that the AFSS is the only one of the three measures that has more than one person in some scenes.

d)Number of channels of communication--The PONS has scenes where body, face, and tone of voice cues are presented alone and in various combinations while Beier's test, as used in this study, showed only facial expressions. It is possible that another measure of nonverbal decoding ability which also uses body and tone of voice cues would correlate significantly with the PONS. However, scores on Beier's test were not significantly related to scores on the facial only channel of the PONS, while the content-filtered channel did relate significantly to Beier's test. Therefore, factors other than differences in the number of channels of communication must account for the lack of a significant relationship between the two measures of nonverbal decoding ability. The AFSS, of course, included verbal channels of communication in combination with face, body, contextual and paralinguistic cues.

f)Quality of the stimuli--All three measures used in this study are films of high quality. The potential importance of film quality can be seen in the lack of a relationship between the old and new form of the AFSS. One major difference between the two forms was the poor quality film of the old form.

The cumulative effect of all of these differences in the stimuli comprising the three measures may be that the skill required of the examinee is actually quite different in each case. For example, Rosenthal(1978) recognizes that the PONS measures whether a decoder can recognize emotions that the encoder is making no effort to disguise. He points out that the PONS, "is more a measure of the decoder's ability to recognize the manifest level of emotion than it is a measure of the decoders ability to draw complex interpretations about the true state of the encoder(Rosenthal, 1978, p.196)." The AFSS, on the other hand, does ask for an interpretation of the "true" feeling being experienced by the protagonist in an interpersonal setting.

In addition to the above considerations it is also possible that the lack of a relationship between either measure of nonverbal decoding ability and the AFSS reflects a lack of construct validity in the concept of nonverbal sensitivity. Unlike the concept of intelligence, for example, the concept of nonverbal decoding ability may really be composed of several independent skills, with a very small g factor. For example, there may be an ability to discern a particular emotion or feeling state across varying situations, rather than a general ability in recognizing all emotions. The finding that the Sadness and Anger categories of Beier's test correlated significantly with the Negative-Dominant category of the PONS supports this notion. Rosenthal(1978) feels that the PONS has demonstrated adequate construct validity. He points to studies showing an average correlation of .22 between the PONS and judges ratings of interpersonal sensitivity and .20 for spouses ratings of nonverbal sensitivity and PONS scores. There is no correlation with self-reported nonverbal sensitivity.

Another possibility, for which there is some evidence, is that the degree of acquaintance between encoders and decoders may be crucial. Nonverbal decoding ability may be a significant component of empathic ability only where there is a high degree of acquaintance between encoder and decoder. Rosenthal(1974a) states that relatives and friends of the actress used in the PONS did better on the more subtle auditory channels while strangers did better on the facial channel. Buck(1977) presents some evidence which suggests that clinicians may differ from others in nonverbal decoding ability with their own clients but not with the clients of other clinicians.

If future studies with the PONS and with the AFSS give much stronger evidence of the construct validity of these two measures, then the lack of a significant correlation between them may indicate that the ability to understand and describe the complex feelings of others engaged in an interpersonal situation may not depend on a sensitivity to nonverbal cues to any significant extent. It could be that subtle linguistic cues, such as the particular wording or grammatical forms used in a particular context, are the only crucial cues. It would be interesting to know, for example, if people would score significantly lower on the AFSS if they had to choose answers on the basis of written descriptions of the setting and the verbatim transcipt of each scene without viewing the scene. The work of Archer and Akert(1977) suggests that nonverbal cues make a large difference in accurately assessing the context or result of an interpersonal setting, but their test .. does not require the examinee to decide what the person is feeling or thinking. Finally, it may be that whether or not nonverbal decoding ability is a significant component of empathic ability depends on the perceptual style of the individual. For example, Shapiro(1968) showed

that people are quite consistent in whether they tend to rely on either linguistic or facial cues when asked to select the feeling being communicated from a list of incongruent faces and written messages. Perhaps the hypothesized relationship holds only for those people who rely on nonverbal cues to resolve verbal-nonverbal incongruities.

