The Relationship between Interpersonal Perception and Psychological Adjustment

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THE RELATIONSHIP BETWEEN INTERPERSONAL PERCEPTION
AND PSYCHOLOGICAL ADJUSTMENT

by

Barbara A. Dambach

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Degree of Doctor of Education

Western Michigan University
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I want to express deep appreciation to Dr. Kenneth Bullmer for his untiring dedication to my work and his unfailing support of me and my efforts. Without his continued guidance and encouragement, this study would not have been possible. Dr. Bullmer's previous work in the field of interpersonal perception also deserves acknowledgment: His research not only provided substantial background for the study, but also served as a constant inspiration.

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Barbara A. Dambach
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THE RELATIONSHIP BETWEEN INTERPERSONAL PERCEPTION AND PSYCHOLOGICAL ADJUSTMENT.

WESTERN MICHIGAN UNIVERSITY, ED.D., 1973
This study is dedicated to the memory of William D. Martinson. He will always live in the hearts of those who knew and loved him.
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CHAPTER I

The Problem and Its Background

The purpose of this study is to examine the relationship between interpersonal perception and psychological adjustment. Specifically, it will examine the effect of improved interpersonal perceptual skill on subjects' level of psychological adjustment.

Of the many existing personality theorists who have postulated criteria for determining psychological adjustment, a significant number have given focus to the importance of effective cognitive functioning. Phenomenologists such as Lewin (1935), Maslow (1954), and Rogers (1951a), as well as such cognitive theorists as Ellis (1962), have asserted that how human beings think about and perceive the world around them shapes their reality and existence. They have also maintained that great variability exists among individuals as to how they perceive themselves and their environment. It is this variability in perception which may in fact determine the wide variability in people's ability to adjust or adapt to their social environment.

Ellis (1962, 1976) asserted that cognitive functioning is the primary element that affects or determines psychological adjustment. The central theme of rational therapy is that man is a uniquely rational, as well as irrational,
being; that emotional, or psychological, disturbance is largely a result of illogical or irrational thinking; and that human beings can rid themselves of most of their emotional unhappiness and ineffectuality if they learn to maximize their rational thinking and minimize their irrational thinking. Throughout his theory, Ellis has given much emphasis to the role of perception. He has maintained that individuals' difficulties stem from distorted perception, as well as illogical thinking, and that it is often necessary to reorder perceptions in order to achieve internal harmony. In his early writings, Ellis (1956) gave special note to the relationship between perception and behavior: "Perception biases response and then response tends to bias subsequent perception" (p. 44). Thus, a therapist's goal is to convince patients that they are perceiving reality mistakenly and illogically, and that they must perceive it differently if they are to overcome their disturbance (Arnold, 1960; Ellis, 1962).

Phenomenologists such as Lewin (1935), Rogers (1951a), and Snygg and Combs (1949) emphasized the process of perception as a fundamental determinant of an individual's experience and subsequent adjustment or maladjustment. One of the basic premises of phenomenological theory is that every individual exists in a continually changing world of experience of which he or she is the center. This private world may be called the phenomenal field and includes all that is
experienced by an individual, whether or not these experiences are consciously perceived. This perceptual field is "reality" for the individual. Blake and Ramsey (1951) extended the notion of reality being creative to the point of suggesting that since each individual perceives a given reality in a characteristic way, there are as many realities as there are perceivers. Moreover, each individual reacts to reality as perceived. That is, as Ellis (1956) suggested, perception biases response and then response tends to bias subsequent perception.

Rogers (1951a) defined psychological adjustment as a state in which an organism is open to all sensory and visceral experience and has freedom from inner tension to assimilate such experience on a symbolic level into a consistent relationship with the self-concept. Similarly, psychological maladjustment exists when an organism is threatened by perception and responds defensively by distorting or denying such perceived experience in order to reduce incongruity between the experience and the concept of self. Thus, "accurate" or nondefensive perception is the critical element in determining psychological health. Client-centered therapy, therefore, focuses on a client's perceptual process, attempting to reduce the number of experiences which are perceived as threatening. Rogers (1951a, 1951b) has maintained that such developed openness in the perceptual process will lead not only to a congruent sense of self but to better
interpersonal relations with others.

Freudian psychology underplays the function of cognitive control in personality, asserting that behavior is determined by needs, instincts, and drives, rather than rational thinking. Freud's (1967) conception of ego defense mechanisms, however, relates directly to the process of perception. Freud theorized that when individuals experience psychological conflict and subsequent anxiety, they typically protect themselves from such discomfort by distorting or denying their perceptions through the use of projection, identification, reaction-formation, and other defenses. Severe psychological maladjustment occurs when individuals have employed perceptual distortion to the extent that they are no longer able to distinguish external reality. Thus, according to Freudian psychology, individuals' psychological adjustment depends on their ability to perceive their own behavior and the behavior of others with minimal denial and distortion.

Allport (1961) placed the role of cognition and perception at the center of his personality theory. He reasoned that the basic requirement of all human beings is to handle the world competently enough to survive. Unless they can keep reasonably close in tune with reality, they will die. Thus, accurate perceiving and effective cognitive functioning are essential to human survival, as well as to psychological adjustment. Mental disorder occurs when a person loses partial touch with reality, or as Allport (1961) stated,
when "his perceptions and cognitions are defective in veridicality" (p. 271). There is experimental evidence that people who are badly adjusted or appear psychologically abnormal do, in fact, make more errors in ordinary perceptual tasks than do well-adjusted people (Barron, 1954; Maslow, 1957).

Allport (1961) directly related perception with psychological adjustment in his definition of a healthy personality. Healthy personalities actively master their environment, show a certain unity of personality, and are able to perceive the world and themselves correctly. Everyday perceptions and cognitions of the sound personality are on the whole marked by efficiency and accuracy. The psychologically sound individual has perceptual sets or expectancies that lead to veridicality to a greater degree than do persons not so sound. As Allport suggested, maturity does not bend reality to fit one's needs and fantasies.

Maslow (1954) also included accurate perception in his definition of a mature, healthy or self-actualizing personality. He explicitly attributed to psychologically well-adjusted individuals more efficient perception of reality and more comfortable relations with it. Maslow (1954, 1957) examined this relationship between perception and adjustment experimentally and concluded that healthy subjects judge situations and people more accurately than do unhealthy subjects. Perhaps for this reason they were "uniformly unthreatened and unfrightened by the unknown" (1954, p. 205).
They did not, like immature people, show a "catastrophic need for certainty, safety, defensiveness, and order" (p. 206).

All of the personality theorists mentioned above have stressed the importance of accurate perception in relationship to psychological adjustment. Many psychologists who have studied and researched the field of perception also have given much credence to the relationship between perception, personality dynamics, and psychological adjustment. Klein (1950) attempted to describe this relationship by asserting that perception is put to use by an individual in an effort to achieve equilibrium between inner demands and outer imperatives. That is, the perceptual process serves in an adaptive function to keep individuals in a more or less balanced or "steady state" in the face of a task, problem, or a stimulus which must be resolved.

Klein (1951) hypothesized three perceptual attitudes which are special ways, distinctive for a person, for coming to grips with reality. Experimentally, he examined the relationship between perception and the following dimensions of personality: (1) "leveling" versus "sharpening" of differences; (2) tolerance versus resistance to the unstable; and (3) the physiognomic versus literal attribution of meaning. Klein found that each of these perceptual attitudes are related to individual differences in perceiving, and that each person can be considered to have a self-consistent
"perceptual character" or "preferred mode of control."

Emphasizing the importance of perceptual attitude as an intervening variable between perception and perceptual variation, Klein (1951) attempted to bridge the gap between perceptual data and personality theory.

Cameron (1951) examined the relationship between perceptual organization and behavior pathology, finding that delusional development is directly related to psychotic individuals' overwhelming need for perceptual stability, clarity, and definiteness. Restrictive and distortive perceptions develop into pseudocommunities in an attempt to destroy contradictions, complete the incomplete, and replace doubt with certainty. Frenkel-Brunswik (1948a, 1948b) found this restrictive-distortive phase of perceptual development common to ethnically prejudiced individuals. She found that the ethnically prejudiced also suffered from a rigid, segmentary perceptual approach, resorting to black-white solutions and arriving at premature closure. Another study demonstrates less perceptual tolerance for ambiguity in rigid personalities (Frenkel-Brunswik, 1949).

Bruner (1951) suggested that the dimensions of self-salience (i.e., self-consciousness) and self-potency (i.e., self-confidence) on one's personality are directly related to the type of cues the individual selectively perceives as adjustmentally relevant. He further suggested that a full range of personality traits may be used as correlates of the...
kind of cues in the environment which guide individuals in maintaining or advancing their personal adjustment. In other words, individuals select cues from their environment which are personally relevant to them and tend to confirm their implicit hypotheses about themselves.

Ittelson and Kutash (1961) studied the relationship between perceptual flexibility and mental health. They investigated the size-constancy perception of a group of schizophrenic subjects and a group of nonschizophrenic, or so-called normal subjects, under two different conditions of experimental instructions, objective and analytic. The schizophrenic subjects demonstrated a higher degree of size-constancy than did the non-schizophrenics, regardless of the type of instructions used or the content of the standard stimulus. The results suggest greater perceptual rigidity of schizophrenic subjects as compared to normal subjects.

In another type of study, Kaufer (1961) investigated the relationship between personality orientation and characteristic modes of perceiving as manifested in reactions to emotionally valent material. Among the related problems Kaufer dealt with were such specific aspects as whether there was a correlation between emotional valence and the perception of an object by an individual within the context of a particular personality orientation. The personality orientations were defined, in Horney's (1950) terms, as tendencies to move toward, against, or away from people. Kaufer concluded,
generally, that personality orientation is related to characteristic modes of perception. His study did not reveal any differential effect of emotional valence.

It is obvious from the above discussion that perception is deemed a valuable approach to the study of personality and psychological adjustment. Both personality theorists and researchers of the field of perception have attempted to explore the relationships among the perceptual process, personality dynamics, and psychological adjustment. Unfortunately, minimal attention has been given specifically to the relationship between interpersonal perception and psychological adjustment.

Personality theorists such as Adler (1964), Allport (1961), Maslow (1954), Rogers (1951a), and Sullivan (1953) have consistently maintained the importance of effective interpersonal relationships as a critical element of psychological adjustment. They have emphasized the fact that man is a social being, and therefore his ability to cope and/or adapt to his/her social environment depends upon the ability to relate well to others. Bullmer (1970b, 1975) asserted that the individual's ability to understand and predict the behaviors of others is the crucial factor in responding to other people in a way that is both appropriate to the situation and personally satisfying. Interpersonal perception is the process by which an individual forms an impression or develops an understanding of another individual. Sarbin,
Taft, and Bailey (1960) have supported this view: People's success in developing meaningful relationships is intimately related to their ability to understand or perceive others accurately.

Thus, the ability to establish relationships has been accorded much importance in determining psychological adjustment. Moreover, this ability to develop meaningful interpersonal relationships has been found to be integrally related to one's ability to perceive accurately the feeling and meaning of another individual. It follows, therefore, that a relationship exists between interpersonal perception and psychological adjustment.

As discussed above, personality theorists have stressed the importance of perception in defining psychological adjustment. Researchers in the field of perception have examined this relationship experimentally and found that such ability to develop effective interpersonal relationships is a significant determinant of psychological adjustment. Researchers in the field of perception have suggested that the ability to develop effective interpersonal relationships is intimately related to the ability to understand or perceive others accurately.

Considering such conclusions of both theorists and researchers, it is surprising that little research has been done to investigate the relationship between interpersonal perception and psychological adjustment. Considering the
lack of research available to validate this relationship, this study will address the general hypothesis that a relationship exists between interpersonal perception and psychological adjustment.

Review of Related Research and Literature

Research and literature pertinent to this study are concerned primarily with two areas: the perceptual process and its relationship to psychological adjustment, and the process of interpersonal perception and its relationship to psychological adjustment. These two areas will be considered separately.

Perception and psychological adjustment. In order to study the process of perception, it is necessary, first of all, to understand what perception is. Thus, a definition of perception is required, but because of the many different points of view which exist in the field of psychology, a single generally accepted definition of perception is not available. Bruner and Postman (1950) have pointed out, however, that the many major discrete theories of perception may be categorized into two basic approaches of conceptualizing the process: formalism and functionalism.

The formalists have little concern with the role of perception in the adjustment of the organism; they are concerned with the process of perception in and of itself. As Bruner and Postman (1950, p. 14) noted, the formalists use
the standard experimental approach to study the relations between the dimensions of the stimulus and the attributes of the perceptual experience and the determinants of these relations by sensory mechanisms. The perceiver's psychological set, motivation, and past learning are supposedly experimentally controlled for, and the subject is assumed to have a basically neutral attitude toward the stimulus. In describing the formalistic model of Brunswik (1949), Rommetveit (1960) concluded: "Because of reliance upon external, objective measurement and the definition of stimulus variables independently of their representation on the sensory surface of the perceiving organism, Brunswik's model may be characterized as a 'psychology of the empty organism'" (p. 135).

