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Decoding differences on the verbal and nonverbal channels among "A" and "B" therapist types

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DECODING DIFFERENCES ON THE VERBAL AND NONVERBAL CHANNELS AMONG "A" AND "B" THERAPIST TYPES

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ABSTRACT

The original designation of therapists into "A" and "B" types was made by Whitehorn and Betz (1954) on the basis of success with schizophrenic and neurotic patients. Subsequent studies have yielded mixed results concerning this therapist-patient interaction. The purpose of this study was to investigate whether the apparent differences in interpersonal styles between "A" and "B" therapist types could be linked to decoding preferences on the visual, audio and linguistic channels of communication. Specifically, it was predicted that the "A" therapist type would decode more accurately on the visual channel, while the "B" therapist type would decode more accurately on the linguistic channel. Decoding accuracy on the audio channel was predicted to fall in the mid-range of scores between the visual and linguistic channels for both therapist types. The effect of sex as a variable in decoding ability was also considered. A videotape of a female actress portraying a submissive style in an interview was targeted as the independent variable. A silent videotape was used to convey the visual communication channel; an audio tape was used to convey the audio communication channel, and a transcript was used for the linguistic channel. Sixty-four subjects (32 male and 32 female) were selected according to their scores on subform SSZ-46 of the Whitehorn-Betz A-B scale. The subjects viewed either the silent videotape, listened to the audio tape, or read the transcript of the submissive interviewee and then rated their feelings about that person on a set of Semantic Differential Scales and the Impact Message Inventory. Two scales from the IMI, Submissiveness and Inhibition, were used to record the impact.

The hypotheses were tested by a 2 x 2 x 3 analysis of variance, followed by a Newman-Keuls multimean test. The IMI scores showed a significant interaction between the "A" therapist type and the visual channel. A trend toward a significant interaction for the "B" therapist type and the linguistic channel was also observed. No significant differences were found on the audio channel or for the sex variable. No differences were found with the Semantic Differential Scales for any of the experimental conditions. The results indicate that differences do exist between "A" and "B" therapist types for decoding preferences, with the "A" therapist type receiving a significantly higher impact on the visual channel than the "B" therapist type as measured by the IMI scales of Submissiveness and Inhibition. Implications for future research were discussed, focusing on the role of nonverbal communication in therapeutic interactions and the effect of individual subject variables such as sex and experience on decoding abilities.

Communication is a reciprocal process that is constantly occurring. One cannot not communicate. All behavior is communication, whether it is a full range of activity or steady silence (Kiesler, 1977). The process of communication influences social interactions, interpersonal relationships -- all behavior that happens when more than one individual is present.

Psychotherapy has always dealt with communication. Recently, the emphasis has been on the therapist's style and abilities to communicate both with and to the client about what is happening in the therapeutic process -- the ability to metacommunicate. In contrast to basic communication skills that stress direct statements made between individuals with openness and honesty, metacommunication is the ability to make statements about how the process of communication is occurring. As the emphasis in psychotherapy has changed from identifying the psychodynamics that Freud first presented (Ford & Urban, 1963) to viewing maladjustments as occurring because of interference in communication between individuals (Fagan & Shepherd, 1976), research has also begun to focus on what makes a good therapist. One way to examine this is to look at therapist traits, personality and interpersonal styles of relating with others as well as the interactions between therapist style and client problems.

Interpersonal relationships depend on the ability to communicate accurately to others the message an individual wants to send. Communication occurs simultaneously on several levels within various modalities. Communication occurs through the verbal or speech channel as well as the nonverbal channel.

The nonverbal channel includes the vocal aspect of paralanguage -- all the sounds that are not essential to the actual formation of words. Para-

language includes tone of voice, inflections, pitch, timbre, volume and resonance, among others. Nonverbal communication also includes kinesics, which are the body movements, facial expressions, and head and body cues that add to the meaning of speech. Other aspects of nonverbal communication such as proxemics, touch and body display are also important to accurate sending of messages but will not be specifically looked at in this paper.

There are some primary differences between verbal and nonverbal communication. Linguistics is the study of human language; psycholinguistics is the study of the links between cognition, learning and personality differences and the process of encoding and decoding information on the speech channel (Markel, 1969). Speech is basically a symbolic system by which values, intentions, drives and information are transmitted among individuals. Speech is a left hemisphere function and carries the denotative and cognitive meaning of communication.

Nonverbal communication is a continuous process where there are no discrete boundaries between the beginning and end of a particular item of communication (Kiesler, 1977). It includes a wide range of stimuli that are often perceived ambiguously. The nonverbal channels of communication are directly related to the transmission of affect and relationship meanings; the nonverbal channels carry connotative messages of the encoder concerning attitudes about the self and the self-concept.

Kinesics play a large role in how accurately the total message is perceived. Ekman and Friesen (1965, 1967) have shown the importance of integrating head and body cues for accuracy. In their 1965 study, Ekman and Friesen found that the head and body cues provide differential affective information. The head was found to be responsible for sending the information

that is decoded about the specific emotion that is being sent; the body cues were found to be responsible for sending information concerning the intensity of the specific emotion. In the reformation in 1967, Ekman and Friesen found that for the highest accuracy in decoding, both the head and body cues must be integrated. Because the head and facial cues are sent at a higher rate of expression it is thought that this is the reason for specific emotions to be decoded from these cues. The body cues are responsible for the intensity or what Ekman and Friesen (1969) call "leakage" due to the fact that most individuals are less aware of what movements they make with their bodies than with their faces. Most people have better control over the facial expressions of emotions. Leakage refers to small movements or changes in posture that are usually outside of conscious awareness, and these cues signal when an emotion is more intense than do the words being spoken or the facial expression.

There appears to be a wide range in the ability to encode or display affective states and in the ability to decode or interpret nonverbal displays from others (Lanzetta & Kleck, 1970). Kiesler (1977) states:

> Important organismic, individuals differences factors need to be built into theory and research on dyadic communication ...in particular in regard to dyadic communication between therapist and client. (p. 65)

This study is designed to look at the differences in interpersonal styles of therapists and to determine if their ability to decode communication is a factor in any differences that occur. Preferred modalities of communication will be examined in relation to personality styles. Encoding and decoding differences, individual styles of decoding ability, and the measure of interpersonal interaction will be examined in the following sections of this paper.

Encoding and Decoding Differences

Beier (1966) discusses the process of communication from the viewpoint of the encoder (sender). The encoder transmits a message simultaneously on the verbal and nonverbal channel and this message commands a response from the decoder (receiver). Beier calls this the "evoking message". The evoking message exerts a pull on the receiver and this determines what the response will be. It is mainly the nonverbal aspects of the message, those factors that are related to affect and relationship content, that exert the greatest influence on the receiver. Most of the time this reciprocal process happens at a level where both the encoder and the decoder are unaware of the message that is being sent or received. This unawareness is what often causes interferebce and miscommunication in interpersonal relationships.

Kiesler (1977) designed a psychotherapy model to bring this unawareness to the surface so that both the client and the therapist can metacommunicate and learn more effective methods for communicating with others. Kiesler (1977) adds the decoding aspect to the process of communication.

> The encoder emotionally impacts or engages the decoder with the result that the decoder registers particular affect-toned responses which are termed "impact messages". The impact message defines the momentary relationship command unintentionally sent by the encoder's evoking message. (p. 65)

The accurate decoding of the impact message by the receiver determines the reciprocal emotional tone of the evocative message returned to the encoder (Chirico, 1977). Thus communication becomes a reciprocal process that depends on each participant's ability to encode and decode accurately the information sent on all channels of communication.

It appears that the ability to encode and decode communication accurately varies among individuals and depends on a number of factors. Females have consistently been shown to be more accurate encoders than males and most of the literature shows the same relationship in decoding communication. Buck, Miller and Caul (1974) have shown that females sending to females are more accurate encoders of facial expression than males sending to males. Zuckerman, Lipets, Koivumaki and Rosenthal (1975) have also found support that females are slightly better encoders and decoders than males with intentional displays of facial and vocal expressions. They also found a significant relationahip between the ability to encode and decode visual and auditory cues, with females demonstrating more accuracy across the channels of communication.

Age seems to have a major influence on the ability to both encode and decode communication. Zuckerman and Przewiezman (1978) found that while decoding ability increased with age for both males and females, only encoding ability increased with age for females and actually decreased with age in males. La France and Mayo (1979) suggest that in children between the ages of two and one-half and five, this could be due both to a change in perceptual abilities and the effects of socialization. All children would increase in decoding ability because they would be more able to integrate the information that is sent on the various channels as their perceptual abilities increased. The effect of the encoding and the differences between males and females could be attributed to the socialization of males not to show emotions, whereas females are allowed to express their emotions.

Domangue (1978) examined the effects of cognitive style on the ability to decode incongruent messages between females sending to females. She

found that those females who had a low tolerance for ambiguity and had a less complex style of perception were also less accurate in decoding the incongruent message. The low complexity/low tolerance subjects seemed to rely only on cues from the verbal channel and thus did not integrate all the cues that were sent. This would account for their decoding less accurately than those subjects who tolerated ambiguous stimuli.

It has been shown that both encoding and decoding ability play an important part in an individual's ability to accurately communicate. This ability has been shown to differ across such factors as age, sex and cognitive style and to relate to differences involving the verbal and nonverbal channels. The next section will examine the effects of multi-channel communication.

Multi-channel Communication

DiMatteo and Hall (1979) have shown that there is a hierarchy of ease in decoding communication across channels. They presented their subjects with both congruent and incongruent messages on the nonverbal channels of facial expression and of body movements and on the verbal or paralanguage channel of voice tone with a filtered speech tape. The following order was supported in determining a hierarchy of ease in decoding: facial expression,body movements and then voice tone. By presenting incongruent messages on different channels they were able to determine which channel the subjects received their major impact from. The results showed that the subjects were most accurate on the channel they preferred. DiMatteo and Hall state: "accuracy of judging nonverbal stimuli is a function of the differential impact on the attention paid by the subject."

There appears to be a greater emphasis placed on the nonverbal channel

in decoding information. Birdwhistle (as cited in Knapp, 1972) states that at least 65% of the meaning of a message is carried on the combination of the paralanguage and visual modalities of the nonverbal channel. Mehrabian and Wiener (1967) have shown that when an incongruent message is sent on both the verbal and visual channels simultaneously, the decoder will place greater credibility on the visual channel. This focus on the nonverbal channel appears to develop about age five or six; before this age the child tends to place most attention on the spoken words of the sender, possibly because they are not able to integrate the diversity of stimuli present with the multi-channels of communication (Bugental, Kaswan, Love and Fox, 1970).

As Ekman and Friesen (1969) and DiMatteo (1979) demonstrate, the nonverbal channel can also be broken down into subsections with the head relaying more accurate nonverbal cues and the most accurate communication occurring when there is an integration of all the channels of communication. DePaulo, Rosenthal, Eisenstat, Rogers and Finkelstein (1978) have also shown that the visual channel has greater impact in judging affective nonverbal cues. This ties in with Kiesler's (1977) description of the nonverbal channel as being the communication channel which carries the affect and relationship messages. Mehrabian and Ferris (1967) have also found support for the inference of attitudes being based on the nonverbal channel.