The finding that there were no over-all sex differences on any of the three measures is not altogether inconsistent with other reports in the literature. Although the great majority of samples reported by Rosenthal(1974b) show women superior to men on the PONS, 11 of 98 samples showed no differences. Davitz(1964) concluded that early studies show either no sex differences or a slight superiority of women in nonverbal decoding abiity. He felt that these apparent differences might, in part, be a function of the sex of the person whose expressions are being decoded. This may be especially relevant to the PONS since all expressions are portrayed by the same woman. However, Rosenthal(1978) concluded that previous studies show that sex of the encoder is not important in male-female differences in decoding ability. In any event, differences in measuring instrument may account for the differences between those previous studies which found women superior to men(Zaidel and Mehrabian, 1969; Zuckerman et al, 1975;1976; Penprase, 1974; Kehoe, 1974; Glazner, 1974; Sweeney and Cottle, 1976; Harper, Wiens, and Fugita, 1977) and those studies which found no sex differences(Beldoch, 1964; Buchman, 1972; Zlatchin, 1974; Lee, 1976). The finding that there were no sex differences among mental health professionals is consistent with statements by Rosethal et al(1974b) in regards to the PONS, and Schneider, Kagan and Weiner(1977) with regards to the AFSS. They all found that the slight superiority of women found in most samples disappears for groups whose professions require nonverbal sensitivity and empathic ability.

Interpreting the findings comparing mental health professionals with students is complex. The results do not support the idea that general training in mental health work and psychotherapy increases one's nonverbal sensitivity. Rosenthal's latest findings(1978) suggest that rated excellence in clinical skill is related to high PONS scores, though clinicians as a group are not superior to students. This does not mean that training cannot increase nonverbal sensitivity. It does suggest that the training must be very specific. For example, Knapp(1972) points out that Ekman found that with six hours of training in recognizing facial expressions, subjects were able to reach much higher levels of accuracy. Also, the present study suggests that mental health professionals may be superior to students in recognizing anxiety but not other emotions. This needs to be validated by further study since the significant relationship found between the ability to recognize anxiety and the presence of mental health training was noted in a post hoc analysis of a large number of comparisons.

The findings also suggest that for men, mental health training is related to superior empathic ability as measured by the AFSS. This could indicate either that men who choose mental health careers are already superior than other men in empathic ability or that general training in psychotherapy and counseling skills improves empathic ability for men but not for women. The significant difference in the negative relationship between the PONS and the AFSS for mental health professionals and the slight positive relationship between the two tests for

students is difficult to interpret. It may reflect group differences in personality or approach. The PONS requires rapid answers and quick decisions with little chance for reflection, while the AFSS allows more time for reflection. Therefore, a more reflective, less intuitive approach might decrease PONS scores while raising AFSS scores. If this is so we may speculate that the group of mental health professionals varied more in the degree to which subjects were either reflective(perhaps somewhat obsessive) or intuitive in their approach. Harper, Wiens, and Fugita(1977) found that obsessiveness interfered with a person's ability to do well on their nonverbal decoding task.

That personality variables are related to empathic ability is supported by the significant relationship found between the AFSS and the A-B therapist-personality scale. The greater empathic ability of A types is consistent with descriptions of A-personality types given in the literature(Silverman, 1967). Thus people who are flexible rather than precise and mechanistic(Whitehorn and Betz, 1960), socially cautious rather than risk taking(Berzins, Freedman, and Seidman, 1971), verbally and intellectually oriented rather than mechanical and practical oriented(Campbell, Stevens, Uhlenhuth, and Johansson, 1968), and desirous of social approval(Berzins et al, 1971), may be more empathic than other people. These results indicate that it may be fruitful for future studies to look at the relationship between other personality variables and measures of nonverbal decoding ability and empathic ability. Personality traits that might be expected to yield positive relationships, on the basis of previous research include flexibility, responsiveness(Mehrabian and Epstein, 1972), field independence(Wolitsky, 1973), intelligence(Beldoch, 1964), need for social approval(Rosenfeld, 1966) and lack of obsessiveness(Harper, 1977).