The functionalists, on the other hand, view perception in a broader behavioral context. According to Bruner and Postman (1950), their primary concern is how perceptual functioning interacts with other forms of psychological functioning. Perception is viewed as an instrumental activity. In functionalistic experimental study, not only the physical stimulus and the sensory state of the organism are varied, but also the central conditions—motives, predispositions, and past learnings (Bruner & Postman, 1950, p. 15). Rommetveit (1960) labeled this approach to perception the "psychology of the empty social world" (p. 136). Percepts are conceived as products of active categorization by the perceiver rather than externally given, universal attributes
that can be assessed independently of the perceiver's unique "internal" psychological characteristics (p. 136).

The functionalist view of perception is particularly relevant to the purposes of this study. The perceiver is assumed to play a very active role in the process, both in the selection of cues that are attended and responded to and in the organization of those cues into a personally meaningful form. As Forgus (1966) explained, perception may be very simply defined as the process of extracting information from the environment (p. 1). This process is not a simple one, however, because of the interdependence between perception, learning, and thinking. As Bullmer (1970b) stated, "Perception is the core process which influences and is influenced by learning and thinking" (p. 7). Bullmer summarized very well the importance of the individual perceiver in the process of perception:

The directing force behind the perceptual operations of attention and organization is some kind of perceptual-cognitive structure within the perceiver; a structure which is a unique combination of previous learnings and thought processes and which is influenced by the perceiver's beliefs, attitudes and values. The perceptual-cognitive structure of the perceiver determines which cues shall be emphasized and which shall be inhibited and dictates what dimensions shall be utilized in ordering the selected cues into a configuration which is useful and meaningful to the perceiver. (pp. 9-10)

Considering that the perceptual process is such a dynamic, cognitive process and that the psychological characteristics of the perceiver can so greatly affect or even
determine the resulting percepts, it is not difficult to understand that a relationship between perception and psychological adjustment exists. The process of perception may be considered the medium by which an individual attempts to maintain psychological adjustment. Through perception the individual shapes and defines reality, a reality which is congruent with previously defined beliefs, attitudes, and values. As Klein and Schlesinger (1950) explained, "The perceptual system, which provides for detection, selection, and control over stimulation, is instrumental for the never-ending task of equilibration" (p. 36). That is, the perceiver selects and orders cues from the environment with a primary purpose of maintaining emotional stability. This is achieved by perceiving the external world as congruent with the needs, wishes, and beliefs of the perceiver's internal world.

To fully understand the relationship between perception and psychological adjustment, one must consider it as a mutual relationship: Perception affects psychological adjustment; the level of the perceiver's psychological adjustment affects his/her perception. It has been established that an individual's perceptual capacities form part of the fund of resources utilized in the development and maintenance of coping techniques. It can be further asserted that this structure of coping mechanisms directly affects the nature of an individual's perception, in the sense of
producing characteristic ways of perceiving. As Witkin (1954) noted, "Perception thus contributes to adjustment and in turn reflects that adjustment" (p. 491).

Personality theorists have consistently maintained that perceptual accuracy is related to psychological health. Although they each define their concepts in different terms, Combs (1962), Rogers (1951a), Allport (1961), Kelly (1955), and Maslow (1962) have all agreed on one basic theoretical tenet: Psychologically healthy persons experience relative freedom from psychological threat and therefore have no need to distort their perceptions in order to defend against anxiety. Combs (1962, pp. 50-65) suggested that truly adequate persons are capable of accepting into awareness any and all aspects of reality; their perceptual fields are maximally open. Such openness allows more perceptual data to be extracted, which gives the individual better information to make decisions and thus to have better judgment. The more secure individual also maintains less rigid perceptual organization, not being fixated on the need to maintain and enhance the self.

Rogers (1951a) defined psychological adjustment as the state in which "the organism is open to all sensory and visceral experience and has the freedom from inner tension to assimilate such experience on a symbolic level into a consistent relationship with the concept of self" (p. 483). Kelly (1962) asserted that the quality of perceptions
determines the quality of behavior of an individual. Allport (1961) defined mental disorder or psychological maladjustment as that state in which an individual's "perceptions and cognitions are defective in veridicality" (p. 271). Maslow (1962) very clearly described this relationship of psychological adjustment to perceptual accuracy:

To the extent that perception is desire-less and fear-less, to that extent is it more veridical, in the sense of perceiving the true or essential or intrinsic whole nature of the object (without splitting it up by abstraction). Thus the goal of objective and true description of any reality is fostered by psychological health. Neurosis, psychosis, stunting of growth, all are, from this point of view, cognitive diseases as well, contaminating perception, learning, remembering, attending, and thinking. (p. 41)

It is clear that these personality theorists believe that psychological adjustment is dependent upon accurate perception, and conversely, accurate perception is fostered by psychological health. It also seems apparent that theoretically, perceptual "openness" is related to both psychological adjustment and perceptual accuracy. Although this concept of openness is not defined in exact scientific terminology, it implies that psychologically healthy, accurate perceivers are capable of approaching stimuli with a mind set of flexibility and receptiveness, in contrast to an attitude of rigidity and defensiveness. Accurate perceivers do not experience the need to protect their psychological stability by blocking or distorting any particular set of cues because of the fear of experiencing incongruency between
the external world and their internal worlds.

Researchers in the area of perception have approached this idea of openness in the perceptual field from a different perspective than the personality theorists. Rather than investigating and theorizing about the psychological health of the perceiver and its relationship to perception, they have defined various personality characteristics which may be responsible for consistent modes of perception among individuals. Vernon (1970) explained:

We have seen that perception may be facilitated or inhibited, and directed towards particular features of the environment, in accordance with knowledge, experience, interests and motives of particular persons. But it would seem that it may also be related to other aspects of the personality; to modes of perceiving which are based on general characteristics of the personality not specifically related to particular experiences, interests or motives. (p. 228)

Extensive work has been carried out to investigate the relationships between consistent modes of perceiving and enduring personality qualities. But as Vernon (1970, p. 230) pointed out, much of the work is of doubtful value because of the tendency to group the personalities of those whose percepts are being studied into two contrasted types, regarded as opposites, and to compare the differences in perception of these as they appear in a single experiment (e.g., the dichotomy of introversion-extraversion). It seems probable that relationships between personality qualities and modes of perceiving are more subtle and varied than can be defined by a single dichotomous typology.
In the studies of Witkin and his colleagues, there has been an attempt to relate certain general modes of perceiving, not to single personality qualities but to general types of personality covering a number of different characteristics. Witkin (1954) discovered characteristic differences in the manner in which tilted frameworks were perceived in otherwise dark rooms and devised three tests based on these situations: the Rod and Frame Test, the Tilted Room-Tilted Chair Test, and the Rotating Room Test. In all of these, observers were required to give estimates of the true vertical; and it was found that some observers located it as parallel to the visual framework, and others in accordance with their internal gravitational sensations of the vertical. Witkin also found that the latter type of perceiver was better able than the former to extract embedded simple figures from complex figures in the Embedded Figures Test. Witkin hypothesized that those who relied on the visual framework, who were called "field dependent," were people greatly affected by standards derived from environmental pressures; whereas those who relied on their internal postural senses, termed "field independent," were people who relied on their own internal feelings and convictions. Subjects were also given projection tests of personality, the Rorschach Test, Thematic Apperception Test, and figure-drawing tests. The field dependent were said to be relatively passive, low in self-esteem and self-reliance, and ready to submit to external

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authority. They were lacking in awareness, understanding and acceptance of themselves, and anxious and fearful of their aggressive and sexual impulses. By contrast, the field independent were active, socially independent, ready to struggle for mastery, more able to know and accept themselves and to analyze their perceptual performance.

Vernon (1970) pointed out that these results have met with some criticism, directed basically at the idea that the reliability and validity of projection test results are somewhat dubious. However, Young (1959) obtained substantial agreement with Witkin and pointed out that these characteristics are demonstrated only in tests such as the Rorschach Test which taps unconscious tendencies, and not in tests of self-evaluation which operate at the conscious level.

This dimension of field dependence-independence seems directly related to perceptual flexibility, or what the personality theorists referred to as perceptual openness. Elliot (1961) concluded that the deficit in field dependent persons is mainly intellectual and is manifested in their ability to cope with new and incongruous situations. Perez (1955, cited by Witkin et al., 1962) found that field independent persons were more perceptually flexible than those who were field dependent. They were able to adopt various procedures of perceiving an event, whereas field dependent persons generally relied on only one procedure. Finally, Witkin (1962) studied the development of field independence
in children, and considered field independence related to psychological differentiation, or the ability to segregate the self from the not-self, and intelligence. Witkin concluded that field independent individuals perceived the environment, and also other persons, with greater clarity, objectivity, and flexibility; were more competent and self-reliant and less socially conforming; and showed a greater capacity for directed action.

Vernon (1970, p. 233) claimed that the field dependence/field independence relationship appears to incorporate too many perceptual characteristics and personality qualities within a single dichotomous classification. She suggested that field dependence and independence be considered only one aspect of the manner in which people perceive and react to the environment. In fact, it has been included as one dimension in a broader classification, designed by Gardner and his colleagues (1961), called "cognitive control." They termed it "field articulation," and hypothesized that it appeared as selectiveness of attention, the capacity to direct attention appropriately to significant features of the field and to disregard irrelevant aspects. They also related field articulation to perceptual flexibility.

Another important type of cognitive control, independent of field articulation, was "extensiveness of scanning," the tendency to deploy attention broadly over a wide field, or to concentrate it narrowly on a small area. Gardner (1961)
indicated that a variety of tests in object perception show that greater width of scanning is related to perceptual accuracy. In relation to the concept of perceptual flexibility, it is interesting that Gardner and Moriarty (1968) related this variable, extensiveness of scanning, to another type of cognitive control, the "constricted-flexible," which operates in the inhibition of irrelevant motor responses, often necessitated in the process of perception.

An earlier suggestion by Klein (1951) was that two types of perception could be differentiated in several experimental settings, "sharpening" and "leveling." For example, in one experiment, subjects were presented with a series of squares of gradually decreasing size, one at a time, and required to judge the size of each one. After five squares had been presented, the smallest was removed, unknown to the subject, and a larger one was added. In this way the perceiver judged successive series of squares gradually increasing in magnitude. It was found that some subjects, the sharpeners, kept pace with the changes and judged the sizes of the squares accurately. Others, the levellers, responded slowly to the changes, lagged behind and progressively underestimated. It seems that they developed a stable preconceived notion of the range of sizes, and assimilated their subsequent percepts to this, rather than considering each stimulus on its own merit. Certainly, this perceptual typing seems related to the cognitive dimension of perceptual flexibility. Sharpeners
were able to adjust to new stimulus conditions and levellers were less able and therefore apparently more perceptually inflexible.

A fourth type of cognitive control was termed originally, by Klein and Schlesinger (1951), "form-bounded" versus "form-labile." Later it was called "tolerance of perceptual ambiguity" (Gardner & Moriarty, 1968). The more tolerant perceived apparent movement over a wider range of conditions in the perception of apparent movement phenomena. They also showed more imagination in responses to the Rorschach Test, whereas the less tolerant gave narrow and constricted responses limited to the more obvious characteristics of the ink-blots. Loomis and Moskowitz (1958) demonstrated a relationship between tolerance of perceptual ambiguity and the constricted-flexible cognitive control. They exhibited a series of pictures in which a sheep was gradually modified to a landscape. Those who had shown constricted control on the Color Word Test were less able than those with flexible control to see both the sheep and the trees of the landscape in the same picture. Constricted subjects tended to restructure the ambiguities of the picture into something more definite and meaningful. Again, perceptual flexibility seems to be related to perceptual accuracy.

Frenkel-Brunswik (1949) was the first to investigate this trait of perceptual tolerance of ambiguity in relationship to psychological adjustment. She studied children with
the focus on tolerance of ambiguity and found that the traits of "intolerance of ambiguity," "distortion of reality," and "rigidity" are related to ethnic prejudice. That is, intolerance of emotional ambiguity is related to intolerance of cognitive or perceptual ambiguity. The experimenter concluded that persons who are ethnically prejudiced and thus characterized as intolerant of ambiguity experience internal conflict which is so disturbing that external ambiguity is typically denied; perceptual distortion allows such persons to virtually shut out uncertainties. According to Frenkel-Brunswik (1949), perceptual/cognitive rigidity, therefore, produces maladaptive perseveration in problem-solving; narrow, one-dimensional interpretations of reality; and overall psychological maladjustment:

Whenever differentiation and adaptability to change are required, this adjustment will run the risk of breaking down. Basically, therefore, avoidance of ambiguity and related mechanisms, directed as they are toward a simplified mastery of the environment, turn out to be maladaptive in the end. (p. 135)

Ittelson and Kutash (1961) have supported this conclusion, suggesting, in fact, that the capacity to change one's perception, or perceptual/cognitive flexibility, is an overriding process which may be important in forming a workable, operational definition of mental health.