Waxer (1978) supports the importance in psychotherapy of the nonverbal aspects of communication.and finds a reciprocity between client and therapist between preference for channel of communication. Waxer states that the messages transmitted on the nonverbal channels impact clients stronger than on the verbal channel and that the nonverbal aspects of therapy are becoming

a necessary area of focus in the therapeutic process.

The integration of all aspects of communication, both verbal and non-verbal, have been shown to be necessary for the reciprocal process of communication to occur with the most accuracy whenever messages are transmitted between individuals. Accuracy has been shown to be a function of age, sex, cognitive style and the ability to integrate cues from all modalities of communication. The role of decoding, especially in a therapeutic relationship, was looked at as a major influence. Interpersonal differences in the way individuals decode communication can affect relationships between individuals in general, and between client and therapist in particular. The next section will examine some of the research that has found significant differences in decoding ability based on personality or interpersonal styles.

Individual Differences in Decoding Style

Knapp (1978) gives a personality profile of skilled decoders: they appear to be better adjusted, more democratic and less dogmatic, and usually extraverted. Interpersonal or personality styles have been shown to play a major role in decoding ability in several studies. The differences between Byrne's (1964) repressors and sensitizers, Chirico's (1977) obsessives and hysterics, and Buck's (1974,1975) internalizers and externalizers will be examined. Then the differences between "A" and "B" therapist types will be discussed in detail, as they will be the main interpersonal style used in the present experiment.

Byrne (1964) investigated the difference between how two personalities perceived threatening stimuli in the environment. Repressors are individuals who seem to be able to ignore threatening stimuli and repress in beyond

conscious awareness while sensitizers are individuals who seem to be aware of stimuli and then allow it into their conscious awareness. He found that repressors have difficulty perceiving threatening stimuli; they just seem to block the stimuli from their awareness. Sensitizers quickly perceive threatening stimuli and are able to respond to them. This seems to involve both the processes of perception and cognition and how they interrelate in the ability to decode communication.

Chirico (1977) found that obsessives and hysterics differ in the ability to decode communication across various channels. The hysteric personality is described as histrionic, emotional and highly impressionable and is likely to respond to the emotive aspects of language and to quick, subjective impressions of a highly vivid nature. In a study investigating decoding of communication across communication channels, Chirico found that hysterics received their main impact from the visual channel and postulated that this was due to the more ambiguous and subjective nature of this channel.

Obsessives are described as rigid, overcontrolling, dominant and lacking in spontaneity. They emphasize the specific and have a tendency tp be detailed and to focus on certain objective aspects of a structure. It was found that the obsessive personality received main impact on the verbal channel which is more structured and less ambiguous.

Buck et al. (1974, 1975) determined that the differences in ability to decode facial expressions could be related to personality and physiological variables. This study found that some individuals have small physiological reactions to sending or receiving imformation, and these individuals were externalizers. The externalizers were found to be extraverted, talkative

animated and to have high self-esteem. In children this was related to high activity level, bossiness and impulsivity. Externalizers also appear to be nonconformists. The externalizers were found to be more accurate in decoding facial expressions than the internalizers because they are more expressive themselves and thus more comfortable with emotions.

Internalizers were designated as those individuals who have large physiological reactions when sending or receiving communication. Buck et al. (1975) described them as inhibited and impersonal. In children this was related to time spent alone and cooperation. Internalizers were less accurate in decoding facial expressions than externalizers due to their own inhibition of expressions.

The original designation of therapists into "A" and "B" types occurred when Whitehorn and Betz (1954) were at the Phipps Clinic and discovered that some therapists seemed to be more successful with schizophrenic patients than others. Whitehorn and Betz devised a scale from the Strong Vocational Interest Blank (SVIB) that could distinguish "A" and "B" types according to their scores. The "A" therapists scored high on the Lawyer and CPA profiles and "B" therapists scored high on Carpenter and Mathematics Teacher prifiles. They postulated that interpersonal style as measured on this subscale was related to the successful treatment of schizophrenic patients.

McNair, Callahan and Lorr(1962) found that the "B" therapist was more successful with neurotic patients showing the opposite interaction than the Whitehorn-Betz study (1954). This interaction between "A" therapists and schizophrenics and "B" therapists and neurotics has received considerable attention in the literature since 1954 but has yielded mixed results.

Chartier (1971, 1974) reviewed many of the experiments that dealt with the A-B therapist variable and suggested that research needs to turn its focus not to whether there is an interpersonal difference between the "A" and "B" therapist-types but to what is the cause at a primary level. One of the areas that Chartier suggests further research into is nonverbal communication as a factor in the A-B variable. Kennedy and Chartier (1976) define the "A-B variable as an index of attitudes and behaviors which is reflected in the actions of therapists in the conduct of therapy"(145).

Dublin, Elton and Berzins (1969) conducted one of the few studies that used both male and female subjects in experiments on the A-B variable. They found that significance occurs more often in the expected direction toward the A or B extreme with males than with females. They suggest that the interaction of the sex variable needs greater emphasis in the research and may account for some of the mixed results. Woods (1979) also suggests further research which focuses on the interplay of the sex variable and the A-B scale. Stephens, Shaffer and Zlotowitz (1975) who reviewed the various scales and concluded that the A-B scale is not suited to females, report that the SVIB is weighted in the male direction so that any scale derived from it would not be valid for females.

Goodwin, Geller and Quinlan (1979) mention experience as a factor in the A-B variable. Their study used practicing therapists and supported the A-B interaction originally found with schizophrenic and neurotic patients only for inexperienced therapists. Although not statistically significant, the opposite results were found for experienced therapists. This reversal of the A-B status could be explained by looking at the decoding ability

of both experienced and inexperienced therapists to determine if it changes with experience.

Whitehorn and Betz (1960) provide descriptions of the therapeutic styles of the "A" -"B" therapists. Silverman (1967) examined their perceptual styles and Berzins, Barnes, Cohen and Ross (1971) correlated personality traits with the A-B dimension.

In the Whitehorn and Betz (1960) study, the "A" therapist was described as having a problem solving approach that is actively personal. They were described as having a therapeutic style of trustful communication and as being more accepting of introspection. The "A" therapist was described as intuitive, spontaneous and valuing self determination and personal growth over symptom reduction.

Whitehorn and Betz (1960) described the "B" therapist as having a style of passive permissiveness. These therapists tended to be more instructional and interpretive and more interested in symptom reduction than in personal growth. They were described as being rigid, precise and too value conforming. Resnick and Beck (1975) compared the "B" therapist type to the authoritarian personality and found a relationship in that both are conventional, rigid, insecure, concrete and intolerant of ambiguity.

Silverman (1967) reviewed the research on field dependence and field independence in the "A-B" therapist types. The "A" therapist type was determined to be more field dependent than the "B" therapist type on the Witkin Rod-and-Frame test. In an effort to determine what is being measured by the A-B scale, Shows and Carson (1965) looked at the cognitive styles of the A-B therapist types. The A-B therapist types were shown to perceive various aspects of their physical and social worlds differently. The "A" type is more receptive to ambiguous cues, both behavioral and structural,

and are capable of relaxing the orientation to reality and relying on intuition in decision making. Silverman (1967) attributes "A's" success with schizophrenics to a similarity in their perceptual responses. Both the "A" therapist type and the schizophrenic patient have a sensitivity to low intensity sensory stimulation. In addition, they share the inclusion of a wide range of ambiguous stimuli into awareness and a readiness to perceive unique relationships between various stimuli.

The "B" therapist type was determined to be more field independent than "A" therapist types. Silverman (1967) described the "B" therapist type as having a set of internal guidelines that s/he adheres to for self and others in a rigid fashion. "B's" are less attentive to low intensity, subliminal input and social cues. They tend to describe bodily sensations and emotions in concrete terms and are less responsive to intuition than the "A" therapist type.

Shows and Carson (1965) support this distinction in perceptual abilities although they found more variability among "A's" in field dependence than with "B's" using the Witkin Rod-and-Frame test. They describe the "B" therapist type as field independent, psychologically differentiated and homogenous in their perceptions, while the "A" therapist type is seen as paying attention to connotative inferences and to inter-individual variability.

Razin (1971) reviewed several studies of perceptual responses of the A-B dimension and suggested that the basis of communication between the "A" therapist and the schizophrenic patient shows that verbal and nonverbal behavior is crucial to therapist effectiveness.

Berzins et al. (1971) and a later study done by Berzins, Dove and Ross (1972) examined the correlation between the A-B variable and personality

using the Personality Research Form (1967). This study also used a diverse sample of both male and female undergraduates and experienced therapists to determine if experience had an effect of the A-B variable. The personality constructs that were attributed to the "A" or "B" types were consistent across populations regardless of experience or not. The "A" therapist type was described in more ambiguous terms than the "B" therapist type and suggests that this may be because the A dimension contained more females due to the weighting of male items of the A-B scale. In several studies (Razin, 1971; Dublin et al.,1969) "A" therapist types are described as having more traditionally feminine traits which could account for the A dimension having a greater number of females.

The "A" dimension covers personality traits which simultaneously show attention seeking and inhibition. The "A" therapist type's activity level is high in both the therapeutic situation and in personal situations. The B dimension includes traditionally masculine traits, psychological differentiation and field independence.

In summarizing the differences between the "A" and "B" therapist types a strong relationship between the A-B variable and the individual differences in the studies cited by Byrne (1964), Chirico (1977) and Buck (1964) can be observed.. Like Byrne's (1964) repressors, the "B" therapist type seems to close out some stimuli from awareness, whereas the "A" therapist type, like the sensitizers, is more open to novel stimulation. There seem to be similarities between Chirico's (1977) findings and the descriptions of the A-B variable. The hysteric was described as responding rapidly to vivid images in a subjective manner, and the "A" therapist type was found to be intuitive and to respond to a wide range of ambiguous cues. The "B" therapist type

is concerned with structure, precision and rigidity as is the obsessive personality.

The high activity level and spontaneous behavior found by Buck et al. (1974, 1975) in the externalizers is similiar to the description of the "A" therapist type by Razin (1971). The impersonal and inhibited nature of the internalizers corresponds well to the description of Berzins et al. (1971) of the "B" therapist type.

Therefore, it seems likely that there is a reliable personality and interpersonal style measured by the A-B scale and that the need to look for the primary cause of these differences is apparent. Following the suggestions of Chartier (1971, 1974), the verbal and nonverbal channels of communication will be focused on in an attempt to determine the parameters of the A-B dimension.

Measures of Interpersonal Interaction

Most of the measures of interpersonal interaction have been derived from Leary's (1957) work delineating interaction into two dimensions: dominance--submission and love--hostility. Lorr and McNair (1965) state that all interpersonal interactions can be traced to these dimensions which they expand to include 15 dimensions: dominance, competition, hostility, mistrust, detachment, inhibition, submission, succorance, abasiveness, deference, aggreeableness, nurturance, affiliation, sociability and exhibition. Mehrabian and Kszionsky (1972) examined nonverbal behavior and correlated it along the same dimensions of status, power and affiliation.