Summary

This study explored the relationship between two measures of the ability to decode nonverbal cues, the Profile of Nonverbal Sensitivity(PONS) and Beier's measure, and a measure of empathic ability, the Affective Sensitivity Scale(AFSS). In addition, the study explored whether three other variables--sex, training, and the A-B therapist-personality type--affected scores on the three measures. A total of 60 subjects, including 21 male students, 21 female students, 7 male mental health professionals, and 7 female mental health professionals, participated. Results showed no significant relationship between the two measures of nonverbal decoding ability as well as no significant relationship between either measure and the AFSS. There was a significant relationship between two of the emotions on Beier's test--sadness and anger--and one of the four emotion categories of the PONS--negative-dominant. This relationship must be interpreted cautiously because it was noted as part of a post-hoc analysis of a large number of correlations. A similar post-hoc analysis showed that there were several significant correlations between PONS channels and scores on Beier's test. However, no logical pattern could be discerned in the correlations and it was suggested that unknown factors, other than nonverbal decoding ability, account for the few correlations found between PONS channels and scores on Beier's test. There were no significant correlations between any of the 11 PONS channels or any of the seven emotions on Beier's test and total scores on the AFSS.

It was suggested that because none of the measures have shown sufficient construct validity, all conclusions about the presence or absence of differences between groups in nonverbal decoding ability or empathic

ability be considered tentative. Differences between the three measures in the nature of the task, the criterion for correct responses and the nature of the stimuli may account, in part, for the lack of significant correlations. The most important differences considered were the grueling and pressured nature of the task for the PONS compared to the other tests, the subtle discriminations in alternative responses on the AFSS, the spontaneous and varied scenes of the AFSS compared to the posed scenes of the PONS and Beier's test, and the use of only one stimulus person in the PONS.

No over-all sex differences or differences between undergraduate students and mental health professionals were found except that male professionals did significantly better than male students on the AFSS. Professionals were superior to students in detecting anxiety on Beier's test. Professionals and students differed in the direction of the relationship between the PONS and the AFSS. Professionals showed a marginally significant negative relationship between PONS scores and AFSS scores while students showed a nonsignificant, small positive relationship. It was suggested that group differences in personality or approach might account for this finding. Finally, there was a significant difference between A-therapist-personality types and B-types in empathic ability as measured by the AFSS, with A-types significantly superior. It was suggested that other personality variables should be explored in future research in nonverbal decoding ability and empathic ability.

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Appendix A--The A-B Therapist-Personality Scale

I. Indicate for each occupation listed below whether you would like that kind of work or not. Don't worry about whether you would be good at the job or about your possible lackof training in it. Forget about how much money you can make in it. Think only about whether you would like the work that has to be done in the job.

Mark "L" if you like that kind of work.
Mark "I" if you are indifferent(that is, don't care either way).
Mark "D" if you don't like that kind of work.

1. Building Contractor	L	I[a]	D[a]
2. Carpenter	L	I[a]	D[a]
3. Marine Engineer	L	I	D[a]
4. Mechanical Engineer	L	I	D[a]
5. Photoengraver	L	I	D[a]
6. Ship Officer	L	I[a]	D[a]
7. Specialty Salesman	L	I	D[a]
8. Toolmaker	L	I	D[a]

II. Show as you did in Part I your interest in these school subjects, even though you may not have studied them.

1. Manual Training	L	I[a]	D[a]
2. Mechanical Drawing	L	I[a]	D[a]

III. Show in the same way whether or not you would like the following activities. Work rapidly. Record your first feeling of liking, indifference, or disliking.

1. Drilling in a company	L[a]	I[a]	D
2. Making a radio set	L	I	D[a]
3. Adjusting a carberator	L	I[a]	D[a]
4. Cabinet making	L	I[a]	D[a]
5. Entertaining others	L	I[a]	D[a]
6. Looking in shop windows	L	I[a]	D[a]
7. Interesting the public in a new machine through public address	L[a]	I[a]	D
8. Being president of a society or club.	L[a]	I	D
9. Having many women friends	L[a]	I	D

III. Show here if the item below describes the way you are now.

1. Accept just criticism without getting sore	Yes[a]	?(not sure)	No
2. Have mechanical ingenuity	Yes	?	No[a]
3. Can correct others without giving offense	Yes[a]	?	No
4. Follow up subordinates effectively	Yes[a]	?[a]	No

Appendix B- Background of A-B therapist scale

In the early 1950's Whitehorn and Betz(1954) studied the characteristics of the seven psychiatrists at their clinic who had the highest improvement rates with schizophrenics(called A types) and the seven who had the lowest(called B types). Treatment at that time was by individual psychotherapy without drugs or shock treatment. Briskin(1974) summarizes the differences in therapeutic style between A and B type therapists found in these early studies. A types tended to:

"1. See the patient as a person with a problem rather than a psychopathological case.
2. Focus on the patient's positive assets instead of his symptoms.
3. Sometimes challenge the patient's self-deprecatory attitudes.
4. Avoid being so permissive that he got caught in the patient's attempts to control and manipulate.
5. Behave in a personal way and express his own attitudes at times.
6. Develop a trusting relationship with the patient..