In keeping with this idea, several researchers have investigated the relationship of perceptual inflexibility and various forms of psychopathology. Ihilevich and Gleser...
(1971) researched the relationship between defense mechanisms and cognitive styles, finding that persons who exhibit less psychological or perceptual differentiation as a cognitive style rely on the global defense mechanisms (denial, repression, and hostility turned inward) as coping functions. Such defense mechanisms are primitive and often related to psychological maladjustment. Cameron (1951) examined the relationship between perceptual flexibility and behavior pathology, finding that delusional development and the formation of "pseudocommunities" is directly related to psychotic individuals' overwhelming need for perceptual stability, clarity, and definiteness. Restrictive and distotive perceptions develop into pseudocommunities in an attempt to destroy contradictions, complete the incomplete, and replace doubt with certainty. Ittelson and Kutash (1961) noted that previous studies have indicated that schizophrenic subjects show higher constancy in size-constancy experiments than do normals, also suggesting greater perceptual rigidity in schizophrenics compared to normals. Ittelson and Kutash explained this phenomenon by suggesting that schizophrenic subjects are more responsive to peripheral cues than are normals. Normally, we respond to those cues which are most appropriate to the task and tend to ignore those which are less appropriate. The evidence suggests that this ability is impaired in schizophrenics. It is interesting to note that, as previously discussed, Gardner (1961) labeled this capacity to
direct attention appropriately to the significant features of the field, field articulation, and related this ability to perceptual flexibility.

Klopfer (1946), in explaining the contaminated response on the Rorschach Test, which is indicative of schizophrenia, and Rapaport (1946), in explaining the clang association which is also common to schizophrenic behavior, agreed with the formulation that schizophrenics seem unable to ignore peripheral cues. Freedman (1974) also reported that schizophrenic subjects seem as sensitive to irrelevant, background stimuli as they are to relevant, foreground ones. Perhaps for this reason, Ludwig (1975) and Neale and Cromwell (1969) found that schizophrenics appear to function at an optimal level within a very narrow range of sensory stimulation.

Forgus and DeWolfe (1969) studied perceptual inflexibility with a schizophrenic population, finding empirical support for the notion that schizophrenic behavior may result primarily from a deficiency in cognitive schema for coding incoming stimuli. Without the cognitive flexibility required to make perceptual shifts and thus code relevant stimuli, schizophrenic subjects are not able to use much of the information that is potentially available to them. Thus, Forgus and DeWolfe concluded, "The poor judgment, the inadequate contact with reality, and the primary process thinking, all of which are diagnostic of schizophrenia, would be explained on the basis of a deficiency in cognitive models" (p. 291).
Yates and Korboot (1970) and Korboot and Yates (1973) have challenged the idea that schizophrenics are unable to exclude irrelevant incoming stimuli or that they are unable to code much of the relevant stimuli, asserting that schizophrenics cannot process relevant information fast enough. These experimenters believe that schizophrenics' cognitive functioning may be basically sound, but their perceptual assimilation rate is so slow that higher mental processes are deprived of an adequate supply of material to manipulate. Neale (1971) pointed out that this difficulty in processing information fast enough seems to occur when irrelevant cues are combined with relevant cues and discrimination is thus impaired.

Much of the recent research in the field of perception has emphasized the differential attention dispositions of schizophrenic subgroups, divided in terms of chronicity, premorbid adjustment, diagnosis, and medication. Such differences have been found over a wide variety of tasks: size estimation (Magaro, 1969); embedded figures (Magaro & Vojtisek, 1971; Vojtisek & Magaro, 1974); and form discrimination (Magaro, 1972). Schooler and Silverman (1969) suggested that perception provides a promising way to meaningfully account for variance among schizophrenics.

In spite of the variance among schizophrenic subgroups, it seems most important to recognize the differences in the perceptual functioning of individuals exhibiting psycho-
pathological behavior and individuals who appear more psychologically adjusted. It is very clear that schizophrenic individuals both attend to and order cues differently than psychologically normal individuals. Furthermore, the research findings consistently indicate that schizophrenic subjects do not have cognitive structures differentiated or flexible enough to efficiently or effectively use the information available to them through perception. Their psychological condition seems to be directly related to perceptual inflexibility, and thus, perceptual inaccuracies.

A specific form of perceptual inflexibility or the lack of perceptual openness, as described by the phenomenologists, is demonstrated by perceivers who approach stimuli with rigidly defined perceptual sets. Individuals who fear the experience of perceiving the external world as incongruent with their internal worlds can avoid such psychological threat by merely attending to only those cues which provide reassurance for their previously defined views of the world. Several researchers have validated the notion that extreme perceptual expectancies can direct selective attention to the degree that severe perceptual distortion is the result. The studies of Haley (1971), Heilbrun (1968), and Heilbrun and Norbert (1971) all resulted in supporting the conclusion that paranoia results from heightened sensitivity to threatening stimuli. The paranoid individual may in fact hold the fundamental belief that other human beings are not to be
trusted, that the external social world is very dangerous. Consequently, this individual may be constantly on guard or perceptually vigilant for cues which can validate this assumption. As Locascio and Snyder (1975) concluded, it is very biased perceptual input via selective attention which leads a person to form conclusions about the environment which appear as delusions to others. Forgus (1976) researched the area of perceptual selectivity in relation to hallucinatory and delusional behavior of schizophrenic patients and similarly concluded that it is a rigid cognitive or perceptual set which directs extreme perceptual selectivity and thus results in psychopathological behavior.

Petzel and Michaels (1973) pursued the idea that extreme perceptual selectivity is related to psychological maladjustment, finding that high-hostile subjects were significantly more vigilant for violent or aggressive stimuli than low-hostile subjects. Pliner (1973) and Schachter and Gross (1968) both confirmed the hypothesis that obese individuals also have a certain form of perceptual selectivity: They are much less affected by internal, physiological cues and more affected by external cues in their eating behavior than are individuals of normal weight. Miller and Seligman (1973) investigated the hypothesis that depressed subjects employ a different perceptual set than nondepressed subjects. The results confirmed the hypothesis: Depressed subjects tend to perceive reinforcement as more response independent than
do nondepressed subjects, and thus show less change in expectancy following reinforcement. Miller and Seligman pointed out, "Depression in this model is a specific cognitive distortion of the perception of one's own response to change the environment, rather than a general 'pessimism'" (p. 73).

Thus, it seems clear that cognitive rigidity and perceptual inflexibility foster both perceptual inaccuracies and psychological maladjustment. Conversely, cognitive complexity and perceptual flexibility appear related to both perceptual accuracy and psychological adjustment. This entire paradigm is affected by one other variable: the induction of psychological stress. Buhler (1961) and Roth (1961) studied the effects of experimentally induced stress in visual perception, finding that stressful conditions produced significant interference with subjects' perceptual discrimination. Block (1961) did a study of the effect of stress on resolving conflict between monocular and binocular cues using aniseikonic lenses and found that under stress, the group of anxious subjects showed significantly less perceptual flexibility, taking longer to resolve the conflict. Tuma (1975) found that perceptual defense and perceptual vigilance results from an interaction between personality differences and degrees of experimental stress. More specifically, Sappington (1973) found that process schizophrenics screen stimulus threat from awareness, while reactive schizophrenics are acutely attuned to stimulus threat. Ittelson and
Kutash's (1961) experimental results suggest that under a real-life stress situation, when a stimulus with which people have had similar past experiences is altered, there is a reliance on the perceptions which have grown out of past experience which manifests itself in a retarded reaction to change in the immediate external reality.

Two other experimental studies focused on the effects of psychological stress on the variable of perceptual flexibility. Beier (1949) administered a Rorschach test, a test of perceptual distortion, and a battery of tests measuring abstract ability to 62 female subjects. The experimental group was then subjected to induced psychological threat. When the experimental and matched control group were retested with tests of abstract reasoning, it was found that the experimental group showed a significant loss of abstract ability and an increase in rigidity of thinking and perception, as compared to the control group. Beier's conclusion is straightforward: Perceptual differentiation and flexible hypothesis formation are decreased under psychological threat. Minard and Mooney (1969) found that emotional arousal interferes with recognition of emotional stimuli in poorly differentiated subjects. The experimenters concluded that such interference in poorly differentiated subjects would interfere with recognition of emotional stimuli in active communication, producing a superficial and anxious quality of interactions with others. Thus, psychological differentiation

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is assumed to involve the separation of emotion from perception and is therefore related to perceptual accuracy, the ability to cope with psychological stress, and psychological adjustment.

Thus far, the review of literature indicates several conclusions. First, cognitive or perceptual flexibility appears to be necessary for accurate perception, for both efficient attending and organizing of the perceptual cues. Second, the ability to cope with stress non-defensively is related to accurate perception, obviating the need for perceptual distortion. Third, both of these variables, perceptual flexibility and the ability to cope with psychological stress, are necessary for maintaining psychological adjustment as well as accurate perception. Finally, considering the above analysis, it is apparent that psychological adjustment affects perceptual accuracy and, conversely, perceptual accuracy affects psychological adjustment.

Person perception and psychological adjustment. Person perception has been variously defined in the literature. Rogers and Truax (1966) have defined person perception as an interactional process in which one person becomes aware of the meaning and significance of another person's experience. Forgus and Melamed (1976) have suggested that it is coming to know the psychological characteristics of others through a process of verbal and nonverbal communication. Warr and Knapper (1968) proposed person perception was interpersonal.
interaction in which we come to know the internal states of another person. Tagiuri and Petrullo (1958) appear in agreement with these definitions with their definition being "observations about the internal events of another person, i.e., intentions, emotions and strengths" (p. x). Osgood (1953) defined person perception most explicitly and relevantly for the purposes of this study:

Social perception involves the organization of information about persons and the attribution of properties to them, often on the basis of only sketchy clues. These properties manifest constancy, in spite of observed variations, and are selectively attributed in the sense that they are influenced by the perceiver’s psychological states. The processes by which information is organized are flexible; the same body of information is subject to patterning in different ways. Thus, social perception refers to a set of processes that intervene between the presentation of information about a person and awareness of him. (p. 34)

As Osgood's definition suggests, person perception is a very complex cognitive process. While there are certain parallels between object perception and person perception, certain fundamental differences make the person perception process seemingly more complex than object perception. Rometveit (1960) attempted to explain such complexity in theoretical terms, suggesting that it is the investigator's inability to obtain accurate external and objective measurement of the stimulus-perceiver variables which makes person perception difficult to fully understand. He proposed what he called a "transactionalistic formula," which serves as a
compromise between Brunswik's (1949) "object attainment" model of perception and Kelly's (1955) "subjective categorization" model of perception. The formula may be defined as follows: \( P = f(O, E) \), the percept (P) being a function of the organism (O) and the environment (E); \( O \) represents the "unique internal characteristics of the individual organism"; \( E \) represents the "environmental influence, described in physicalistic terms" (Rommetveit, 1960, p. 138).

With this formula, Rommetveit suggested that we must assign more weight to the \( O \) factor as we move from stricter to less strict "physical order" in the stimulus event. That is, the internal characteristics of the organism play a more significant role as the stimulus target moves from object size to personality characteristics; the perceiver's individuality becomes more important as we move from object perception to person perception. Rommetveit suggested that this is because the organism compensates for lack of physical order by active, and idiosyncratic, categorization. As found in experiments in Gestalt psychology (Weintraub, 1966), when persons are presented with ambiguous and seemingly incomplete information, they experience anxiety, and in order to reduce the anxiety, they fill in the gaps of information by introjecting data from their own past experience. Bruner (1951) gave a similar interpretation: The less ambiguous the information, the less effect of past experience in confirming hypotheses and the greater use of input information.
Tagiuri and Petrullo (1958) pointed out three significant characteristics of person perception which contribute to the complexity of the process. First, person perceivers cannot rely on physical or directly observable stimuli to arrive at their percepts. A perceiver is forced to infer the attributes and qualities of another person from the appearance, motor behavior, and verbal behavior of the perceived. Second, a stimulus person may withhold valuable stimuli information from a perceiver by merely inhibiting certain behavior. Third, perceivers' ability to organize incoming stimulus information about other persons is limited by their own personal or vicarious experience.

In person perception, to a greater extent than in object perception, the attitudes, values, and beliefs of perceivers shape their perceptions. Secord and Backman (1964) and Bullmer (1975) have referred to the concept of implicit personality theory, suggesting that person perceivers generally have a relatively fixed set of biases in judging others. That is, person perceivers approach a stimulus person with pre-set notions as to what people are like, what men are like, what women are like, what redheads are like, and so forth. Obviously, such pre-set notions may be based on stereotyped thinking, trait attribution, and assumed similarity, which are all potential sources of error in person perception (Bullmer, 1975). Implicit personality theory affects the selection of cues that the perceiver will respond to, as
well as the way in which perceived traits will be conceptually organized.