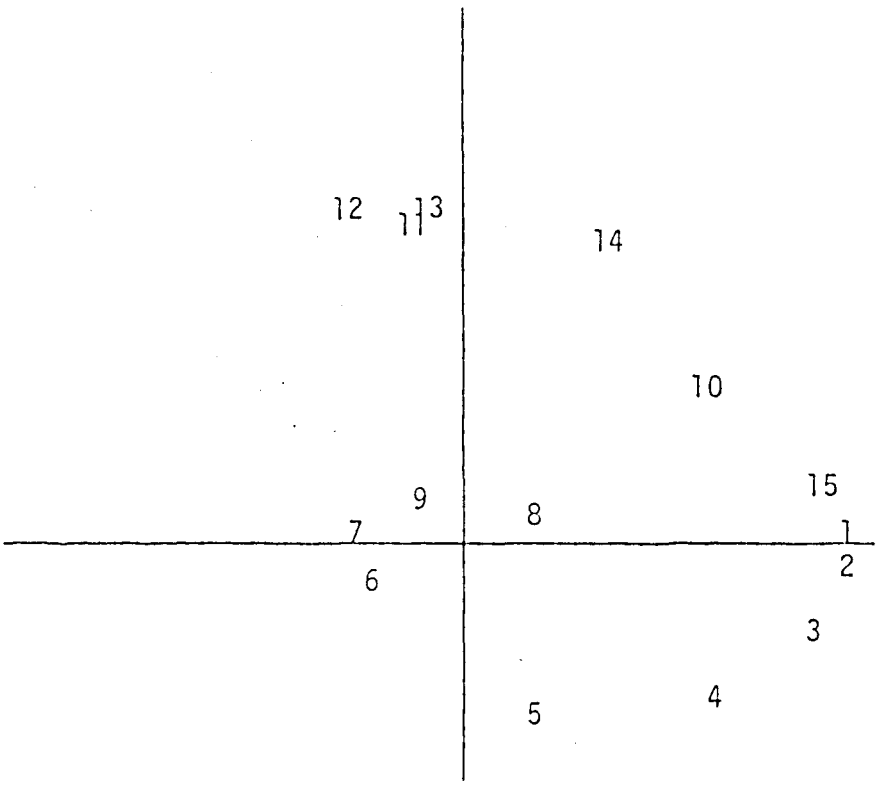
The Impact Message Inventory (Perkins, Kiesler, Anchin, Chirico, Kyle and Federman, 1979) was developed to assess the momentary dyadic, emotional engagements in interpersonal communication using both verbal and nonverbal

information. It is based on Lorr's Interpersonal Behavior Inventory (See methods section) which contains the 15 dimensions listed above. The IMI (Perkins et al., 1979) is a circumplex that was orthogonally rotated which resulted in a factor structure resembling the factorial dimensions of Leary (1957): dominance--submission and love--hate (See Figure 1).

The IMI was designed to measure the "impact" that the decoder receives from the encoder of a message along several dimensions: the cognitive, the emotional, and the behavioral impacts. By keeping the encoder's style constant, a measurement of how the decoder is impacted can be obtained by quantifying the impacts that result from communication on the various channels. This measure then shows what channel has the most impact on the decoder, by comparing the means of the intensity of the impacts across the channels.

The submissive style was chosen for the present experiment because it was reasoned that it would have a neutral impact on both the "A" and "B" therapist types. None of the descriptions of the A-B dimension mention dominance or submission as being highly correlated with the A-B style; therefore the submissive style of the encoder would allow the impact to register between the characteristics of the respective styles. The submissive style was also used as the encoded message in a study on hysteric and obsessive types by Chirico (1977).

The use of the submissive style led to the choice of the adjectives for the second dependent measure used in the present study--the Semantic Differential Scale (Osgood, Suci and Tannebaum, 1957). Williams and Sundene (1965) found that certain words are more likely to be associated with encoding on the linguistic channel rather than on the visual channel, while some adjectives can be associated with both channels. Snider and Osgood (1969) factor analyzed the dimensions of verbal communication and arrived at the semantic differential factors of evaluation, activity (responsiveness) and dominance



1 = Dom
2 = Com
3 = Hos
4 = Mis
5 = Det
6 = Inh
7 = Sub
8 = Suc
9 = Aba
10 = Def
11 = Agr
12 = Nur
13 = Aff
14 = Soc
15 = Exh

Figure 1. Circular ordering of IMI.

(power). Bandler and Grinder (1976) also found that certain words are more associated with various channels of communication; they categorize individuals who process information through visual, auditory and kinesthetic cues into processors, each of which is associated with sets of words. Visual processors "see" the problem or want to "paint a picture"; auditory processors "hear" what is meant; and kinesthetic processors "feel" the mood of others.

Combining the findings of Osgood et al. (1969), Williams and Sundene (1965) and Bandler and Grinder (1976), adjectives were chosen for the present experiment.

Summary

In the introduction the importance of both verbal and nonverbal communication was demonstrated. Both in therapeutic situations and interpersonal interactions, accuracy is increased when the verbal and nonverbal cues are integrated. For accurate decoding of nonverbal cues, both the head and body cues need to be included so that both the specific emotion and its intensity can be determined. The primacy of the visual channel was shown to occur as a developmental process after the age of five or six.

Communication was stressed as a reciprocal process that involves encoding and decoding of both denotative and connotative messages. This transmission often occurs at a level of unawareness, and thus may play a major role in miscommunication. To insure accuracy in communication, particularly in therapy, an emphasis is needed to focus attention to verbal and

nonverbal components of the communication process between individuals.

Individual differences do occur both in encoding and in decoding with a relationship existing between the two abilities, at least for females. Differences were shown to be related to age, sex, cognitive style and personality traits.

Major individual differences between interpersonal styles of the "A" and "B" therapist types were discussed; the differences focused on perceptual style, personality traits and therapeutic outcomes. The individual differences between the "A" and "B" types and other personality styles were interrelated to lend some assurance that the A-B scale does measure differences at a primary level. Nonverbal cues, decoding ability, sex and experience were all shown to affect the A-B dimension.

Finally, measures of interpersonal interaction were discussed and the dependent measures for the present experiment were presented. The rationale for the choice of the SDS adjectives and using the IMI was discussed.

In the next section, the rationale for the present experiment will draw on the material presented here concerning communication, decoding ability and individual differences.

RATIONALE AND HYPOTHESES OF PRESENT STUDY

Communication can be categorized into one of three channels: visual, audio and linguistic. In recent years, more emphasis has been put on the effect of the nonverbal channels of communication in interactions. It has been shown, for example, that when a receiver is faced with an incongruent message sent out through speech and nonverbal behavior, the receiver will make a decision based on the body movements, facial expressions and changes in the voice rather than the actual speech content.

There have been few studies on how individuals decode communication and what affects their ability to do so. However, the literature previously reviewed showed possible differences in decoding due to age, sex and experience.

For over 25 years, the literature on "A" and "B" therapist types has shown differences in their therapeutic style and outcomes, but research has not addressed the consideration of what is responsible for these differences. The interactions between "A" and "B" therapists and schizophrenic and neurotic patients does suggest that there are differences in how these interpersonal styles decode communication. A cognitive style is suggested by Dublin, Elton and Berzins (1975) and a difference in perception is shown by Silverman (1967).

The cognitive style of the "A" therapist type appears to contain a greater tolerance for novel stimuli, uncertainty and ambiguity than the style of the "B" therapist type. "A's" have greater ability to decode cognitively complex stimuli, suggesting that this interpersonal style would be more likely to be receptive to the ambiguity and diverse effects found on the nonverbal

channels than on the speech channel. "B's", on the other hand, are characterized as needing precision and order in the stimuli around them. They are seen as being rigid and not as open to spontaneous effects as are "A" therapist types. Therefore, they would be most likely to be receptive to the verbal channel.

Silverman's (1967) view of the differences in field dependence between "A's" and "B's" shows the "A" therapist type to have a more passive, global and diffuse dependence on the stimulus attributes of the field, while "B's" function more analytically, verbally and are less attentive to subtle social cues. "B's" tend tp describe emotions and bodily sensations with objective terms, trying to cut down on the ambiguity. "B's" have also been shown to be less receptive to low intensity input and to approach problems more intellectually than "A" therapist types do. "A's", on the other hand, tend to rely on a broad range of relevent and irrelevant stimuli and are able to perceive unique relationships in a perceptual field using intuition as a basis for decision making. "A's" and "B's" are also shown to differ on the masculinity-femininity dimension, with"A's"showing more typically feminine attributes and patterns and "B's" displaying more typically masculine patterns.

The structure of the linguistic channel would appear to be the channel on which the "B" therapist type would receive the greatest impact as it is verbal, less ambiguous, more precise and orderly than other channels. The visual channel would seem to be the channel where the "A" therapist type would decode the most information due to the tendency to pay attention to a greater number of perceptual cues, a tolerance for ambiguity and a greater awareness of subliminal cues.

Specifically the following hypotheses are made:

1. The "A" therapist type will decode information most accurately from the visual channel. Their scores on the IMI scales of Submissiveness and Inhibition and on the Semantic Differential Scales will be significantly higher when compared with their scores resulting from the linguistic channel.

2. The"B" therapist type will decode information most accurately from the linguistic channel. Their scores on the IMI scales of Submissiveness and Inhibition and on the Semantic Differential Scales will be significantly higher than when compared to their ratings resulting from the visual channel.

3. The "A" therapist type will score significantly higher than the "B" therapist type on the audio channel, although the scores of both the "A" and "B" therapist types on the IMI scales of Submissiveness and Inhibition and on the Semantic Differential Scales will be in the midrange between their expected scores on the visual and linguistic channels.

4. Females will decode information more accurately than males across the three channels of communication.

a. The "A" females will decode information more accurately than the "B" females across the three channels of communication. Their scores on the IMI and the Semantic Differential Scales will be significantly higher than the scores of the "B" females.

METHODOLOGY

Subjects. Subjects for this study were 64 undergraduate students from psychology classes at the University of Richmond. Thirty-two males and thirty-two females were chosen for the study. Subjects were divided into "A" and "B" therapist types based on their scores on a paper and pencil test. Subjects were administered subform SSZ-46 of the Whitehorn-Betz scale (Stephens, Shaffer and Zlotowitz, 1975) as a mass screening in the undergraduate psychology classes. Only those students who scored in the first or fourth quartiles were retained for the study. Subjects were divided into two groups of 32 each based on their scores. Five to seven males and five to seven females were randomly assigned to each condition.

Selection Measures. The original Whitehorn-Betz scale (1960) was developed to identify differences in interpersonal styles of communication between therapists and patients at the Phipps Clinic at John Hopkins Hospital. It has since been used in a number of experiments with undergraduate students as "therapists". The subform used in this experiment was derived by Stephens et al. (1975) as the optimum A-B scale with a reliability coefficient of .71 for use with male subjects.