B therapists tended to:

1. Show more passive and permissive behavior
2. Point out the patient's mistakes and interpret his behavior as though he were a teacher.

In sum, the A's had an active personal treatment style while the B's had a distant instructional style"(Briskin, 1974, p. 13-14).

Later, Whitehorn and Betz(1960) administered the Strong Vocational Interest Blank to A and B type therapists to see if they could be differentiated by personality factors and interest patterns. They found 23 items that significantly differentiated A's from B's. A's showed interest patterns similar to those of professions which require flexibility(Lawyers and CPA's) while B's showed the interest patterns of professions that require precision and a mechanistic approach(Printers and Mathematics-Physical Science Teachers). Using different versions of this 23-item scale it was found that B therapists were more field independent than A's(Pollack and Kiev, 1963) and might do better with lower-middle-class neurotic outpatients(McNair, Callahan, and Lorr, 1962). It was suggested that A's are more empathetic and intuitive while B's are more rational and analytic in approach(Silverman, 1967).

Subsequently, researchers looked for personality correlates of people in general, not just therapists, who could be classified as A or B types by using the 23-item scale from the Strong Vocational Interest Blank. These studies have shown A-ness and B-ness in a person to be elusive and hard-to-define qualities which have produced some contradictory descriptions in the literature(e.g. Chartier, 1971). However, in general A's relative to B's are more socially cautious, risk taking, and socially affiliative(Berzing, Barnes, Cohen, and Ross, 1971). As take out their frustrations on themselves(intropunitive) while Bs take out their frustrations on others(extrpunitive)(Berzins, Freedman, and Seidman, 1969). As are more verbally and intellectually oriented while Bs are moee mechanical and practical oriented(Campbell, Stevens, Uhlenhuth, and Johansson, 1968). One study found that As tended to be more empathetic as measured by their ability to correctly guess the life events of individuals presented in a programmed case task. However, the results of that study did not attain significance (Francher, McMillan, and Buchman, 1973).

Appendix C- Intercorrelations of the 11 PONS Channels

N=56

	Ch. 1	2	3	4	5	6	7	8	9	10	11
1	1.0	.54	.28	.26	.23	.38	.33	.28	.33	.20	.34
2	.54	1.0	.39	.18	.06	.15	.22	.32	.12	.35	.20
3	.28	.39	1.0	.24	.32	.20	.36	.38	.28	.42	.42
4	.26	.18	.24	1.0	.34	.08	.15	.06	.01	.29	.41
5	.23	.06	.32	.34	1.0	.29	.27	.14	.29	.08	.41
6	.38	.15	.20	.08	.29	1.0	.17	.12	.33	.22	.33
7	.33	.22	.36	.15	.27	.17	1.0	.21	.20	.37	.40
8	.28	.32	.38	.06	.14	.12	.21	1.0	.35	.41	.34
9	.35	.12	.28	.01	.29	.33	.20	.35	1.0	-.05	.14
10	.20	.35	.42	..29	.08	.22	.37	.41	-.05	1.0	..43
11	.34	.20	.42	.41	.41	.33	.40	.34	.14	.43	1.0

Correlations above .26 are significant for N=56 at p=.05

Appendix D- Intercorrelations of the seven Beier emotions

N=52

	Indif.	Sad	Anxious	Happy	Flirt.	Angry	Sarcastic
Indif.	1.0	-.14	.06	-.02	.007	.07	.01
Sad	-.14	1.0	.29	-.02	.27	.17	.06
Anxious	.06	.29	1.0	.01	.24	.30	.21
Happy	-.02	-.02	.01	1.0	.05	.14	.06
Flirt.	.007	.27	.24	.05	1.0	.16	.23
Angry	.07	.17	.30	.14	.16	1.0	.18
Sarc.	.01	.06	.21	.06	.23	.18	1.0

Correlations greater than .27 are significant at p=.05 for N=52