Hamlyn (1957) suggested that the entire perceptual process is dependent upon stimulus discrimination. In addition to the influence of implicit personality theory, stimulus discrimination in person perception is greatly affected by the psychological needs and motives of the perceiver. Considering that we are social beings, other people are most often our sources of need satisfaction and are the ultimate source of social reinforcement. Thus, again perhaps more so than in object perception, we often see what we need to see in order to achieve our ends in interpersonal relationships. Allport (1961) discussed this phenomenon in terms of perceptual purpose: When we perceive another human being, we almost always do it with a purpose in mind. Consequently, we employ judgmental sets and often distort our perceptions in perceiving others. Rommetveit (1960) supported this conclusion with experimental findings: Perceivers spontaneously respond to certain dominant attributes in other persons, the dominance of the attribute being determined by its instrumental relevance to the perceiver. That is, an attribute X is selectively perceived to the extent to which "the individual's goal achievement in his environment is dependent upon discrimination of social events with respect to X" (p. 28).

Rommetveit identified two other significant characteristics of person perception which contribute to the complexity...
of the process. First, such spontaneous "sorting" of other persons on the basis of an attribute X is accompanied by relatively low recall of the X-relevant stimulus details, whereas the stimuli yielding information about an attribute which is not focused upon is recalled in more detail. Rommetveit (1960) reported that this finding was perhaps the most sensational outcome of his investigations: There was repeated demonstration of this phenomenon of "discrimination without awareness" (p. 72). Second, experimental results indicate that there is a positive correlation or correspondence between an individual's selective orientation toward an attribute X in the perception of other persons and the relative dominance of X in the perceiver's self (p. 74). Bullmer (1975) concurred with this finding: We look for those qualities in others that we tend to value highly in ourselves.

Clearly, person perception is a very individualistic cognitive process. All of the components of the process discussed above--ambiguous person stimuli, assumed similarity, implicit personality theory, perceptual purpose, the psychological needs of the perceiver--contribute to the great variability that can exist among the resultant percepts of different person perceivers. Variability certainly exists among the percepts of different perceivers in object perception, but as Bruner (1951) maintained, "It is perhaps in the perception of attributes of the social environment that
people differ most strikingly, for in this sphere hypotheses are strong, information is low grade, and adjustmental consequences serious" (p. 137).

Considering the complexity of the person perception process, it is no wonder that experimental investigation of the process is considered difficult. There seems to be a multitude of variables that still require examination before the process can be fully understood. A major focus of research effort since the early 1900's has been to study possible personality correlates of accurate person perception. A wide diversity of conclusions have been reached thus far, many of them questionable. Lake (1970) and Shrauger and Altocchi (1964) have even questioned the usefulness of finding personality correlates of the process of person perception. In spite of such skepticism, it seems important to review what theoretical and experimental results have been offered.

A classical line of research began with Adams (1927) when he asserted that real differences exist between those persons good at judging others and those who are good self judges. His research indicated that those who rate themselves well are more socially inclined; those who are good judges of others tend to be more antisocial. Estes (1938) followed with experimental findings which indicate that accuracy of judgments in person perception is found to vary with the judge, the subject, and the aspects of personality
being judged. Estes also found that judges who have strong esthetic interests are more successful than those whose dominant interests are science and philosophy. Taft (1955) continued the pursuit of what attributes are associated with the ability to judge others accurately. He concluded that good judges have particular attributes, such as self-insight, cognitive complexity, social skill, detachment, higher intelligence, an esthetic attitude, and intraceptiveness. Taft also concluded that the ability to judge others on analytic modes correlates positively with emotional adjustment. He interpreted this finding to mean that poor judges tend to be poorly adjusted, and thus, probably more likely to allow personal biases to affect their judgments. The findings of these three experimenters are continually referred to in contemporary person perception studies; however, both Shrauger and Altrocchi (1964) and Lake (1970) pointed out that there are serious difficulties with the criteria of accuracy used in these historical studies. Therefore, although these results seem very theoretically sound, they must be questioned.

Allport (1961, pp. 506-511) listed several qualifications of a good judge in person perception. First, he suggested that the good interpersonal perceiver has broad experience with human nature, stating that without this experience on the part of the perceiver, "the elementary basis for logical inference is lacking" (p. 507). As noted
previously, inference is an important skill in understanding people. Second, Allport noted that good person perceivers appear to have a high degree of accurate self-knowledge. As explained by Bullmer (1970b), such persons "are less likely to indulge in stereotyping and are more aware of the complexities, inconsistencies and uniqueness of the stimulus person" (p. 15).

Allport (1961) also noted that a positive correlation exists between superior intelligence and the ability to accurately perceive others. This conclusion is supported by Taft (1955) and Bullmer (1975). Closely related to intelligence as a characteristic of the good person perceiver is cognitive complexity, which seems closely related to perceptual/cognitive flexibility discussed at some length in the previous section. Beiri and his associates (1966) defined cognitive complexity as "the capacity to construe social behavior in a multi-dimensional way. . . . A more cognitively complex person has available a more differentiated system of dimensions of perceiving others' behavior" (p. 185).

Allport (1961) also considered detachment as a characteristic of the good judge. Related to similar findings of Taft (1955), Allport (1961) explained that what is involved here is a certain distance from others that permits an impartial, almost objective view (p. 509). Again, in agreement with Taft (1955), Allport (1961) listed intraceptiveness as a characteristic of the good person perceiver. As Bullmer
(1970b) explained, "The good person perceiver is concerned with the significance of subjective states, with inner feelings and meanings" (p. 16). Allport (1961) also concluded that the esthetic attitude is a characteristic of the really gifted person perceiver. An esthetic attitude involves the ability to comprehend the intrinsic unity of another, as well as the attributes, and to sense the dynamic relationship between them. Taft (1955) labeled this quality "sensitivity" (p. 10). Finally, Allport agreed with Taft in considering social skill and psychological adjustment important qualities of accurate person perceivers. As Bullmer (1970b) explained Allport's conclusion, "On the whole, they are free from neurotic disorders, and it seems reasonable to suppose that the well-adjusted individual has little need to project his own traits and values onto others" (p. 15). Thus, psychologically adjusted individuals may very well be in a better position to perceive another person objectively and clearly.

Quereshi, Leggio, and Widlak (1974) designed a study to investigate person perception as a function of three classes of biosocial attributes—age, sex, and intelligence. Results indicate that age differences are significant in accuracy of perceiving others; persons of high intelligence generally held others in low esteem; females had a tendency to rate others favorably; and females tended to be more discriminat­ing than males in judging others' unhappiness. Although
these results are interesting, they appear highly unreliable to this author. The methodology of Quereshi et al. (1974) involved subjects attributing predicted traits to significant others and famous people, which is obviously influenced by learned stereotypes, values, and pre-set notions, rather than requiring subjects to be affectively sensitive to others, basic to the process of person perception.

As mentioned previously, Frenkel-Brunswik (1949) studied the rigid, segmentary perceptual approach of the ethnically prejudiced and concluded that personalities may be categorized in terms of certain basic patterns: the authoritarian, rigid personality on the one hand and the flexible, tolerant personality on the other. She found that because of less perceptual tolerance for ambiguity in the rigid personalities, those personalities which are more flexible and perceptually open are less prone to ethnocentric attitudes. Thus, perceptual flexibility seems to relate to accuracy in person perception as well as in object perception. In keeping with this idea of perceptual flexibility, Vacchiano (1977) studied the personality variable, dogmatism, as defined by Rokeach (1960) with a variety of personality inventories. Vacchiano (1977) found that persons rated high on dogmatism (HD) showed low frustration tolerance, negative images of self and others, and strong conformist tendencies manifested in stereotyped thinking, inflexibility, and acceptance of established beliefs despite inconsistencies. Further findings indicated
that the HD experienced a greater degree of psychopathology, longer hospitalization, and poorer response to psychotherapy. Vacchiano suggested that LD's are better person perceivers than HD's. Again, perhaps it is perceptual flexibility which relates accuracy in person perception to psychological adjustment. Burke (1966) and Jacoby (1971) both found that LD's, or open-minded subjects, more accurately perceive the degree of dogmatism in others than HD's, or closed-minded subjects. Similarly, Masling, Johnson, and Saturansky (1974) found that male subjects who perceive many oral images on the Rorschach Test, and are thus judged as open, flexible, and not unduly defensive, are more accurate in perceiving other males than male subjects who perceive few oral images. Orality was found unrelated to accurate perception by males of females or to accuracy of females' interpersonal perception. Lake (1970) studied the relationship of Machiavellianism, the tendency to view others as impersonal objects and as objects for manipulation rather than as persons, and interpersonal perceptual accuracy. He found that the similarities in the way high and low Machs perceive others outweigh the differences.

Karp (1977) reviewed the literature dealing with the relationship between interpersonal perception and the perceptual variable, field dependence-independence. Of 16 studies of accuracy of perception of others, field independent (FI) perceivers were found more accurate in 7 studies, field
dependent (FD) perceivers more accurate in 1 study, and mixed results or no difference found in 8 studies. Yet, within this mixture of results appear some trends which seem to support Karp's (1977) hypothesis that when accuracy of the description of another person requires analytical ability, FI persons, who have better developed analytical abilities, tend to be more accurate. Where accuracy of description of others requires global concepts or impressions, FD persons tend to be more accurate. Bieri, Bradburn, and Galinsky (1958) and Shrauger and Altrocchi (1964) found that FI subjects tended to use internal constructs such as underlying motives or personality characteristics to describe persons to a significantly greater degree than FD subjects, who seemed to use external constructs such as activities and physical qualities. Nightingale (1971) found similar results: FD subjects more frequently responded to external and superficial qualities of the stimulus person than did FI subjects.

Phares and Wilson (1972) investigated the relationship of the personality variable, locus of control, and interpersonal perception. Locus of control refers to the degree to which an individual perceives events that happen to him or her as dependent on his or her own behavior (internal) or as the result of fate, luck, chance, or powers beyond one's personal control and understanding (external). Phares and Wilson suggested that internals and externals judge the
degree of responsibility of others in a manner similar to patterns they use in judging their own responsibility. Sosis (1974) and Hochreich (1972) conducted experiments similar to Phares and Wilson (1972), also finding that individuals tended to project their own locus of control beliefs onto the stimulus person. Scalese (1978) found the most significant results with regard to locus of control: Those persons with an internal locus of control are more accurate in interpersonal perception than those with an external locus of control.

Duckworth (1975), Vingoe and Antonoff (1968), and Wilson (1977) reported results which indicate that introverts are more accurate in judging personality characteristics of other people. Such results seem to be supportive of Allport's (1961) theory and Taft's (1955) results that what they called "intraceptiveness" is a related characteristic of the accurate person perceiver. Moreover, Duckworth (1975) found that among males, the ability of emotionally stable introverts to identify another person's feelings increased after emotionally provoking disagreements, while that of neurotic introverts decreased.

In summary, it has been established that the process of person perception is even more complex than that of object perception. This is true primarily because the person perceptual process is so directly affected by a perceiver's motives, psychological needs, and fixed set of beliefs about
what other human beings are like. Further, person perception is complicated by the fact that person perceivers are forced to infer the internal qualities of a stimulus person; direct observation of another person's feelings and meaning is most often not possible.

Review of the literature and research also indicates that several personality characteristics of the perceiver relate to accuracy in person perception. First, higher intelligence has been consistently correlated with person perceptual accuracy. Second, it has been demonstrated that good person perceivers are sensitive to and concerned with the subjective states of other people as well as of themselves. Third, good person perceivers appear to be perceptually field independent rather than field dependent. Finally, the good person perceiver may be characterized as open-minded and relatively nondefensive: Perceptual/cognitive flexibility is an important variable in perceptual accuracy.

Limited experimental focus has been given specifically to the relationship between interpersonal perceptual accuracy and psychological adjustment; however, the topic has been approached indirectly in a variety of ways. First, several researchers have studied the effects of self-esteem on interpersonal perception. The most consistent finding of such study, stated in general terms, is that a perceiver's level of self-esteem affects the esteem attributed to the stimulus.
person. Shrauger and Patterson (1974) and Halpern and Goldschmittle (1976) found that the dimensions deemed highly relevant for describing the self were used more frequently to describe others. Differences in the type of dimensions perceived as satisfactory were related to the self-esteem level of the perceiver. Stroebe, Eagly, and Stroebe (1974) found that another's behavior is interpreted by a perceiver as consistent with the self-concept of the perceiver; that is, high self-esteem subjects attributed positive evaluations more and negative evaluations less to the personal feelings of the stimulus person than did the low self-esteem subjects. Allen (1975) found that low self-esteem subjects were more perceptually sensitive to the dimension of acceptance-rejection in another, and were more likely to respond reciprocally than were high self-esteem subjects. Graham and Perry (1976) and Pollard (1974) found that the level of self-esteem affects one's willingness to derogate the stimulus person after a harmful act; persons of high self-esteem were less likely to derogate the "victim."