Because the subform was derived from the Strong-Campbell Interest Inventory (1971) there is a weighting on the male dominated items, making the scale-criterion correlation for females essentially zero. Females were used in this study to determine whether this factor would affect the A-B dimension or if the fact that females are better decoders than males to begin with would outweigh the males bias in the scale. "A's" were found to score higher on the Lawyer and CPA profiles, while "B's" scored higher on the Carpenter and Mathematics-Physical Science Teacher profiles in all the validation studies.

Apparatus. All conditions took place in the audiovisual room of the university library. The room contained eight chairs, a table and the T.V. monitor. A videotape of a woman portraying "submissiveness" was shown on the T.V. monitor for the visual-only condition. For the audio-only condition, the submissive style was listened to on an audio tape player. For the linguistic-only condition, a transcript of the submissive style was read by the subject.

Experimental Tapes. The tape that was used in this experiment was from the collection of Chirico (1977). It has been standardized and shows the submissive style that was chosen as the independent variable for decoding by "A-B" therapist types in this study.

The tape consists of an interaction between two females. Females were chosen as the literature both on encoding and decoding (Buck, Miller and Caul, 1974) shows that females are more accurate senders and receivers than males.

The taped interaction consisted of a simulated interview with the interviewee portraying a submissive role and the interviewer a dominant role. The actresses were given instructions based on items in the Interpersonal Behavioral Inventory (Lorr, 1967) as to how to portray submissive and dominant roles but were allowed to expand their roles creatively. The finished tape shows the submissive female sitting, facing the camera, in the center of the screen so that all facial expressions and bodily movements were visible for the six minute duration of the tape. The dominant actress has been cut out of the tape for the final viewing. Validity of the videotape was measured through ratings by seven graduate students in clinical psychology as to how well the submissive items in the Interpersonal Behavior Inventory (Lorr, 1967) described the actress's portrayal of the submissive style. On a seven point Likert scale, the submissive style rated an overall score of 6.8 by the graduate students (Chirico, 1977).

Procedure. Normative data was acquired by administering the A-B scale in mass testing to a population of 200. A normal distribution was obtained and the cutoff points for the extreme ends of the scale were determined to be 49 and 65, for the "A" and "B" scores respectively. (See Appendix B).

Initial contact was made by telephone with those students who scored in the first or fourth quartile of the A-B scale. An appointment was made for them to participate in one of the conditions of the experiment. They were told it would take about a half hour of their time.

The next subject contact occurred when the subjects arrived for their participation in the study. Subjects were read the following description by the experimenter:

> This experiment is designed to see how people decode information. You will spend a short period of time either looking at a videotape, listening to an audiotape or reading a transcript. You will then be asked to fill out some questionnaires concerning the communication you have been presented. There is no risk or deception involved.

The subjects were then given an informed consent form (See Appendix A) concerning the above.

The subjects were shown the communication in groups of five. Males and females were randomly selected according to a random table of numbers for each group. Each group consisted of either five "A's" or five "B's".

There were three conditions. In the visual-only condition, the subjects were presented with the videotape of the woman portraying submissiveness without sound. In the audio-only condition, the subjects heard the submissive portrayal of the interviewee, but did not receive visual communication. In the linguistic-only condition, the subjects were presented with a transcript containing the words of the woman portraying submissiveness, but without sound or visual presentation.

In Condition 1, the visual-only condition, subjects were presented with the videotape without sound to measure the amount of decoding on the nonverbal channel. The following instructions were read to the subjects by the experimenter:

> You will see a short videotape without any sound. It will be of an interview between two women. You will only see the woman being interviewed. Please relax and watch the T.V. monitor. If you have any questions, please ask the experimenter.

In Condition 2, the audio-only condition, the subjects were presented with a tape on the audiotape player. Only the voice of the interviewee was heard. The audio condition is a mixture of linguistics and the paralanguage of voice quality, intonations, pitch, rhythm and articulation. The following instructions were read to the subjects by the experimenter:

> You will hear a short tape recording. It will be of an interview between two women. You will only hear the voice of the woman being interviewed. Please relax and listen to the tape. If you have any questions, please ask the experimenter.

In Condition 3, the linguistic-only condition, the subjects were presented a written transcript of the taped interview. Only the words of the interviewee were presented. The following instructions were read to the subjects by the experimenter:

> You will be given a short transcript. It will be of an interview between two women. You will be presented only the responses of the woman being interviewed. Please relax and read the transcript to yourself. If you have any questions, please ask the experimenter.

In Condition 3, subjects were given six minutes, which was the same amount of time required for the taped interviews to be played.

After conclusion of each condition, the subjects were given the

Impact Message Inventory (Kiesler, Anchin, Perkins, Chirico and Kyle, 1975) and the Osgood, Suci and Tannebaum Semantic Differential Scales (1957) (See Appendices C and D) and asked to rate their reactions to the experimental task. These measures were the dependent variables. The instructions were read to each group by the experimenter. The instructions for the visual-only condition were:

> Please fill out the following questionnaires based on your impressions and feelings concerning the woman you saw being interviewed in the tape. If you have any questions, please ask the experimenter.

The instructions for the audio-only condition were:

> Please fill out the following questionnaires based on your impressions and feelings concerning the woman you heard being interviewed on the tape. If you have any questions, please ask the experimenter.

The instructions for the linguistic-only were:

> Please fill out the following questionnaires based on your impressions and feelings concerning the woman you read being interviewed in the transcript. If you have any questions, please ask the experimenter.

Dependent Variable Measures. The two instruments used to assess the subjects' reactions were the Impact Message Inventory (Kiesler et al., 1975) and the Osgood, Suci and Tannebaum Semantic Differential Scales (1957). These instruments measured the impact of the submissive portrayal on the subject along the various channels of communication.

Impact Message Inventory. The IMI was designed to measure the "impact message" (Kiesler, 1973) that occurs whenever communication occurs between two or more people in an interaction. It measures the manner in which reciprocal communication happens from the viewpoint of the decoder. Since communication occurs on the verbal, nonverbal and paralanguage simultaneously, the IMI measures the "impact" or feelings the receiver gets on all channels during an interactionwith another person.

There are 90 possible choices in three sections representing the feelings, the cognitions and the behavioral impact the receiver gets from the person in the interaction. Each item is rated on a scale from one to four how descriptive the item is of the receiver's feelings; a score of four indicates very much descriptive of the receiver's feelings.

The two personality styles selected as the dependent variable were Submissiveness and Inhibition. Submissiveness was chosen because the actress portrayed a submissive style in the videotape, and inhibition was added because it is very similiar on the circumplex arrived at by a factor analysis of the IMI. The entire IMI was administered, but the score for the dependent variable was the total score of the ratings on submissiveness and inhibition.

Semantic Differential Scale. These scales have been shown to be reliable when scoring the dimensions of evaluation, potency of activity on verbal (Snider and Osgood, 1969) and nonverbal (Mehrabian and Ksionzky, 1972) communication in a interaction on the dimensions of evaluation, potency, and activity. The rater is presented with a series of bipolar adjective scales and asked to rate his/her reaction to a person. The adjectives chosen for this study were: for evaluation: lenient-severe, relaxed-tense, free-constrained; for potency: submissive-dominant, weak-strong; for activity: active-passive, sharp-dull.

Because the subjects were college students a nine point scale was used to separate each pair of adjectives. Osgood et al. (1957) point out that more information will be gained with a nine point scale when using more intelligent subjects. The unfavorable end (i.e. weak) of each pair was assigned a score of nine, and the favorable end (strong) was assigned a score of one. The SDS score was separately analyzed for each dimension and the score was the total rating on all dimensions.

Design and Analysis. The hypotheses were tested in a 2x2x3 factorial design (See Figure 2), using a 2x2x3 analysis of variance. A Newman Keuls ad hoc test was performed on the means of the dependent variables. The effects on the dependent variable of two interpersonal styles (A and B therapist types) and sex and three modes of communication (visual, audio and linguistic) were considered in the design.

Main effects were expected to be nonsignificant across therapist type and communication conditions. A significant main effect across sex was expected with females scoring higher than males. A significant interaction was expected to be found between therapist type and communication channel. "A's" were expected to have a higher rating on the visual channel (Hypothesis 1) while "B's" were expected to have a higher rating on the linguistic channel (Hypothesis 2). (See Figure 3). The scores on the audio channel were expected to fall in the midrange between the visual and linguistic channels for both therapist types with the "A" therapist type scoring higher than the "B" therapist type on the audio channel (Hypothesis 3).

Because the A-B scale is weighted in the male direction, the "A" female was expected to score significantly higher across channels of communication than the "B" female (Hypothesis 4a). Females were expected to score higher than males on all communication conditions (Hypothesis 4).

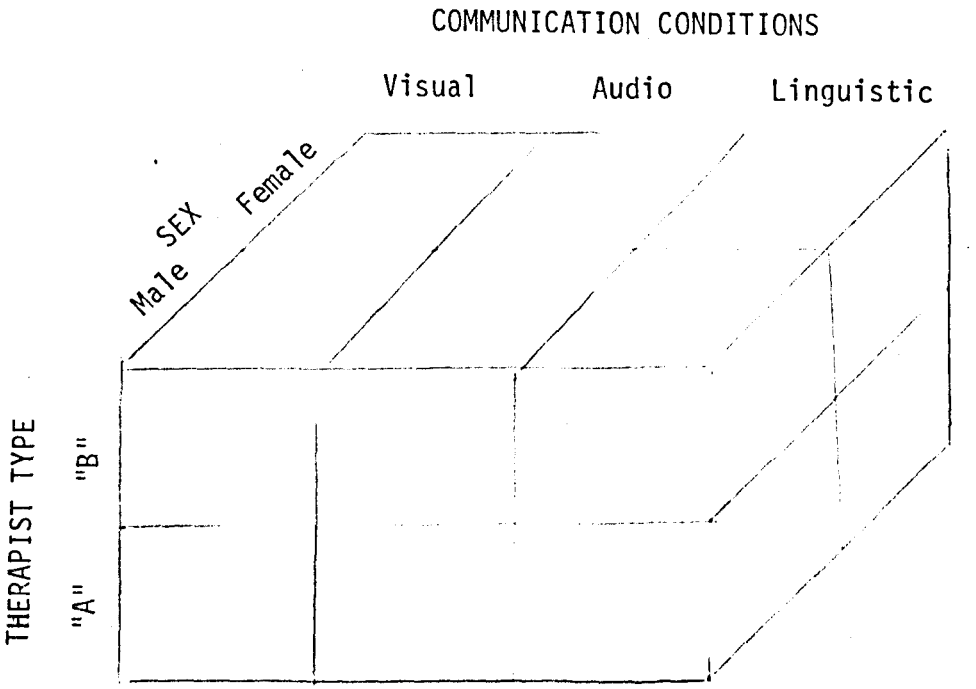


Figure 2. Design for analysis of communication conditions by therapist type by sex.