The second major approach of researching the relationship between interpersonal perception and psychological adjustment has focused on the effects of psychopathology in interpersonal perception. Williams and Cooper (1972) and Miller (1971) established the fact that diagnostic groups differ significantly in the consistency with which they perceive another's behavior or appearance. The conclusion that
diagnostic variance is reflected by perceptual variance was also supported by Papson and Hamersma (1974), who found that schizophrenic male self-perceptions and their perceptions of maternal figures varied significantly from the perceptions of normal males. Rogers and Stevens (1967) confirmed the hypothesis that schizophrenic clients are unable to accurately perceive the core conditions of a therapeutic relationship. Hayden, Nasby, and Davids (1977) and Reker (1974) studied groups of emotionally disturbed boys, finding that compared to normally adjusted boys, their subjects used significantly fewer dimensions in construing interpersonal situations and that these dimensions provided significantly less discrimination among varied social situations. Thus, as Kelly (1955) theorized, the degree of construct differentiation seems associated with the level of social adjustment. Interestingly enough, no differences were found between disturbed and normal boys in construing inanimate objects. Widom (1976) and Smith (1975) studied the interpersonal and personal construct systems of diagnosed psychopathic individuals. Smith (1975) hypothesized that since the psychopath is known to be a highly exploitative person who is adept at "sizing others up," people diagnosed as antisocial personality would be more accurate than would normals in person perception. Results indicated that antisocial males were not more accurate person perceivers, even when motivation was manipulated by offering a reward for accuracy. Widom (1976)
found that psychopathic individuals showed a significant degree of misperception about people in general and more specific misperception along the "dull-exciting" construct dimension. The results of these experiments are not surprising to this author: Although diagnosed psychopathic individuals may be more motivated to predict the behaviors of others, psychopathic individuals are known to be less affectively sensitive to others than healthy individuals and operate on very fixed and biased beliefs about what human beings are like.

The study of the relationship between interpersonal perceptual accuracy and psychological adjustment has also been approached by investigating how internal psychological states that are directly related to psychological adjustment affect interpersonal perception. Three such variables—psychological needs, emotional states, and psychological threat—have been examined. Cantor (1976) developed an inductive procedure used to relate individuals' perceptual dimensions to their principal needs, as indicated by projective and objective needs measures. Cantor concluded that perceivers can be considered continually evaluating others for compatibility: They tend to incorporate into their perceptual dimensions characteristics that make for compatibility, namely, ones reflecting their own attitudes and values (e.g., desire for achievement). By manipulating the emotional arousal of each subject, Schiffenbauer (1974)
investigated the effects of emotional arousal on interpersonal perception, confirming the hypothesis that subjects' own emotional states exert strong influence on their judgments of another's emotional state. Emotionally aroused subjects were more likely to attribute the emotion they were feeling and other similarly valenced emotion than were non-aroused or differently aroused subjects. Schiffenbauer further found that subjects' emotional states had an influence on the intensity of the emotion attributed to the stimulus person. Finally, Friend and Gilbert (1973) studied the effects of threat to one's self-regard by manipulating such threat, assessing subjects' scores on a fear of negative evaluation instrument, and measuring their locus of social comparison. Results indicated that threatened as compared with non-threatened subjects were: (1) less likely to compare themselves with "best-off" others; (2) more likely to compare with "worse-off" others; and (3) more likely to exhibit such effects when assessed high in fear of negative evaluation. One may conclude that perceived psychological threat, as well as fear of negative evaluation, affects interpersonal perception.

Several personality theorists have attempted to explain the relationship of psychological adjustment, perception, and the three variables (i.e., psychological needs, emotional arousal, and psychological threat) discussed above. Rogers (1951a) maintained that psychological maladjustment exists

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when the organism perceives threat and responds defensively by distorting or denying such perceived experience. Allport (1961) suggested that psychological maturity does not bend reality to fit one's needs and fantasies. Maslow (1962) discussed at length the difference between the self-actualized (growth-motivated) person and the maladjusted (deficit-motivated) person in terms of person perception. According to Maslow, the deficit-motivated person must see people only as need-gratifiers or as "sources of supply" (p. 33). They are not seen as wholes or as complicated individuals, but rather from the point of view of usefulness. As Maslow explained, "What is not related to the perceiver's needs is either overlooked altogether or else bores, irritates, or threatens" (p. 34). Only a self-actualizing, growth-motivated person is capable of objective, holistic, and accurate person perception (p. 85). In summary, both personality theories and experimental results support the conclusion that accuracy in interpersonal perception is disrupted by the very same variables which threaten psychological adjustment, that is, exaggerated psychological need, extended emotional arousal or anxiety, and perceived threat to one's self-regard.

Finally, a few researchers have directly examined the relationship between interpersonal perceptual accuracy and psychological adjustment. Matkom (1963) and Bach (1973) used similar research designs, dividing their subjects by different levels of adjustment and assessing their person
perceptual accuracy. Both researchers found that maladjusted subjects tended to exhibit suspiciousness towards others and thus perceived a greater discrepancy in others. Bach (1973) interpreted the maladjusted subjects' tendency to exhibit real extremes in their ratings of others as indication of their greater reliance on their own subjective feelings rather than on objective cues from the situation itself. Duckworth (1975) found that after emotionally provoking incidents, the ability of emotionally stable introverts to accurately perceive the emotional state of others increased, while that of neurotic introverts decreased. Vingoe and Antonoff (1968) attempted to differentiate good from poor judges of others on the basis of personality characteristics that indicate levels of psychological adjustment. Results indicated that good raters were significantly more tolerant and well adjusted, and significantly less neurotic and extroverted than poor raters. Hjelle (1968a) criticized the criterion for judgmental ability in the Vingoe and Antonoff (1968) study, and attempted improvement in his replication study. Hjelle (1968b) hypothesized that good judges compared to poor judges would score significantly higher on the California Psychological Inventory (CPI) scales of (1) Flexibility, (2) Good Impression, (3) Psychological-Mindedness, (4) Social Presence, (5) Tolerance, and (6) Well-Being. The study resulted in good judges scoring significantly higher on the Psychological-Mindedness, Tolerance, and Well-Being
scales. The other three scales were short of significance but in the direction predicted by the hypothesis. Hjelle (1968b) concluded that "good judges are responsive to subtle social nuances in others, possess a permissive and accepting social attitude structure, and are free of excessive complaints, worries and self-doubts" (p. 580).

Unfortunately, both Vingoe and Antonoff (1968) and Hjelle (1968b) evaluated person perceptual accuracy by requiring subjects to predict their roommates' answers on six scales of the CPI. The accuracy score was computed by the discrepancy between the subject's predicted response and the roommate's self-perceived response on each of these scales. This author questions the validity of the results of this procedure in evaluating accuracy of person perception. It seems that predicting another's response on a psychological inventory is somewhat different than being affectively sensitive to the feelings and meaning of another in the immediate present. However, it would seem that since Vingoe and Antonoff (1968) found significance on the Tolerance and Well-Being scales using female subjects and familiar targets, and Hjelle (1968b) found significance on the same two scales with male subjects and relative strangers as stimulus persons, tolerance and well-being may well be traits of good judges.

Thus, little research has been done to specifically investigate the relationship between interpersonal perceptual
accuracy and psychological adjustment. However, the research that has been done indicates that this relationship exists. Personality theories and experimental results support the conclusion that accuracy in interpersonal perception is disrupted by the very same variables which threaten psychological adjustment: exaggerated psychological need, extended emotional arousal or anxiety, and perceived threat to one's self-regard. Moreover, research indicates that certain personality characteristics (i.e., perceptual flexibility, sensitivity to others, tolerance of others, and emotional well-being) that are directly related to psychological adjustment are also related to accuracy in interpersonal perception.

Purpose of the Study

The purpose of this study is to examine the relationship between interpersonal perception and psychological adjustment. Specifically, it will examine the effect of improved interpersonal perceptual skill on subjects' level of psychological adjustment. Review of the literature indicates that the relationship between accuracy of object perception and psychological adjustment exists. The literature also suggests a relationship exists between accuracy of interpersonal perception and psychological adjustment; however, previous research studies have failed to define or evaluate accuracy of interpersonal perception as the immediate affective sensitivity to the feelings and meanings of others. Further, it
appears that an effort has not been made to improve subjects' interpersonal perceptual accuracy as a vehicle to improve their level of psychological adjustment. This study will employ such an approach.

**General Research Hypothesis**

It is hypothesized that interpersonal perception is related to psychological adjustment and that improvement of subjects' interpersonal perceptual skill will affect their level of psychological adjustment.

**Limitations of the Study**

One limitation of this study is that instruments available for measuring psychological adjustment are somewhat limited in their discriminative power and generalizability.

Another limitation that is recognized is that research in the field of perception has produced a multitude of variables that seem related to perceptual accuracy, personality dynamics, and psychological adjustment. Many of these variables have not been defined specifically enough to allow the reader an understanding of the relationship or possible congruency of one variable with another. Thus, it is difficult to interpret the results of one study with relationship to another. Such a reality may have limiting implications for the interpretation of the results of this study.

These limitations do not seem sufficient to prevent the study from being conducted as planned.
CHAPTER II

Method

Population and Sample

The population for this study was defined as all undergraduate students enrolled for classes at the University of Delaware for the Spring semester of 1978. Generally, these subjects can be described as men and women of above average intelligence, ranging in ages from 18 to 22 years old. The subjects represented class levels as well as a full range of college majors.

The sample for this study consisted of students enrolled in nine intact class sections: six sections of EDP 330 and three sections of COMM 100. It was not practical to use parts of each class group for different treatment conditions and, as a result, it was decided to administer different treatment conditions to independent sets of classes. The set designated as the treatment, or the experimental group, consisted of six EDP 330 intact class groups with enrollments of 11, 9, 12, 10, 7, and 12 students. The set of classes designated as the control, or the no treatment group, consisted of three COMM 100 intact class groups with enrollments of 29, 10, and 14 students.

Failure on the part of subjects to meet all experimental conditions resulted in the loss of 56 subjects from the study.
As a result of this subject attrition, the final experimental population was made up of class groups of 2, 5, 4, 3, 1, and 4 subjects in the treatment group and class groups of 25, 11, and 3 subjects in the control group. When combined, this produced totals of 19 subjects for the treatment group and 39 subjects for the control group.

Random Assignment

It is considered that the conditions for randomness have been met in this study. Although random assignment of subjects to classes and random assignments of classes to treatments were not achieved, the groups of subjects are considered sufficiently comparable for purposes of this study.

Both of the courses used to define the treatment and control groups of the study were elective courses that have been offered at the University of Delaware for several years. Thus, students had a choice as to whether they would take the courses. EDP 330 was chosen to define the treatment groups because it is offered by the Center for Counseling and thereby allowed the experimenter full flexibility in implementing the treatment plan. COMM 100 was chosen to define the control groups because several sections of the course have been consistently offered and filled, and because the course content seemed closely related to that of EDP 330. The similarity of course content was attractive in an attempt
to insure that students who would enroll in EDP 330 would not be significantly different in interests or motivation from students who would enroll in COMM 100.

According to Spence, Underwood, Duncan, and Cotton (1968) and Campbell and Stanley (1963), when an investigator must use subjects already organized into groups, statistical analysis of "intact groups" is employed. In such a case, the investigator must demonstrate that the groups are comparable for the purposes of the study by comparing the groups' performance before introducing the different conditions. Thus, in this study, pretests on all variables were administered to both groups and the mean scores of the two groups were compared, using the random groups $t$ test, to validate that the groups were sufficiently comparable (Appendix I).

Instructors for the class sections were not announced prior to registration so that students could not select a class on the basis of known characteristics, methods of instruction, or subject matter. Generally, the only basis for class selection was one of taking what was available.

EDP 330 instructors were assigned to classes in much the same manner as were the students. Assignments were made by the experimenter on the basis of when any two instructors had time available to meet with a class. COMM 100 instructors were assigned to classes by the communications department chairman on the same basis of time availability.
of the COMM 100 sections were chosen as control groups by the experimenter on the basis of instructors' willingness to allow their students to participate in the study.

According to Edwards (1968), a random sample of a population is "one obtained by a particular method that we believe introduces randomness in the selection of the observations" (p. 19). The particular method of selection and methods of statistical analysis used in this study would seem to insure the conditions of randomness.

Analysis of Subject Attrition

The problem of subject attrition in this study must be analyzed by considering separate groups of subjects. Loss of subjects from the control group may be attributed to the failure of some students to fulfill their commitment to the testing requirements. Three students from the treatment group also failed to complete all of the tests administered. Thirty-nine students of the original treatment group were dropped from the experimental sample because of their failure to meet the experimental condition of achieving at least 80-percent learning of the materials, which was assumed would lead to improvement of interpersonal perceptual accuracy.

In an effort to analyze the group of students who were dropped from the experimental group because of failure to meet the condition of proficiency, their pretest, posttest, and change scores were subjected to identical statistical
tests as were those scores of the remaining experimental group. Results of the statistical analyses are reported separately in Chapter III.

Criteria Instruments

Final Proficiency Test—Form 2. This instrument is part of the programmed text Improving Your Interpersonal Perceptual Skills (Bullmer, 1970a), and is considered a proficiency test for learners at the completion of the text The Art of Empathy. It is considered to measure learning of essential terms, concepts, and ideas presented in the text, and therefore it becomes a measure of the learner's proficiency. There are 30 responses called for on this instrument and each response is considered as an equal unit of measurement.

Affective Sensitivity Scale. This instrument was developed as part of the Studies in Human Interaction Project conducted by Kagan and Krathwohl (1967) at Michigan State University.

The scale is considered to be a measure of the subject's sensitivity to the affective state of another individual. Subjects view a series of videotaped excerpts from actual counseling interviews and are then asked to respond by selecting from three possible responses the response which best represents their perception of the feelings expressed by the client during the final moments of the scene. In this
study, the scale is used to appraise the accuracy of the subject's perception of the meaning and feelings of others.

Form B of the scale was used in this study. It consists of 66 multiple choice questions and the time required for administration is 50 minutes. The reliability of the instrument is reported as .70 to .80 for the items over a 2-week interval. Validity is rated at .75 (Campbell, 1971; Danish & Kagan, 1971).

California Psychological Inventory (CPI). This instrument was developed by Gough (1957) to assess those personality characteristics deemed important for social living and social interaction in subjects that are considered "normal" (non-psychiatrically disturbed). According to Gough, the variables identified by the CPI are "hypothesized to be relevant to the prediction and understanding of interpersonal behavior in any setting, culture, or circumstance" (p. 5). For purposes of this study, 6 of the 18 CPI scales were chosen to measure psychological adjustment. In this study, the term psychological adjustment refers to an internal sense of well-being rather than externally observable behaviors regarded as adaptive. Thus, the following scales were selected because of their focus on intrapersonal rather than interpersonal characteristics: (1) Self-Acceptance (Sa) scale, which is designed to assess factors such as sense of personal worth, self-acceptance, and capacity for independent thinking and action; (2) Sense of Well-Being (Wb), to
identify persons who minimize their worries and complaints, and who are relatively free from self-doubt and disillusionment; (3) Responsibility (Re), to identify persons of conscientious, responsible, and dependable disposition and temperament; (4) Tolerance (To), to identify persons with permissive, accepting, and non-judgmental social beliefs and attitude; (5) Flexibility (Fx), to indicate the degree of flexibility and adaptability of a person's thinking and social behavior; and (6) Femininity (Fe), to assess attributes such as patience, helpfulness, sincerity, being respectful and accepting of others.

Reliability studies report that the test-retest correlations on all six scales range between .61 and .87. Exceptions to this range have occurred in individual studies in which the Flexibility scale was rated .49 and the Femininity scale was rated .59. Evidence of the construct validity of the CPI is drawn from cross-validational studies of each individual scale. The Self-Acceptance scale was studied with an assessment sample of 70 medical school applicants and Sa correlated +.32 with staff's rating of "self-acceptance." In an assessment sample of 40 undergraduate students, Sa correlated -.57 with the staff's Q-sorting of the phrase "has a readiness to feel guilty." In a study comparing 915 psychiatric patients' scores with 2,800 college students' scores on the Sense of Well-Being scale, significant differences were found between the samples (p < .01) in support of
the scale's validity. In an assessment sample of 40 graduate students, Re correlated +.38 with staff ratings of "responsibility." In studies using high school students as subjects, principals were asked to nominate the "most" and "least" responsible students, the "best citizens" and the "disciplinary problems." Statistical analysis of the results supports the validity of this scale. In a sample of 100 military officers, To correlated -.46 with the California F (Fascism: authoritarian personality) scale; in a sample of 419 college students, To correlated -.48 with the California F scale. In two separate studies using graduate students as subjects, Fx correlated -.48 and -.36 with staff's rating of "rigidity." In a study of 180 undergraduate students, Fx correlated -.58 with the California F (authoritarian personality) scale. In a sample of 152 adult males, Fe correlated -.41 with the masculinity scale of the Strong Vocational Interest Blank and +.43 with the Mf (feminine interests) scale of the Minnesota Multiphasic Personality Inventory. In a sample of 45 college females, scores on Fe correlated +.38 with peer nominations on "femininity"; in a sample of 41 college males, Fe scores correlated -.48 with peer nominations on "masculinity."

Multiple Affect Adjective Check List (MAACL). This instrument was developed by Zuckerman and Lubin (1965) to provide valid measures of three of the clinically relevant negative affects: anxiety, depression, and hostility. The
MAACL is a list of 132 adjectives that describe different kinds of moods and feelings. Subjects in this study were instructed to mark in the boxes beside the words that described how they had been feeling "generally in the last week." The instrument seldom required more than 5 minutes to administer. Zuckerman and Lubin's research has established the internal consistency of the instrument to be quite high with most reliability coefficients in the .65 and .92 range. Test-retest reliability was found to be high at a 7-day interval with most reliability scores ranging from .68 to .84. One study found exceptions to this range, finding reliability scores of .15 and .21. Much of the research done to establish the validity of the MAACL has compared scores on the instrument's three scales with affect ratings made by clinicians observing their patients. Most of the correlations between affect ratings and MAACL scales range from .44 to .64. Several studies (Lieberman, 1965; Winter, Ferreira, & Ransom, 1963; Zuckerman, 1960; Zuckerman et al., 1964) have established the sensitivity of the MAACL to the effects of examination anxiety, hypnosis, and drugs on subjects which supports the instrument's usefulness in measuring states of anxiety, hostility, and depression.

Criteria Measurements

All subjects received pretreatment and posttreatment administrations of the Affective Sensitivity Scale, the
California Psychological Inventory, and the Multiple Affect Adjective Check List. In addition, experimental subjects received a posttreatment administration of the Final Proficiency Test.

**Procedures**

All subjects of both experimental and control groups were requested to give their written consent to participate in the study by signing the appropriate Informed Consent forms (see Appendix II). The participating subjects were then administered the battery of pretreatment measures, which included the Affective Sensitivity Scale, the California Psychological Inventory, and the Multiple Affect Adjective Check List, during the first two class sessions of the semester. The experimenter, rather than class instructors, administered the tests to all class sections to insure uniform testing conditions. Record of student participation was kept not only for purposes of the study but to enable the instructors to evaluate their students on the basis of fulfilling course requirements. Subjects did not receive any information relative to the nature of the research until after the posttreatment testing sessions. During the next six class sessions, material designed to ameliorate interpersonal perceptual skills was presented to the experimental group. The control group subjects attended their classes in the communications department without receiving the
material to improve perceptual accuracy. The eighth and ninth class sessions were devoted to administering the Affective Sensitivity Scale, the California Psychological Inventory, and the Multiple Affect Adjective Check List again to all subjects. The experimental subjects were also administered the Final Proficiency Test. Upon completion of all test administrations, the experimenter visited each of the experimental and control group class sections and shared with the subjects the purpose of the study and its rationale, as well as solicited subjective feedback from them about their experiences as being participants in the study. EDP 330 instructors were given Affective Sensitivity Scale results to share with their students. Also, arrangements were made with the Center for Counseling to provide test interpretations for those students who requested feedback on their performance on the psychological adjustment measures.

**Treatment Conditions**

A major consideration in this study was the development of a treatment to improve interpersonal perceptual accuracy, since it would not be possible to test the general research hypotheses unless a group of subjects could be produced who demonstrated a positive change in interpersonal perceptual accuracy. Bullmer (1972) has demonstrated that use of the programmed text *The Art of Empathy* is effective for improving interpersonal perceptual accuracy. Thus, a training program
was developed which used Bullmer's programmed text (1975) in combination with didactic presentations and experiential exercises. It was felt that this program would significantly improve perception for a large number of the subjects.

As a treatment condition, subjects were required to achieve at least 80-percent proficiency on the Final Proficiency Test at the conclusion of the training program. As discussed previously, it was assumed that most subjects who were able to demonstrate proficiency of the text material would also show significant improvement on their Affective Sensitivity Scale scores. Motivation to learn the material was an important concern since it was assumed that if subjects did not learn, they would not meet the experimental requirement of proficiency and would therefore be lost. Regrettably, it was the tradition for the EDP 330 classes that learning was not a condition for receiving a passing grade. Attendance was the only requirement. Consequently, student motivation to fully benefit from the training program could not be controlled.

Training Program

The training program for the experimental group consisted of six 90-minute class sessions of instruction on interpersonal perception. These six class sessions were preceded by two class sessions devoted to the course orientation and administration of the pretreatment instruments.
The six training sessions were followed by two class sessions for administration of the posttreatment instruments. The remaining five class sessions of the 14-week semester focused on communication skills. (See Course Syllabus, Appendix III.)

Bullmer's *The Art of Empathy* (1975), a programmed text specifically designed to improve accuracy of interpersonal perception, was used as the text for the course. Research has demonstrated that subjects who learn an average of 85 percent of the material in the book significantly improve their scores on a test of interpersonal perception (Bullmer, 1972). The book is designed so that students will learn a single principle, concept, or idea at a time. There are six units in the book and each unit deals with one such principle or idea. The format of the training program followed the format of the book.

The first training session focused on Units I and II of the text, designed to provide knowledge concerning the nature of interpersonal perception and the common causes of errors that occur when an individual makes inferences concerning others. The second training session dealt only with the concept of implicit personality theory, attempting to help students define their own implicit personality theories and possible biases or prejudices within them. The third session focused on the topic of emotions—how to define or describe them, and then how to identify them. Session four dealt with the concept of hidden meaning in communication, and focused
specifically on the notion of anxiety and the use of defense mechanisms. Session five presented the idea of "listening with understanding" or the perceptual approach to understanding others. The sixth and final training session was a structured review of the preceding material, directed toward aiding the students in integrating their new learning.

Each of the class sessions was structured to include three elements: didactic presentation of the text material, discussion of the material and its application, and experiential exercises to enable further integration of learning (see Lesson Plans, Appendix IV). Exceptions to this class structure were session two and session six, both of which were devoted entirely to discussion. Class sessions were designed carefully to obviate extended opportunity for self-disclosure on the part of the subjects or any psychotherapeutic intervention on the part of the instructors. It was thought that such therapeutic activities might affect subjects' psychological adjustment, and thereby contaminate the results of the study. Subjects were required to fulfill a variety of homework assignments: Read The Art of Empathy and complete the quizzes at the end of each unit; write papers explaining their own implicit personality theories; keep personal journals for purposes of self-analysis in interpersonal perception; and practice the new perceptual skills acquired in the training sessions. Subjects were told that the purpose of instruction was to improve their
interpersonal perceptual accuracy.

Each class section of EDP 330 had 2 instructors who were randomly drawn from a group of 12 volunteer graduate students from the master's program in counseling at the University of Delaware. These 12 graduate students received the same training during the winter semester as they were to administer to the undergraduate students spring semester. The experimenter trained the graduate students, attempting to model the type of teaching that would be appropriate for them to employ. The only difference between the experimental training program and the training program for the instructors was that the latter was held within a 2-week time period, the sessions being held three times a week rather than once a week. The graduate students were given both a pretest and a posttest on the Affective Sensitivity Scale to insure that they had significantly improved their interpersonal perceptual accuracy (see Results). The instructors were kept blind to the research hypotheses. They were told, as were the subjects, that the purpose of instruction was to improve interpersonal perceptual accuracy. During the spring semester, the experimenter supervised the instructors 1 hour per week to insure their complete understanding of the material and standardization of their teaching methods.

Research Design

The research in this study was conducted in a pretest-posttest control group design to study change within each
of the treatment groups and to compare the differences between the two groups. The experimental group was subject to the treatment of training to improve interpersonal perceptual accuracy. The control group did not receive this treatment. Both groups received pretreatment and posttreatment administrations of the Affective Sensitivity Scale, the California Psychological Inventory, and the Multiple Affect Adjective Check List. This design is presented in schematic form in Table 1.

Table 1

Pretest-Posttest Control Group Design

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest</th>
<th>Treatment</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T₁, T₂, T₃</td>
<td>X₁</td>
<td>T₁, T₂, T₃</td>
</tr>
<tr>
<td>2</td>
<td>T₁, T₂, T₃</td>
<td>X₂</td>
<td>T₁, T₂, T₃</td>
</tr>
</tbody>
</table>

Note. T₁ = Affective Sensitivity Scale.
T₂ = California Psychological Inventory.
T₃ = Multiple Affect Adjective Check List.
X₁ = Interpersonal perception training.
X₂ = No treatment.

Statistical Hypotheses

The original research question postulated that a relationship exists between interpersonal perception and psychological adjustment. It is also hypothesized that improvement
in interpersonal perceptual accuracy will produce positive change in psychological adjustment. The following hypotheses are formulated from this basic question and are presented here in the null form.

**Hypothesis One.** There will be no relationship between subjects' pretreatment Affective Sensitivity Scale scores and their pretreatment scores on the Multiple Affect Adjective Check List and the selected scales of the California Psychological Inventory (i.e., Sa, Wb, Re, To, Fx, and Fe).