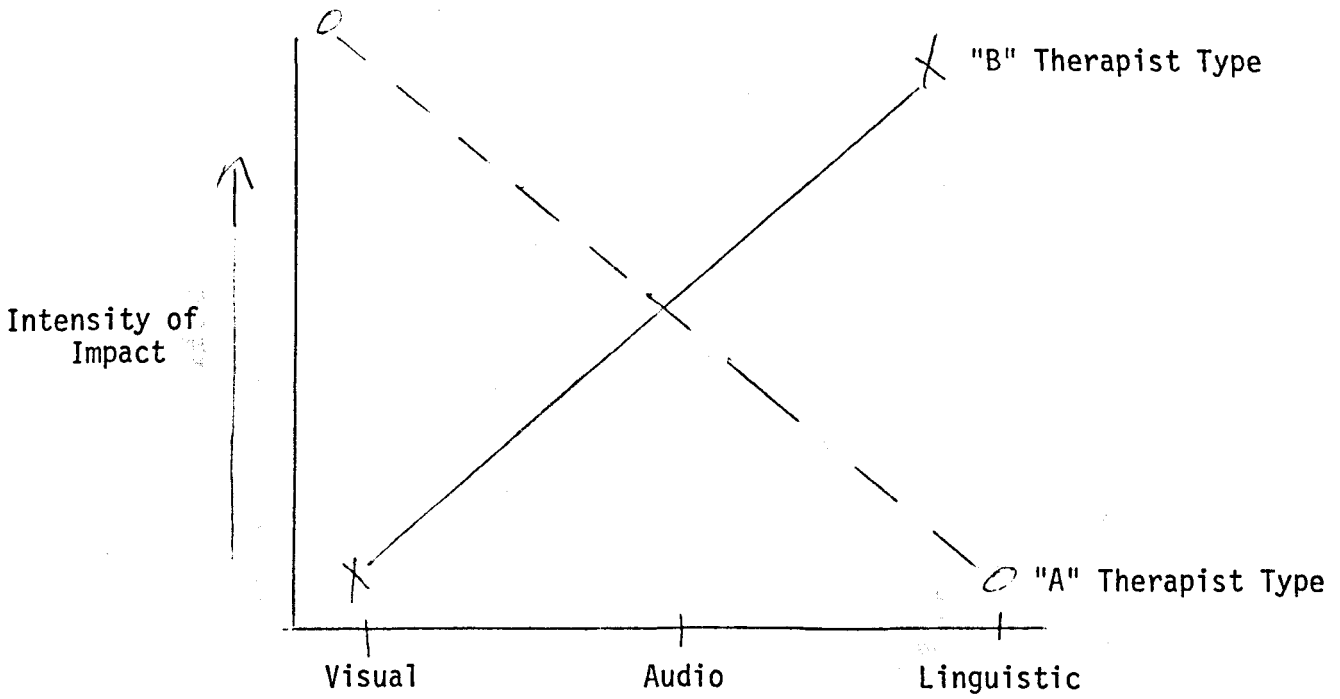


Figure 3. Predicted Interaction.

RESULTS

The dependent measures for this study were the combined scores from the Impact Message Inventory scales of Submissiveness and Inhibition and the total score from the seven Semantic Differential scales. For the IMI, scores can range from 6 to 24 for each scale, with a score of 6 meaning "not at all descriptive" and a score of 24 meaning "very much descriptive" of the statement presented. Total scores on the SDS can range from 7 to 63. The higher the score, the greater the evidence of submissiveness decoded. Individual subject scores are presented in Tables 1, 2 and 3.

Hypothesis 1 stated that subjects in the "A" therapist type group would decode information most accurately on the visual channel. That is, it was expected that their scores on the IMI and SDS would be significantly higher on the visual channel than on the linguistic channel. An analysis of variance based on the Inhibition and Submissiveness scale totals yielded a significant main effect for communication channel, with the visual channel producing a higher impact than either the audio or linguistic channels for the "A" therapist type ($\bar{X}$ = 41.00 vs. $\bar{X}$ = 26.10 vs. $\bar{X}$ = 32.63, $F = 12.07$, $p < .001$). The interaction of therapist type and communication channel was also found to be significant ($F = 4.39$, $p < .05$; See Appendix F for summary table). A Newman-Keuls multimean comparison test (See Table 4) demonstrated that the significant interaction was between the "A" therapist type and the visual channel, providing support for Hypothesis 1 in that subjects in the "A" therapist type group decoded information most accurately on the visual channel. The therapist type by communication channel for the IMI scores is illustrated in Figure 4 .

The analysis of variance based on the total score from the seven Semantic Differential scales yielded a significant main effect for communication channel, with the visual channel producing a higher impact than either the audio or lin-

Table 1

Subject Scores for Visual Condition

	IMI Scales		SDS
	Submissiveness	Inhibition	Total Scores
"A"	19	22	55
	20	22	57
	22	18	53
	19	21	58
	16	20	63
	21	21	53
	18	22	57
	17	23	57
	19	21	52
	23	22	61
"B"	20	17	55
	15	19	49
	18	22	49
	19	18	50
	13	16	51
	17	19	54
	16	15	52
	11	10	45
	18	19	56
	19	19	63
	21	20	57

Table 2

Subject Scores for Audio Condition

	IMI Scales		SDS
	Submissiveness	Inhibition	Total Scores
	19	20	41
	20	14	47
	13	12	38
	12	10	46
"A"	10	7	41
	10	10	50
	18	16	45
	12	11	35
	14	18	47
	8	7	34
	8	10	44
	14	16	51
	18	11	40
	19	19	50
"B"	22	23	61
	13	12	43
	17	15	43
	19	16	47
	16	13	41
	13	16	46

Table 3

Subject Scores for Linguistic Condition

	IMI Scales		SDS
	Submissiveness	Inhibition	Total Scores
	19	17	40
	16	17	51
	20	19	56
	10	8	24
"A"	16	15	45
	11	12	43
	16	18	50
	17	16	45
	16	18	39
	20	19	53
	18	20	51
	18	16	50
	15	20	45
	16	15	43
	19	17	58
	18	15	56
"B"	18	18	56
	18	15	46
	19	21	54
	11	14	44
	16	11	37
	11	15	50

Table 4

Newman-Keuls Test for A Posteriori Comparisons of Communication Conditions For "A" Therapist Type on IMI Scores

	Transcript	Visual
Audio	6.57	14.90*
Transcript		8.33

* $p < .05$

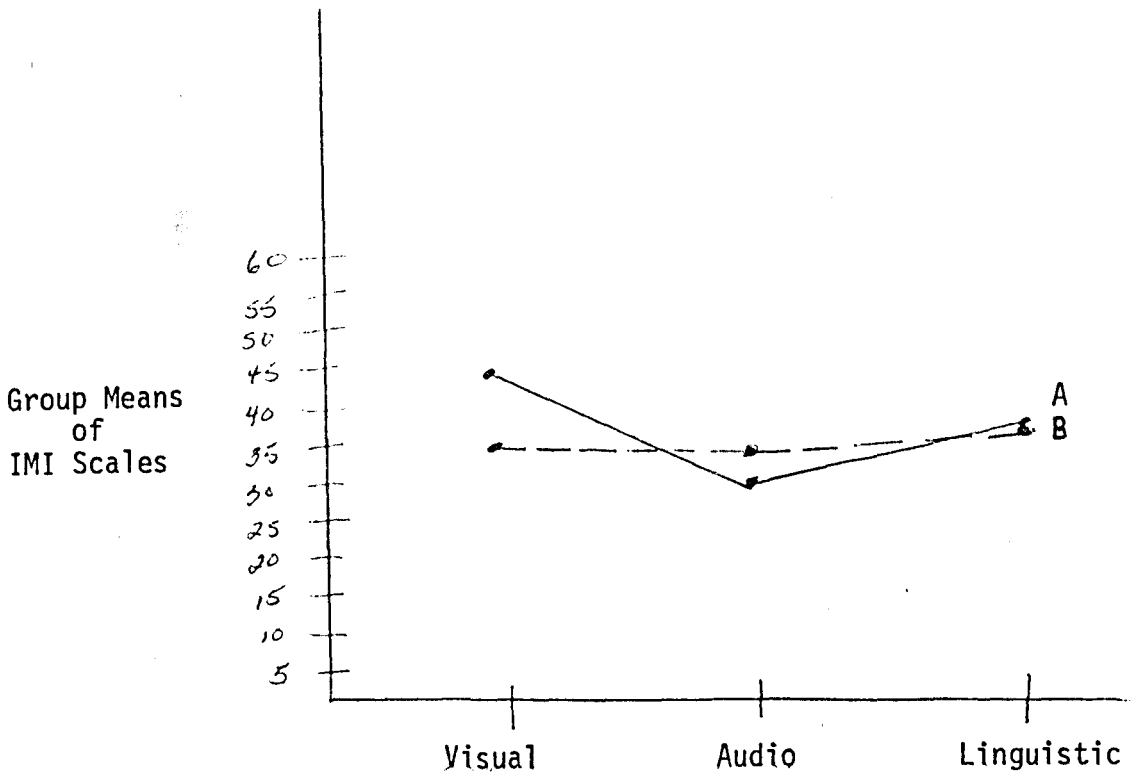


Figure 4, Decoding impact scores on the IMI Scales of Submissiveness and Inhibition.

guistic channels for the "A" therapist type ($\bar{X}$ = 56.91 vs. $\bar{X}$ = 42.40 vs. $\bar{X}$ = 45.58; $F = 16.06$, $p < .001$). There was also a trend toward a significant interaction for therapist type by communication channel ($F = 2.99$, $p < .059$; See Appendix G for the summary table). The results of the Newman-Keuls multi-mean comparison test (See Table 5) demonstrated that the interaction would be for the "A" therapist type and the visual channel. While this interaction based on the SDS scores is only a trend statistically, it lends support to the interaction found with the IMI scores. The therapist type by communication channel interaction for the SDS scores is illustrated in Figure 5.

Hypothesis 2 stated that subjects in the "B" therapist type group would decode information most accurately on the linguistic channel. That is, it was expected that their scores on the IMI and SDS would be significantly higher on the linguistic channel than on the visual channel. An analysis of variance based on the Inhibition and Submissiveness scale totals yielded a significant interaction as stated before for the "A" therapist type. The results of the Newman-Keuls multimean comparison test for the "B" therapist type group (See Table 6) demonstrated that there was no significant difference for the "B" therapist type and communication channels, thus Hypothesis 2 was not confirmed. In fact, the "B" therapist type group had a higher score on the visual channel than on the linguistic channel for the IMI scores, though not to a level of conventional significance ($\bar{X}$ = 34.64 vs. $\bar{X}$ = 32.20; See Figure 6).