**Hypothesis Two.** There will be no difference between the change scores of the group which improved interpersonal perceptual accuracy and the group which did not improve interpersonal perceptual accuracy on the Multiple Affect Adjective Check List and the selected scales of the California Psychological Inventory.

**Statistical Analysis**

According to the suggestions of Spence et al. (1968) and Kerlinger (1973) concerning the nature of data, the measurements for this study should be considered interval, and as such, parametric statistics may be used. After considering alternative procedures suggested for analysis for the random assignment of intact classrooms to treatments (Campbell & Stanley, 1963; Lindquist, 1953), it was determined that pooling data for groups within treatment sets offered the best opportunity for meaningful analysis.
Preliminary analyses were performed to ascertain the appropriateness of pooling data in this manner. Computer analysis was employed for these analyses using the Western Michigan University ADVAOV analysis of variance program for one-way designs to test for differences of scores on the Affective Sensitivity Scale, the California Psychological Inventory, and the Multiple Affect Adjective Check List for class groups within treatment sets (Appendix V).

The significance of Pearson product moment correlations between pretreatment scores on the Affective Sensitivity Scale and the pretreatment scores on the Multiple Affect Adjective Check List and the selected scales of the California Psychological Inventory was used as the criterion to test Hypothesis One. The Western Michigan University CORL program for computer analysis was employed.

The second focus of the study was to study the changes in psychological adjustment that would occur as a consequence of improvement in interpersonal perceptual accuracy. The most commonly used change analysis is an analysis of variance on the raw gain scores. In spite of Kerlinger's (1973) suggestion that unreliability is associated to the raw gain score, the differences in the treatment group's and the control group's gain scores on the Affective Sensitivity Scale, the Multiple Affect Adjective Check List, and the California Psychological Inventory selected scales were tested by analysis of variance. As described previously (see Subject
Attrition), the original experimental group was separated into two groups: those subjects who achieved proficiency on the Final Proficiency Test, and those subjects who failed to achieve proficiency. Thus, the data were entered into the computer in the form of three groups: the true experimental group who achieved proficiency on the Final Proficiency Test, the non-experimental group who failed to achieve proficiency, and the control group. Consequently, analysis of variance was used to test differences in gain scores among the three groups. As stated previously, only the results between the experimental group and the control group are relevant to the purposes of this study. Thus, two sample t tests of gain scores were then employed to determine the differences on the Affective Sensitivity Scale, the Multiple Affect Adjective Check List, and the California Psychological Inventory selected scales between the experimental group and the control group. Analysis of the results of the non-experimental group who failed to achieve proficiency of the course material is considered separately.

Further analysis of the results was accomplished by examining the change scores within groups. As recommended by Gough (1978) and Glass and Stanley (1970), the correlated or dependent-groups t test was employed to determine statistical significance of individual sets of change scores within groups. The Western Michigan University MAOV program for computer analysis was used, and the significance level of .05 was established for rejection of the null hypotheses.
CHAPTER III

Results

The purpose of this study was to examine the relationship between interpersonal perceptual accuracy and psychological adjustment. It was hypothesized that a relationship between interpersonal perceptual accuracy and psychological adjustment exists, and that improving subjects' interpersonal perceptual accuracy would produce positive change in their psychological adjustment. Data gathered for the purposes of testing these hypotheses and their analyses are presented in this chapter.

The Data and Their Analyses

To ascertain the appropriateness of pooling data for class groups within treatment sets prior to their analyses, preliminary statistical tests were made. The analysis of variance was performed on the scores for the pretreatment and posttreatment Affective Sensitivity Scale, Multiple Affect Adjective Check List, and selected scales of the California Psychological Inventory for class groups within each treatment set. Differences between the classes within sets were not significant at a low probability level (p < .05). (See Appendix V for data and their analyses.)
These results were interpreted as indicating that obtained differences between treatments after pooling data would be due to the effects of the treatment rather than to treatment plus unique effects of intact class experience. In other words, it could be concluded that the performance of all subjects in all groups reflected only general variability plus the effects of the treatment and that the effects of extra class experience were negligible.

**Hypothesis One.** There will be no relationship between subjects' pretreatment Affective Sensitivity Scale scores and their pretreatment scores on the selected scales of the California Psychological Inventory and the Multiple Affect Adjective Check List.

In order to test this hypothesis, Pearson product moment correlation coefficients were computed using pretreatment scores on the Affective Sensitivity Scale and the pretreatment scores on the selected scales of the California Psychological Inventory (Sa, Wb, Re, To, Fx, Fe) and the Multiple Affect Adjective Check List for the total sample of subjects. These data are summarized in Table 2.

As indicated in Table 2, the correlation between pretreatment scores on the Affective Sensitivity Scale and pretreatment scores on the Responsibility (Re) scale of the California Psychological Inventory was found to be significant. All other correlations were not significant at the .05 level. Thus, the null hypothesis may not be rejected.
Table 2

Means, Standard Deviations, and Correlation Coefficients for Pretreatment Scores on the Affective Sensitivity Scale and Pretreatment Scores on Scales of the California Psychological Inventory and the Multiple Affect Adjective Check List for All Subjects

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Mean</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Sensitivity Scale</td>
<td>30.094</td>
<td>5.327</td>
<td></td>
</tr>
<tr>
<td>California Psychological Inventory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sa scale</td>
<td>22.463</td>
<td>3.389</td>
<td>.011</td>
</tr>
<tr>
<td>Wb scale</td>
<td>32.536</td>
<td>5.529</td>
<td>.150</td>
</tr>
<tr>
<td>Re scale</td>
<td>25.463</td>
<td>4.948</td>
<td>.205*</td>
</tr>
<tr>
<td>To scale</td>
<td>18.705</td>
<td>4.926</td>
<td>.181</td>
</tr>
<tr>
<td>Fx scale</td>
<td>11.568</td>
<td>3.456</td>
<td>.093</td>
</tr>
<tr>
<td>Fe scale</td>
<td>21.705</td>
<td>4.488</td>
<td>.151</td>
</tr>
<tr>
<td>Multiple Affect Adjective Check List</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety scale $(M_1)$</td>
<td>8.042</td>
<td>4.163</td>
<td>-.009</td>
</tr>
<tr>
<td>Depression scale $(M_2)$</td>
<td>15.383</td>
<td>7.417</td>
<td>.007</td>
</tr>
<tr>
<td>Hostility scale $(M_3)$</td>
<td>9.276</td>
<td>4.513</td>
<td>.041</td>
</tr>
</tbody>
</table>

Note. $n = 95$.

*$_{p < .05}$.

Hypothesis Two. There will be no difference between the change scores of the group which improved interpersonal perceptual accuracy and the group which did not improve interpersonal perceptual accuracy on the selected scales of the California Psychological Inventory and the Multiple Affect Adjective Check List.
Table 3, Table 4, and Table 5, respectively, show the obtained results from pretreatment and posttreatment measures on the Affective Sensitivity Scale, selected scales of the California Psychological Inventory, and the Multiple Affect Adjective Check List for both experimental and control groups.

Table 3

Means and Standard Deviations for Pretreatment and Posttreatment Scores on the Affective Sensitivity Scale for Experimental and Control Groups

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Control Group&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretreatment</td>
<td>Posttreatment</td>
<td>Pretreatment</td>
</tr>
<tr>
<td>$\bar{X} = 32.368$</td>
<td>$\bar{X} = 38.263$</td>
<td>$\bar{X} = 28.385$</td>
</tr>
<tr>
<td>SD = 5.489</td>
<td>SD = 3.969</td>
<td>SD = 5.838</td>
</tr>
<tr>
<td></td>
<td>$\bar{X} = 29.717$</td>
<td>SD = 5.185</td>
</tr>
</tbody>
</table>

<sup>a</sup> $n = 19$.
<sup>b</sup> $n = 39$.

In order to test Hypothesis Two, three separate analyses of the data were required. First, distinction needed to be made as to which group improved interpersonal perceptual accuracy and which group did not improve interpersonal perceptual accuracy. A two-sample $t$ test was used to determine differences in the change scores on the Affective Sensitivity Scale between the experimental and control groups. The results of the test indicate that such differences were significant. Thus, the experimental group may be considered
Table 4
Means and Standard Deviations for Pretreatment and Posttreatment Scores on Selected Scales of the California Psychological Inventory for Experimental and Control Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group$^a$ Treatment</th>
<th>Control Group$^b$ Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Sa</td>
<td>$\bar{X} = 22.737$</td>
<td>$\bar{X} = 22.000$</td>
</tr>
<tr>
<td></td>
<td>SD $= 4.080$</td>
<td>SD $= 3.349$</td>
</tr>
<tr>
<td>Wb</td>
<td>$\bar{X} = 33.105$</td>
<td>$\bar{X} = 33.684$</td>
</tr>
<tr>
<td></td>
<td>SD $= 5.040$</td>
<td>SD $= 6.146$</td>
</tr>
<tr>
<td>Re</td>
<td>$\bar{X} = 27.579$</td>
<td>$\bar{X} = 28.842$</td>
</tr>
<tr>
<td></td>
<td>SD $= 5.092$</td>
<td>SD $= 5.145$</td>
</tr>
<tr>
<td>To</td>
<td>$\bar{X} = 19.474$</td>
<td>$\bar{X} = 20.578$</td>
</tr>
<tr>
<td></td>
<td>SD $= 4.937$</td>
<td>SD $= 5.388$</td>
</tr>
<tr>
<td>Fx</td>
<td>$\bar{X} = 12.158$</td>
<td>$\bar{X} = 13.315$</td>
</tr>
<tr>
<td></td>
<td>SD $= 3.640$</td>
<td>SD $= 3.559$</td>
</tr>
<tr>
<td>Fe</td>
<td>$\bar{X} = 21.368$</td>
<td>$\bar{X} = 22.789$</td>
</tr>
<tr>
<td></td>
<td>SD $= 3.467$</td>
<td>SD $= 3.189$</td>
</tr>
</tbody>
</table>

$^a_{n} = 19.$
$^b_{n} = 39.$

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Table 5
Means and Standard Deviations for Pretreatment and Posttreatment Scores on the Multiple Affect Adjective Check List for Experimental and Control Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group&lt;sup&gt;a&lt;/sup&gt; Treatment</th>
<th>Control Group&lt;sup&gt;b&lt;/sup&gt; Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>M&lt;sub&gt;1&lt;/sub&gt;</td>
<td>$\bar{X} = 7.211$</td>
<td>$\bar{X} = 9.526$</td>
</tr>
<tr>
<td></td>
<td>$SD = 5.181$</td>
<td>$SD = 4.005$</td>
</tr>
<tr>
<td>M&lt;sub&gt;2&lt;/sub&gt;</td>
<td>$\bar{X} = 13.158$</td>
<td>$\bar{X} = 15.894$</td>
</tr>
<tr>
<td></td>
<td>$SD = 8.119$</td>
<td>$SD = 7.430$</td>
</tr>
<tr>
<td>M&lt;sub&gt;3&lt;/sub&gt;</td>
<td>$\bar{X} = 9.368$</td>
<td>$\bar{X} = 10.842$</td>
</tr>
<tr>
<td></td>
<td>$SD = 4.787$</td>
<td>$SD = 5.080$</td>
</tr>
</tbody>
</table>

<sup>a</sup>&nbsp;<sub>n = 19</sub>.

<sup>b</sup>&nbsp;<sub>n = 39</sub>.

The group which improved interpersonal perceptual accuracy; the control group may be considered the group which did not improve interpersonal perceptual accuracy. Data supporting this conclusion are summarized in Table 6.

The second step of testing Hypothesis Two required computing two-sample t tests to determine differences in the change scores on the selected scales of the California Psychological Inventory and on the Multiple Affect Adjective Check List for the experimental and control groups. The
Table 6

Two-Sample t Test of Change Scores on the Affective Sensitivity Scale for Experimental and Control Groups

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Control Group</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Score Mean</td>
<td>Change Score Mean</td>
<td></td>
</tr>
<tr>
<td>5.895</td>
<td>1.333</td>
<td>-2.928*</td>
</tr>
</tbody>
</table>

Note. df = 56.

*p < .01.

results indicate that the differences between the change scores for the experimental and control groups were significant on the Re, Fx, and Fe scales of the psychological adjustment measures. The obtained results are shown in Table 7.