The analysis of variance based on the total score for the seven Semantic

Table 5

Newman-Keuls Test for A Posteriori Comparisons of Communication Conditions For "A" Therapist Type on SDS Scores

	Transcript	Visual
Audio	3.18	14.51*
Transcript		11.33*

*$p < .05$

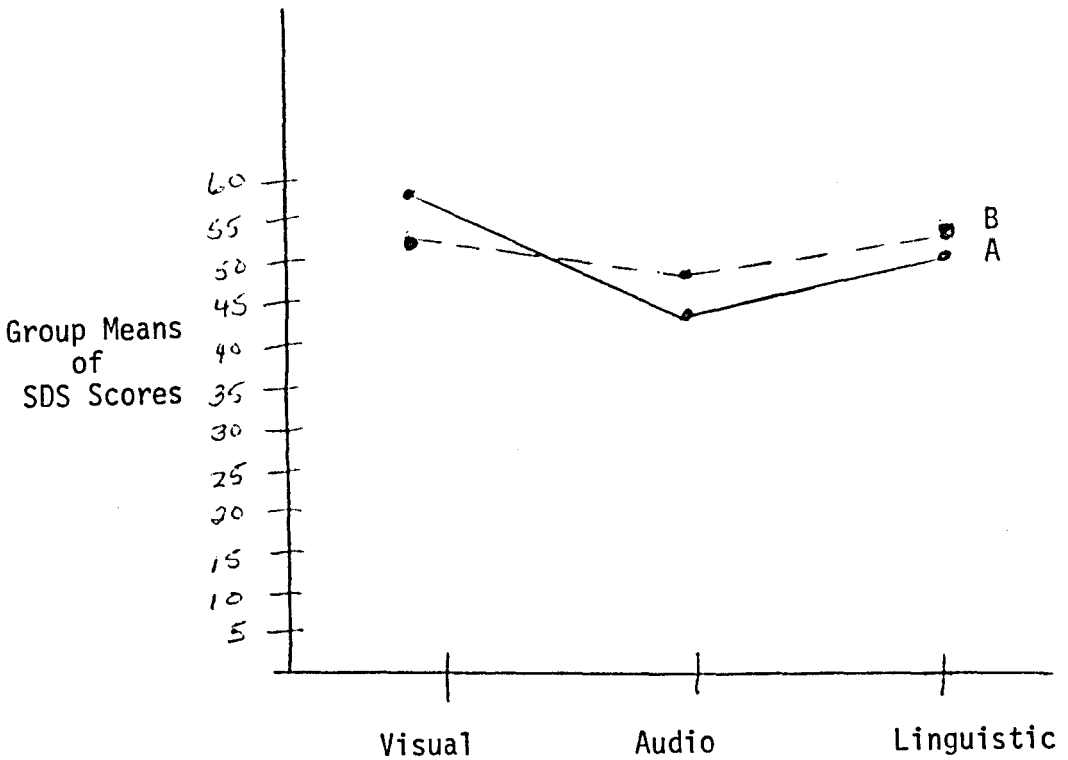


Figure 5. Decoding impact scores on the total SDS scores.

Table 6

Newman-Keuls Test for A Posteriori Comparisons of Communication Conditions For "B" Therapist Type on IMI Scores

	Audio	Transcript
Visual	2.44	3.64
Audio		1.20

*$p < .05$

	Visual	Audio	Transcript
"A"	M= 41.00 s= 2.53	M= 26.10 s= 8.14	M= 32.67 s= 6.31
"B"	M= 34.64 s= 5.75	M= 31.00 s= 7.31	M= 32.20 s= 4.92

Figure 6. Means and standard deviations of the combined IMI scores of Submissiveness and Inhibition.

Differential scales did detect a trend toward a significant interaction between therapist type and communication channel, but the Newman-Keuls multimean test demonstrated no significant difference for the "B" therapist type and communication channels (See Table 7).

Hypothesis 3 stated that subjects in the "A" therapist type group would score significantly higher than the subjects in the "B" therapist type group on the audio channel. That is, it was expected that the scores from the IMI and SDS scales for the "A" therapist type would be significantly higher than the scores for the "B" therapist type on the audio channel. Hypothesis 3 also stated that the scores of both therapist type groups on the IMI and SDS would fall in the midrange between their expected scores on the visual and linguistic channels. As stated earlier, the analysis of variance based on the IMI scales of Inhibition and Submissiveness did yield a significant interaction for therapist type and communication channel; however a Newman-Keuls multimean test for the IMI scores did not detect a significant difference for either the "A" therapist type or the "B" therapist type on the audio channel. See Tables 4 and 6. The data from the IMI scores did not provide support for Hypothesis 3.

As stated earlier, the analysis of variance based on the SDS scales showed a trend toward a significant interaction for therapist types and communication channels; however the Newman-Keuls multimean comparison test for the SDS scores did not detect a significant difference between the therapist types on the audio channel, thus support was not provided for Hypothesis 3 from the SDS scores (See Tables 5 and 7).

Table 7

Newman-Keuls Test for A Posteriori Comparisons of Communication Conditions For "B" Therapist Type on SDS Scores

	Transcript	Visual
Audio	2.30	6.22
Transcript		3.92

*$p < .05$

	Visual	Audio	Transcript
"A"	M= 56.91 s= 3.51	M= 42.40 s= 5.46	M= 45.58 s= 8.58
"B"	M= 52.82 s= 4.90	M= 46.60 s= 6.20	M= 48.90 s= 6.95

Figure 7. Means and standard deviations of total Semantic Differential Scores.

Contrary to what was expected, the IMI scores and the SDS scores for both therapist type groups on the audio channel were the lowest of the scores on all three communication channels. The means for the IMI scores for the "A" therapist type group are as follows: $\bar{X}$ = 26.10 (audio) vs. 41.00 (visual) vs. 32.67 (linguistic); the means for the "B" therapist type group were: $\bar{X}$ = 31.00 (audio) vs. 34.64 (visual) vs. 32.20 (linguistic). For the SDS scores, the means for the "A" therapist type group were the following: $\bar{X}$ = 42.40 (audio) vs. 56.91 (visual) vs. 45.58 (linguistic); and the means for the "B" therapist type group were: $\bar{X}$ = 46.60 (audio) vs. 52.82 (visual) vs. 48.90 (linguistic). See Figures 6 and 7.

Hypothesis 4 stated that females would decode information more accurately than males across all three communication channels. That is, it was expected that the female scores on the IMI and SDS would be significantly higher than the male scores on all three channels of communication. Hypothesis 4 also stated that female subjects in the "A" therapist type group would decode information more accurately than the female subjects in the "B" therapist type group; that is, the scores of the females in the "A" therapist type group on the IMI and SDS would be significantly higher than the scores of the females in the "B" therapist type group. The analysis of variance based on the Inhibition and Submissiveness scale totals did not detect a significant difference for the sex variable for either therapist type or communication channel (See Appendix F for summary table).

The analysis of variance based on the total score for the seven Semantic Differential scales did not detect a significant difference for the sex variable for either therapist type or communication channel (See Appendix G for summary table). As the groups did not differ significantly on the sex variable for either the IMI or SDS scores, support was not provided for Hypothesis 4 and the data was subsequently collapsed over the sex variable.

Summary of Results

Four hypotheses were tested in this experiment. Only one of the hypotheses was confirmed: Hypothesis 1 predicted that subjects in the "A" therapist type group would receive their greatest impact on the visual channel and this hypothesis was supported by a significant interaction of the IMI scores. Additional support was demonstrated by a trend toward a significant interaction for the "A" therapist type on the visual channel by the SDS scores.

The other three hypotheses were not confirmed. For Hypothesis 2, the "B" therapist type group received the main impact on the visual channel instead of on the predicted linguistic channel. For Hypothesis 3, both therapist type groups received their lowest impact on the audio channel instead of the impact being in the midrange as predicted. Hypothesis 4 was not supported as there was no significant difference between sex and therapist type. There was also no significant difference found between sex and communication channel for either the IMI or SDS scores. There was no significant three-way interaction (Sex x Therapist type x Communication channel) for either the IMI or SDS scores.

DISCUSSION

An emphasis in psychotherapy research has been on metacommunication (the ability to make statements about how the process of communication is occurring) the issue has arisen as to whether differences in personality style are predictive of distinctive decoding preferences. This experiment was designed to test the assumption that there is a link between interpersonal style and preference for decoding on the visual, audio and/or linguistic channels of communication. Specifically, do "A" and "B" therapist types differ as to the channel of communication on which they are likely to receive

the dominant impact from an affective message? The resulting hypotheses stated that the "A" therapist type would decode most accurately on the visual channel, while the "B" therapist type would decode most accurately on the linguistic channel.

As reported earlier, only one of the original hypotheses was supported in this experiment. The "A" therapist type did receive the greatest impact on the visual channel. Contrary to what was expected, the "B" therapist type also received the strongest impact on the visual channel. Although the expected interaction between the "B" therapist type and the linguistic channel did not occur at a conventional level of significance, the data do suggest a trend in the predicted direction; the "B" therapist type received a higher impact on the linguistic channel than the "A" therapist type, providing support for the original hypothesis that different interpersonal styles demonstrate a preference for a channel of communication when decoding an affective message.

The higher impact on the visual channel over the audio and linguistic channels may be explained through consideration of the strength of the visual channel. DePaulo, Rosenthal, Eisenstat, Rogers and Finkelstein (1978) found the visual channel to be superior in decoding affective displays without any consideration of personality variables. DiMatteo and Hall (1978) stress the importance of including nonverbal cues in decoding affective displays, supporting Kiesler's (1977) designation of the nonverbal channel as the transmittor of emotional and affective messages. Because the nonverbal channels of communication are directly related to the transmission of the connotative aspects of a message, and the dependent variable in this experiment was a behavioral style (submissiveness), it may be concluded that the visual channel most accurately conveys the multitude of ambiguous, affective cues transmitted in the dependent variable, regardless of personality styles. However, the significant interaction of the "A" therapist type and the visual channel suggests

that while an overall impact may exist from the visual channel, it still impacts differentially across interpersonal styles as designated by the A-B continuum.

The dependent measures: The IMI and SDS. As previously stated, the significant interaction for the "A" therapist type and the visual channel was obtained only with the IMI, although the SDS did demonstrate a significant main effect for the visual channel. The fact that only the IMI measured the interaction could be due to the specific nature of the instrument.

The Impact Message Inventory was developed as a method to empirically anchor the measurement of interpersonal, dyadic interactions. It was designed to measure the covert affective, cognitive and behavioral influences of communication in relationships. The IMI allows the decoder to register his or her emotional responses to the encoded message without attaching a specific label to the emotion. Because the subject is provided with a series of specific statements geared to measure affect, cognition and behavior, the IMI may be a more accurate recorder of a behavioral style such as submissiveness than the SDS.

With the Semantic Differential Scales, the subject is given a choice between degrees of two specific labels which designate the behavior of the interviewee, rather than assessing the subject's response to that behavior. Because this experiment dealt with the reciprocal process of communiation, both the interviewee's behavioral style and the subject's response are necessary to measure the accuracy of decoding ability. Only the IMI provides all the necessary cues needed to accurately assess the subject's decoding ability, which may be why the IMI is a more sensitive measure of the interaction between therapist type and communication channel.

The audio channel. In contrast to the expected results, the audio channel produced the lowest impact of all three channels for both therapist types. Several reasons can be formulated for the lower impact from the audio channel, including the interaction of paralanguage with verbal and nonverbal cues as well as the quality of the audio tape itself.

A possibility for the lower audio scores is the contrast between the visual, linguistic and audio modalities. It may be that the straightforward nature of the visual-only tape and the transcript impacted higher than the audio channel. The visual and linguistic conditions presented more definitive cues to decode than the audio condition. When the multitude of cues contained in paralanguage (voice tone, inflection, timbre, tempo, etc.) were added to the message with the audio channel, the subjects may have become less sure of their answers, thus resulting in lowest scores on the audio channel.

Although the audio tape presented intact sentences as the stimulus, the impact of the paralanguage qualities may have suffered by the presentation of the interviewee's voice only. Scherer (1971) suggests that communication of paralanguage qualities occurs most accurately within an interpersonal interaction; since the subjects only heard one side of an interaction, the paralanguage qualities may not have been strong enough to create a definite impact, lowering the audio scores.

Another consideration in the audio results is the question of whether the quality of the tape itself interfered with the transmission of paralanguage qualities enough to lower the audio scores. Some subjects made statements initially concerning their ability to hear above the static on the tape and the overall scores in the audio condition seem to be slightly lower across subscales, suggesting the submissive style was not transmitted as accurately on the audio channel as on the visual and linguistic channels.

The "A" therapist type and the visual channel. The results demonstrated that the "A" therapist type decoded most accurately on the visual channel. The nature of the visual channel, i.e. ambiguous cues which change rapidly, is better suited to the "A" therapist type who has been described as spontaneous and more receptive to ambiguous cues (Shows and Carson, 1965). Silverman (1967) described the "A" therapist type as responsive to subliminal cues and as relying on intuition in decision making, while he described the "B" therapist type as rigid and less attentive to low intensity input. Resnick and Beck (1975) described the "B" therapist type as intolerant of ambiguity. Thus, it would appear that compared to the interpersonal style of the "B" therapist type, the interpersonal style designated by the "A" therapist type is more responsive to the nature of the cues conveyed by the visual channel.

The emotional tone of the encoded message is more likely to be perceived on the visual channel. Ekman and Friesen (1967; 1969) state that "leakage" the small movements that are often outside conscious awareness, is responsible for signalling the intensity of emotions and that the integration of both head and body cues are necessary for accurate decoding. The implication here is that the impact of the visual channel is conveyed in a global manner with rapid integration of cues needed for accuracy. The spontaneous, intuitive style of the "A" therapist type seems better suited to this channel than the rigid, precise style of the "B" therapist type. This is demonstrated by the significant interaction in the results.

The "B" therapist type and the linguistic channel. As previously stated, a trend existed in the data suggesting that the "B" therapist type received a higher impact on the linguistic channel than the "A" therapist type, al-

though not to a conventional level of significance. This lack of significance may be explained by the nature of the A-B scale and the effect of certain subject variables on decoding ability.

The A-B scale divides subjects into groups based on scores along a continuum. The cutoff scores in this study were arbitrarily based on a normal distribution which was sample specific to the subjects available. The cutoff scores could have created artificially dichotomous groups which actually contained more subjects toward the midrange than in previous research, showing distinctive results. Possibly, with a population containing more extreme scores, the suggestion of interaction in the data would become more substantial.

Using both medical students and practicing psychotherapists, Goodwin, Geller and Quilan (1979) found support for the original interaction between "A" therapists and schizophrenic patients and "B" therapists and neurotic patients only with inexperienced medical students. As therapist experience increased, the "B" therapists became more comfortable with schizophrenic patients. This result suggests that experience causes changes in the therapeutic style exhibited by practicing psychotherapists. The implication could be that the "B" therapists become more able to decode the nuances of nonverbal behavior with experience, making them more comfortable with schizophrenic patients who are often noncommunicative in the ordinary, verbal sense. Waxer (1978) stresses the importance of therapists' awareness of nonverbal behavior and suggests specific training in this area to help inexperienced therapists, supporting the distinction made by Goodwin et al. (1979) on the basis of experience. Because the subjects in this experiment were not tested a priori on their accuracy in decoding nonverbal behaviors, specific subject ability and familiarity with nonverbal behavior could account for both the higher impact

of the visual channel for the "B" therapist type and the lack of significant interaction on the linguistic channel.

Because the subject population for this experiement was predominantly upper middle class, the effect of sex role attitudes could have influenced the results by creating a sample population that did have superior decoding abilities regardless of personality style. Weitz (1976) found that liberal sex role attitudes in males was an accurate predictor of decoding ability; the more liberal the male, the more accurate a decoder he was. Based on her findings, it could be possible that the population in this experiment was biased in the direction of increased nonverbal decoding ability, making the score for the "B" therapist type more accurate on the visual channel than expected.

The sex variable. Contrary to the expected results, there was no significant difference between males and females in decoding ability across the channels of communication. Although females have consistently been shown to be more accurate encoders, the research is less definitive on the sex differences in decoding ability. Zuckerman and Przeweizman (1978) found a developmental trend for decoding ability; while encoding ability in males decreased after age 3, decoding ability increased for both sexes. Support for stability in decoding ability for both sexes after age 11 was also found by Bugental et al. (1970).

Maccoby and Jacklin (1974) suggest that while socialization teaches males not to express emotions there is not a similiar restriction on decoding emotions. In fact, Frances (1979) suggests males may actually develop superior decoding skills to compensate for their socialized lack of encoding ability.

Socialization, as a factor in the development of sex role attitudes, can

have an effect on decoding ability as previously mentioned. Liberal sex role attitudes could have both an overall impact on the sample population and a particular effect on the male subjects. These liberal attitudes could have an equalizing effect on males and females decoding abilities as Weitz (1976) found that liberal attitudes for males increases nonverbal warmth and decreases nonverbal warmth in females.

Implications for future research. This study has contributed to the growing body of research suggesting that personality styles do decode more accurately on different channels of communication. Implications for this difference could reach into psychotherapy, communications and personality studies.

Several points mentioned in this study would need to be addressed further to clarify the results. First, subject variables which can affect decoding ability need to be controlled in future studies. This could be accomplished through a general selection process prior to experimental manipulation so that groups could be formed based on both interpersonal style and degrees of nonverbal awareness.

Another point of research concerns the accuracy of the audio condition. To date no accurate method of transmitting the paralanguage qualities without interference from linguistic or visual modalities has been developed. A method is needed to allow the decoder to receive the impact of the paralanguage qualities that influence the communication of affective messages.

The most important outcome of this investigation is that an interpersonal difference in decoding has been identified with reference to the "A" therapist type and this difference is bound to affect the reciprocal process of communication. Because this experiment dealt with therapist types, the results suggest further research needs to be done on the client-

therapist variable in a therapeutic setting, particularly as it relates to nonverbal communication. Strupp (1978) states that individual differences within a theoretical orientation make a difference in the client-therapist relationship and in the therapeutic outcome. This investigation has demonstrated that individuals can be classified according to interpersonal styles and that these styles may be linked to decoding preferences across channels of communication. Replicating this experiement with practicing psychotherapists of differing orientations would give empirical support to Strupp's assertion for individual differences as the pivotal focus in the therapeutic relationship.

An additional asset to the therapeutic relationship is the emphasis on decoding preferences. As Bandler and Grinder (1976) have discussed, knowledge of an individual's preferred communication channel can be used to facilitate the therapeutic process. Interpersonal effectiveness can be increased both by the therapist learning to decode client's messages on all modalities and by the therapist teaching clients to do the same in their interpersonal relationships. As more research delves into the area of individual differences for communication channels, the impact could be far-reaching.

Conclusion. The results indicate that differences do exist between "A" and "B" therapist types for decoding preferences, with the "A" therapist type receiving a significantly higher impact on the visual channel than the "B" therapist type as measured by the IMI scales of Submissiveness and Inhibition. Conflicting results focus on the "B" therapist type's ability on both the visual and the linguistic channels. Sex was not shown to affect decoding ability either across therapist types or channels of communication. Questions remain as to the effectiveness of the manipulation of the paralanguage results on the audio channel.

The IMI emerged as a more sensitive indicator of interpersonal interactions than the Semantic Differential Scales. This was thought to be due to the specific nature of the IMI, which was developed to assess communication within dyads.

The purpose of this investigation was to determine if decoding preferences do exist. The results have added to the growth of research supporting individual differences in decoding ability and have suggested further areas of research.

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APPENDIX A

INFORMED CONSENT FORM

I hereby acknowledge that I was informed by Katherine Hudgins of the University of Richmond of a project concerning communication between individuals. The purpose is to discover how people vary in the way they receive communication from another person.

I am fully aware of the nature of my participation in the said prodect. I also understand that I may withdraw my participation in said project at any time. I understand there are no risks or deception involved.

Date_____

Place_____

_____
Signature of Subject

_____
Printed Name

_____
Residence Address

NAME: _____ DATE: _____

SEX: _____ PHONE: _____

Part I - OCCUPATIONS

For each occupation listed below, indicate whether you would like that kind of work or not. Disregard considerations of salary, social status, etc. Consider only whether you would like to do what is involved in the occupation, regardless of any necessary skills, abilities or training you may or may not possess.

Circle the L if you LIKE that kind of work. Circle the I if you are INDIFFERENT (that is, you don't care one way or the other). Circle the D if you DISLIKE that kind of work.

Actor	L	I	D
Athletic director	L	I	D
Author of novel	L	I	D
Auto mechanic	L	I	D
Building contractor	L	I	D
Carpenter	L	I	D
Minister, priest or rabbi	L	I	D
Farmer	L	I	D
Foreign correspondent	L	I	D
Governor of a state	L	I	D
Interpreter	L	I	D
Locomotive engineer	L	I	D
Machinist	L	I	D
Poet	L	I	D
Private secretary	L	I	D
Shop Foreman	L	I	D
Toolmaker	L	I	D

NAME: _____

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

Chemistry	L	I	D
Economics	L	I	D
English Composition	L	I	D
Languages, modern	L	I	D
Physical education	L	I	D
Shop Work	L	I	D

Show in the same way whether or not you like these ways of having fun. Do not think over the various possibilities. Record your first feeling of LIKE, INDIFFERENT or DISLIKE.

Tennis	L	I	D
Conventions	L	I	D
Formal dress affairs	L	I	D
Symphony concerts	L	I	D
Social problem movies	L	I	D

Indicate you interests in these activities as before.

Cabinetmaking	L	I	D
Operating machinery	L	I	D
Repairing electrical wiring	L	I	D
Adjusting difficulties of others	L	I	D
Expressing opinions openly, regardless of what other say	L	I	D
Raising money for charity	L	I	D

Show your feelings about these different kinds of people. Do not think of various possibilities or of exceptional cases. "Let yourself go" and record the feeling that comes to mind as you read each item.

People who have made fortunes in business	L	I	D
Fashionably dressed people	L	I	D

NAME: _____

Independents in politics	L	I	D
President of a society or club	L	I	D
Member of a society or club	L	I	D

Show here which of two different kinds of work or ways of doing things you like better. If you like the item on the left, circle the L; if you prefer the item on the right, circle the R. If you like them both the same, or can't decide which you like better, circle the letter between the two items. Work rapidly.

L	Talk others into doing something	A	Order others to do something	R
L	Taking a chance	B	Playing safe	R
L	Work with few details	C	Work with many details	R
L	Listening to a story	D	Telling a story	R

Show here what kind of person you are and the kinds of things you do. If the item describes you, circle YES; if the item does not describe you, circle NO; if you are not sure, circle the question mark (?). Be frank in pointing out your weak points as well as your strong points.

Am able to meet emergencies quickly and effectively	Yes	No	?
Stimulate the ambitions of my associates	Yes	No	?
Can be firm and show I mean it	Yes	No	?

APPENDIX C

Name: _____

Sex: _____

Following are some pairs of words which you are to evaluate. Place a checkmark on the line which shows how well the two words describe the person you saw or heard. For example, if one pair of words were good-bad and you felt good more closely described the person than bad, you might place the checkmark as follows:

good ___ ___ ✓ ___ ___ ___ ___ ___ ___ bad

Try not to spend a great deal of time on any one pair of words.

lenient ___ ___ ___ ___ ___ ___ ___ ___ ___ severe

weak ___ ___ ___ ___ ___ ___ ___ ___ ___ strong

active ___ ___ ___ ___ ___ ___ ___ ___ ___ passive

tense ___ ___ ___ ___ ___ ___ ___ ___ ___ relaxed

submissive ___ ___ ___ ___ ___ ___ ___ ___ ___ dominant

dull ___ ___ ___ ___ ___ ___ ___ ___ ___ sharp

free ___ ___ ___ ___ ___ ___ ___ ___ ___ constrained

APPENDIX D

IMPACT MESSAGE INVENTORY

(IMI – FORM II – 1976)

Name _____ Sex _____

Age _____ Subject number _____

This inventory contains words, phrases and statements which people use to describe how they are emotionally engaged or impacted when interacting with another person.

You are to respond to this Inventory by indicating how accurately each of the following items describes your reactions to the particular person under consideration. Respond to each item in terms of how precisely it describes the feelings this person arouses in you, the behaviors you want to direct toward him when he's around, and/or the descriptions of him that come to mind when you're with him. Indicate how each item describes your actual reactions by using the following scale: 1--Not at all, 2--Somewhat, 3--Moderately so, 4--Very much so.

In filling out the following pages, first imagine you are in this person's presence, in the process of interacting with him. Focus on the immediate reactions you would be experiencing. Then read each of the following items and fill in the number to the left of the statement which best describes how you would be feeling and/or would want to behave if you were actually, at this moment, in the person's presence.

At the top of each page, in bold print, is a statement which is to precede each of the items on that page. Precede the reading of each item with that statement; it will aid you in imagining the presence of the person described.

There are no right or wrong answers since different people react differently to the same person. What we want you to indicate is the extent to which each item accurately describes what you would be experiencing *if you were interacting right now with this person.*

Please be sure to fill in the one number which best answers how accurately that item describes what you would be experiencing. For example, if an item is **Somewhat** descriptive of your reaction, fill in the number 2 for **Somewhat** descriptive:

[2]

Thank you in advance for your cooperation.

The Impact Message Inventory was developed by Donald J. Kiesler, Jack C. Anchin, Michael J. Perkins, Bernard M. Chirico, Edgar M. Kyle, and Edward J. Federman of Virginia Commonwealth University, Richmond, Virginia.

1--Not at all
2--Somewhat
3--Moderately so
4--Very much so

WHEN I AM WITH THIS PERSON HE MAKES ME FEEL . . .

1. ☐ bossed around.
2. ☐ distant from him.
3. ☐ superior to him.
4. ☐ important.
5. ☐ entertained.
6. ☐ impersonal.
7. ☐ like an intruder.
8. ☐ in charge.
9. ☐ appreciated by him.
10. ☐ part of the group when he's around.
11. ☐ cold.
12. ☐ forced to shoulder all the responsibility.
13. ☐ needed.
14. ☐ complimented.
15. ☐ as if he's the class clown.
16. ☐ annoyed.
17. ☐ embarrassed for him.
18. ☐ frustrated because he won't defend his position.
19. ☐ loved.
20. ☐ taken charge of.
21. ☐ defensive.
22. ☐ curious as to why he avoids being alone.
23. ☐ dominant.
24. ☐ welcome with him.
25. ☐ as important to him as others in the group.
26. ☐ like an impersonal audience.
27. ☐ uneasy.
28. ☐ as though he should do it himself.
29. ☐ admired.
30. ☐ like I'm just one of many friends.

Do Not Write Below This Line

31	32	33	34	35	36	37	38	39
[1]	☐	☐	☐	☐	☐	☐	☐	☐

1--Not at all
2--Somewhat
3--Moderately so
4--Very much so

WHEN I AM WITH THIS PERSON HE MAKES ME FEEL THAT . . .

1. ☐ I want to tell him to give someone else a chance to make a decision.
2. ☐ I should be cautious about what I say or do around him.
3. ☐ I should be very gentle with him.
4. ☐ I want him to disagree with me sometimes.
5. ☐ I could lean on him for support.
6. ☐ I want to put him down.
7. ☐ I'm going to intrude.
8. ☐ I should tell him to stand up for himself.
9. ☐ I can ask him to carry his share of the load.
10. ☐ I could relax and he'd take charge.
11. ☐ I want to stay away from him.
12. ☐ I should avoid putting him on the spot.
13. ☐ I could tell him anything and he would agree.
14. ☐ I can join in the activities.
15. ☐ I want to tell him he's obnoxious.
16. ☐ I want to get away from him.
17. ☐ I should do something to put him at ease.
18. ☐ I want to point out his good qualities to him.
19. ☐ I shouldn't hesitate to call on him.
20. ☐ I shouldn't take him seriously.
21. ☐ I should tell him he's often quite inconsiderate.
22. ☐ I want to show him what he does is self-defeating.
23. ☐ I should tell him not to be so nervous around me.
24. ☐ I could ask him to do anything.
25. ☐ I want to ask him why he constantly needs to be with other people.
26. ☐ I want to protect myself.
27. ☐ I should leave him alone.
28. ☐ I should gently help him begin to assume responsibility for his own decisions.
29. ☐ I want to hear what he doesn't like about me.
30. ☐ I should like him.

Do Not Write Below This Line

---

[2]	☐	☐	☐	☐	☐	☐	☐	☐
31	32	33	34	35	36	37	38	39

1--Not at all
2--Somewhat
3--Moderately so
4--Very much so

WHEN I AM WITH THIS PERSON IT APPEARS TO ME THAT . . .

1. ☐ he wants to be the center of attention.
2. ☐ he doesn't want to get involved with me.
3. ☐ he is most comfortable withdrawing into the background when an issue arises.
4. ☐ he wants to pick my brain.
5. ☐ he carries his share of the load.
6. ☐ he wants me to put him on a pedestal.
7. ☐ he'd rather be alone.
8. ☐ he thinks he can't do anything for himself.
9. ☐ his time is mine if I need it.
10. ☐ he wants everyone to like him.
11. ☐ he thinks it's every man for himself.
12. ☐ he thinks he will be ridiculed if he asserts himself with others.
13. ☐ he would accept whatever I said.
14. ☐ he wants to be helpful.
15. ☐ he wants to be the charming one.
16. ☐ he's carrying a grudge.
17. ☐ he's nervous around me.
18. ☐ whatever I did would be okay with him.
19. ☐ he trusts me.
20. ☐ he thinks other people find him interesting, amusing, fascinating and witty.
21. ☐ he weighs situations in terms of what he can get out of them.
22. ☐ he'd rather be left alone.
23. ☐ he sees me as superior.
24. ☐ he's genuinely interested in me.
25. ☐ he wants to be with others.
26. ☐ he thinks he's always in control of things.
27. ☐ as far as he's concerned, I could just as easily be someone else.
28. ☐ he thinks he is inadequate.
29. ☐ he thinks I have most of the answers.
30. ☐ he enjoys being with people.

Do Not Write Below This Line

[3]								
31	32	33	34	35	36	37	38	39

APPENDIX E

Interviewer:

Applicant: Uh, huh.

Interviewer:

Applicant: Heidi.

Interviewer:

Applicant: Gentz. G-E-N-T-Z.

Interviewer:

Applicant: 1626 Monument Avenue.

Interviewer:

Applicant: Number 3.

Interviewer:

Applicant: No, I have a roommate.

Interviewer:

Applicant: Um, since uh first of September.

Interviewer:

Applicant: Uh, hum. 358 (pause) 3444.

Interviewer:

Applicant: Uh, I'm a student.

Interviewer:

Applicant: I'm a business major.

Interviewer:

Applicant: I'm a junior.

Interviewer:

Applicant: Uh, I've worked in uh a lot of church groups and uh I've done uh some work in. . . .

Interviewer:

Applicant: Uh, well, it was called the Lutheran League and it was a community service group.

Interviewer:

Applicant: Um, huh.

Interviewer:

Applicant: Oh.

Interviewer:

Applicant: Um, I I was working uh a crew for one of the shows that I did last year here at VCU and uh it was a kind of encounter group that we did for a while before we started working on the show.

Interviewer:

Applicant: Director.

Interviewer:

Applicant: Um, he's got, he's a doctor.

Interviewer:

Applicant: In theater.

Interviewer:

Applicant: Um, huh.

Interviewer:

Applicant: Um, no not really.

Interviewer:

Applicant: Um, I'm real interested.

Interviewer:

Applicant: Well. . .

Interviewer:

Applicant: Um, um I I enjoy uh working in groups. I've never you know been a like a head of a committee or anything like that.

Interviewer:

Applicant: I get to meet people.

Interviewer:

Applicant: Yeh, but we did uh we did some things you know with uh you know like sensitivity sessions.

Interviewer:

Applicant: Uh, yeah, heh.

Interviewer:

Applicant: No, no not not really.

Interviewer:

Applicant: Um.

Interviewer:

Applicant: Um, well sort of of as far as you know criticism. I usually you know just set back and listen to what they had to say and I don't like to argue. I usually don't. . . .

Interviewer:

Applicant: Um.

Interviewer:

Applicant: Well, then I'll I'll say I'm sorry if you think that way and let it go.

Interviewer:

Applicant: Well, I don't know if it's exactly being walked on but I just don't like to make waves. I don't like to argue with people or put myself in a position like that.

Interviewer:

Applicant: Well, I'm just real interested in uh trying this.

Interviewer:

Applicant: Okay.

APPENDIX F

Table 6

Source Table Derived From the Analysis of Variance for Therapist Types "A" and "B" According to Communication Channel and Sex for the IMI Scales

Source	df	MS	F
Sex (A)	1	4.29	.113
Type (B)	1	9.84	.260
Condition (C)	2	457.28	12.07**
A x B	1	63.15	1.67
A x C	2	13.38	.35
B x C	2	166.22	4.39*
A x B x C	2	30.65	.809
Error	52	37.89	

**p < .001

*p < .05

APPENDIX G

Table 7

Source Table Dereived from the Analysis of Variance for Therapist Types "A" and "B" According to Communication Channel and Sex on the SDS Scores

Source	df	MS	F
Sex (A)	1	2.58	.067
Type (B)	1	17.99	.467
Condition (C)	2	619.30	16.06**
A x B	1	50.242	1.31
A x C	2	34.63	.898
B x C	2	115.66	2.99
A x B x C	2	47.43	1.23
Error	52	38.57	

**$p < .001$.