In order to complete the testing of Hypothesis Two, correlated t tests were computed to determine the significance of individual sets of change scores within groups on all three instruments: the Affective Sensitivity Scale, the selected scales of the California Psychological Inventory, and the Multiple Affect Adjective Check List. The results indicate that the experimental group changed significantly in the positive direction on the Affective Sensitivity Scale and on the Re, Fx, and Fe scales of the California Psychological Inventory. The control group changed in the negative direction on the same three scales of the
Table 7
Two-Sample t Tests of Change Scores on the Selected Scales of the California Psychological Inventory and the Multiple Affect Adjective Check List for Experimental and Control Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sa</td>
<td>-0.737</td>
<td>-0.256</td>
<td>.488</td>
</tr>
<tr>
<td>Wb</td>
<td>0.579</td>
<td>-0.538</td>
<td>-0.749</td>
</tr>
<tr>
<td>Re</td>
<td>1.263</td>
<td>-1.205</td>
<td>-2.895*</td>
</tr>
<tr>
<td>To</td>
<td>1.105</td>
<td>-0.462</td>
<td>-1.177</td>
</tr>
<tr>
<td>Fx</td>
<td>1.158</td>
<td>-0.692</td>
<td>-3.041*</td>
</tr>
<tr>
<td>Fe</td>
<td>1.421</td>
<td>-1.308</td>
<td>-3.800*</td>
</tr>
<tr>
<td>M1</td>
<td>2.316</td>
<td>.590</td>
<td>-1.189</td>
</tr>
<tr>
<td>M2</td>
<td>2.737</td>
<td>.189</td>
<td>-1.064</td>
</tr>
<tr>
<td>M3</td>
<td>1.474</td>
<td>.789</td>
<td>-0.440</td>
</tr>
</tbody>
</table>

Note. df = 56.

*p < .01.
California Psychological Inventory (Re, Fx, and Fe). Thus, although there were significant changes on several scales, Hypothesis Two as stated may not be rejected. The data which support this conclusion are summarized in Table 8.

Table 8

Correlated t Tests of Change Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Experimental and Control Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group</th>
<th>t Values</th>
<th>Control Group</th>
<th>t Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASS</td>
<td></td>
<td>4.809**</td>
<td></td>
<td>1.468</td>
</tr>
<tr>
<td>Sa</td>
<td></td>
<td>-0.946</td>
<td>-0.448</td>
<td></td>
</tr>
<tr>
<td>Wb</td>
<td></td>
<td>.359</td>
<td>-0.784</td>
<td></td>
</tr>
<tr>
<td>Re</td>
<td></td>
<td>2.100*</td>
<td>-2.330*</td>
<td></td>
</tr>
<tr>
<td>To</td>
<td></td>
<td>.850</td>
<td>-0.677</td>
<td></td>
</tr>
<tr>
<td>Fx</td>
<td></td>
<td>2.587**</td>
<td>-1.902</td>
<td></td>
</tr>
<tr>
<td>Fe</td>
<td></td>
<td>2.927**</td>
<td>-2.965**</td>
<td></td>
</tr>
<tr>
<td>M₁</td>
<td></td>
<td>1.864</td>
<td>.725</td>
<td></td>
</tr>
<tr>
<td>M₂</td>
<td></td>
<td>1.390</td>
<td>.136</td>
<td></td>
</tr>
<tr>
<td>M₃</td>
<td></td>
<td>1.062</td>
<td>.925</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

**p < .01
Additional Analyses

As discussed previously, the original experimental group was separated into two groups: those subjects who achieved proficiency on the Final Proficiency Test and those subjects who failed to achieve proficiency. Thus, the data were entered into the computer in the form of three groups: the true experimental group who achieved proficiency on the Final Proficiency Test, the nonexperimental group who failed to achieve proficiency, and the control group. Although inclusion of the data from this nonexperimental group is not directly relevant to the purposes of the study, interesting results were found and should be reported.

Analysis of variance was used to test differences in the change scores among the three groups. Two-sample \( t \) tests were then computed to analyze the significance of differences between each combination of two groups. Results indicate that the nonexperimental group's change scores were significantly different from those of the true experimental group on the Affective Sensitivity Scale, on the Fx and Fe scales of the California Psychological Inventory, and on the \( M_1 \) and \( M_2 \) scales of the Multiple Affect Adjective Check List. Although the nonexperimental group deviated from the control group on two scales—Re of the CPI, and \( M_2 \) of the MAACL—much more similarity existed between the nonexperimental group and the control group than between the nonexperimental group and the true experimental group. Data to support this conclusion are reported in Table 9 and Table 10.

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Table 9

Analysis of Variance of Change Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Experimental, Nonexperimental, and Control Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>Nonexperimental Group</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Change Score Mean</td>
<td>Change Score Mean</td>
<td>Change Score Mean</td>
<td></td>
</tr>
<tr>
<td>ASS</td>
<td>5.895</td>
<td>1.333</td>
<td>2.162</td>
<td>*</td>
</tr>
<tr>
<td>Sa</td>
<td>-0.737</td>
<td>-0.256</td>
<td>0.028</td>
<td>NS</td>
</tr>
<tr>
<td>Wb</td>
<td>0.579</td>
<td>-0.538</td>
<td>-0.500</td>
<td>NS</td>
</tr>
<tr>
<td>Re</td>
<td>1.263</td>
<td>-1.205</td>
<td>0.778</td>
<td>**</td>
</tr>
<tr>
<td>To</td>
<td>1.105</td>
<td>-0.462</td>
<td>0.722</td>
<td>NS</td>
</tr>
<tr>
<td>Fx</td>
<td>1.158</td>
<td>-0.692</td>
<td>-0.333</td>
<td>*</td>
</tr>
<tr>
<td>Fe</td>
<td>1.421</td>
<td>-1.308</td>
<td>-0.444</td>
<td>**</td>
</tr>
<tr>
<td>M₁</td>
<td>2.316</td>
<td>0.590</td>
<td>-1.118</td>
<td>*</td>
</tr>
<tr>
<td>M₂</td>
<td>2.737</td>
<td>0.189</td>
<td>-4.405</td>
<td>**</td>
</tr>
<tr>
<td>M₃</td>
<td>1.474</td>
<td>0.789</td>
<td>-0.973</td>
<td>NS</td>
</tr>
</tbody>
</table>

Note. df = 91.

NS p > .05.

*p < .05.

**p < .01.
Table 10

Two-Sample t Tests of Change Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Experimental, Nonexperimental, and Control Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group/Control Group</th>
<th>t Values</th>
<th>Control Group/Nonexperimental Group</th>
<th>t Values</th>
<th>Experimental Group/Nonexperimental Group</th>
<th>t Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASS</td>
<td>-2.004**</td>
<td>-0.621</td>
<td></td>
<td></td>
<td></td>
<td>2.275*</td>
</tr>
<tr>
<td>Sa</td>
<td>0.537</td>
<td>-0.384</td>
<td></td>
<td></td>
<td></td>
<td>-0.843</td>
</tr>
<tr>
<td>Wb</td>
<td>-0.836</td>
<td>-0.035</td>
<td></td>
<td></td>
<td></td>
<td>0.796</td>
</tr>
<tr>
<td>Re</td>
<td>-2.856**</td>
<td>-2.777**</td>
<td></td>
<td></td>
<td></td>
<td>0.554</td>
</tr>
<tr>
<td>To</td>
<td>-1.299</td>
<td>1.188</td>
<td></td>
<td></td>
<td></td>
<td>0.313</td>
</tr>
<tr>
<td>Fx</td>
<td>-2.819**</td>
<td>-0.662</td>
<td></td>
<td></td>
<td></td>
<td>2.242*</td>
</tr>
<tr>
<td>Fe</td>
<td>-3.990**</td>
<td>-1.528</td>
<td></td>
<td></td>
<td></td>
<td>2.691**</td>
</tr>
<tr>
<td>M_1</td>
<td>-1.273</td>
<td>-1.502</td>
<td></td>
<td></td>
<td></td>
<td>2.474*</td>
</tr>
<tr>
<td>M_2</td>
<td>-1.090</td>
<td>2.386*</td>
<td></td>
<td></td>
<td></td>
<td>3.056**</td>
</tr>
<tr>
<td>M_3</td>
<td>-0.456</td>
<td>1.428</td>
<td></td>
<td></td>
<td></td>
<td>1.622</td>
</tr>
</tbody>
</table>

Note. df = 91.

*p < .05.

**p < .01.
Correlated $t$ tests were computed to determine the significance of change scores within this nonexperimental group. Results indicate that this group significantly improved on the Affective Sensitivity Scale and on the Depression scale ($M_2$) of the Multiple Affect Adjective Check List. The data are summarized in Table 11.

Table 11
Correlated $t$ Tests of Change Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Nonexperimental Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>$t$ Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASS</td>
<td>2.130*</td>
</tr>
<tr>
<td>Sa</td>
<td>.064</td>
</tr>
<tr>
<td>Wb</td>
<td>-0.803</td>
</tr>
<tr>
<td>Re</td>
<td>1.479</td>
</tr>
<tr>
<td>To</td>
<td>1.246</td>
</tr>
<tr>
<td>Fx</td>
<td>-0.770</td>
</tr>
<tr>
<td>Fe</td>
<td>-1.193</td>
</tr>
<tr>
<td>$M_1$</td>
<td>-1.552</td>
</tr>
<tr>
<td>$M_2$</td>
<td>-3.364**</td>
</tr>
<tr>
<td>$M_3$</td>
<td>-1.174</td>
</tr>
</tbody>
</table>

* $p < .05$.
** $p < .01$.

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Discussion

Hypothesis One dealt with the relationship between interpersonal perceptual accuracy and psychological adjustment; the null hypothesis predicted that no such relationship exists. Product moment correlation coefficients were computed for all subjects' prescores on the instrument designed to assess interpersonal perceptual accuracy, the Affective Sensitivity Scale, and on the selected scales of the instruments used to measure psychological adjustment, the California Psychological Inventory and Multiple Affect Adjective Check List. Results indicate that the null hypothesis should not be rejected.

Hypothesis Two dealt with the idea that improving subjects' interpersonal perceptual accuracy would also improve their levels of psychological adjustment. The null hypothesis, of course, predicted that improving subjects' interpersonal perceptual accuracy would have no effect on their levels of psychological adjustment. Two-sample t tests of the change scores on the Affective Sensitivity Scale indicate that the experimental group subjects significantly improved their interpersonal perceptual accuracy; control group subjects did not improve. Two-sample t tests of the change scores on the Multiple Affect Adjective Check List and the selected scales of the California Psychological Inventory indicate that there were significant differences between the experimental and control groups on three scales of the
Further, correlated t tests of the change scores within the experimental group and within the control group indicate that on these same three scales, the experimental group subjects significantly improved their scores and the control group changed their scores in the negative direction. In addition, the correlated t tests indicate that the experimental group changed in the negative direction on the Anxiety scale (M₁) of the Multiple Affect Adjective Check List. That is, the experimental group subjects apparently experienced more anxiety as a result of the treatment.

Although the results do not allow Hypothesis Two to be rejected, it is clear that improving subjects' interpersonal perceptual accuracy can affect improvement of their levels of psychological adjustment. As noted above, the experimental group, the group which improved interpersonal perceptual accuracy, not only had change scores which significantly deviated from the control group on three scales of the California Psychological Inventory, but improved significantly on these three scales.

Hopefully, examination of the meaning of each of these three scales will be helpful in interpreting the meaning of the statistical results. The first scale that requires examination is the Responsibility (Re) scale of the California Psychological Inventory. As mentioned previously, the experimental group improved significantly on this scale as
a result of the treatment. That is, improving subjects' interpersonal perceptual accuracy affected improvement in their sense of responsibility. Gough (1975) defined the purpose of this scale as follows: "to identify persons of conscientious, responsible, and dependable disposition and temperament" (p. 10). Gough suggested that high scorers on this scale tend to be "planful, responsible, thorough, progressive, capable, dignified, and independent; as being conscientious and dependable; responsible and efficient; and as being alert to ethical and moral issues" (p. 10). He described low scorers as "immature, moody, lazy, awkward, changeable, and disbelieving; as being influenced by personal bias, spite, and dogmatism; and as under-controlled and impulsive in behavior" (p. 10).

From Gough's descriptions, it seems that subjects who score higher on the Responsibility scale of the California Psychological Inventory are more responsible, more emotionally stable, less influenced by personal bias and/or dogmatic thinking, and basically more independent than those subjects who are low scorers. Such characteristics are obviously related to psychological adjustment. It must be explained, however, why improving subjects' interpersonal perceptual accuracy would result in their becoming more responsible, as defined by Gough.

As noted previously, the experimental treatment consisted of six didactic training sessions, the content of
which was based on The Art of Empathy (Bullmer, 1975). The treatment was designed to provide subjects with basic information about motivation of human behavior, the meaning of emotions, and how human beings must often defend against anxiety and thus interject hidden meaning and affect in their communication with others. The subjects were taught to listen objectively for the true meaning of the other person; to perceive others without being influenced by personal bias, dogmatic thinking, and/or assumed similarity. They were given a reliable method by which to perceive others more accurately. No longer were they forced to rely on social dogma, prejudice, stereotyping, lack of understanding, or even the face-value acceptance of another's words as his/her real meaning, in order to make judgments of others. In essence, the results suggest that the training to improve interpersonal perceptual accuracy provided the subjects with the necessary information and perceptual skills to perceive more accurately and thus relate to others more independently. They were enabled to rely on their own perceptions of others and events with more confidence and sense of inner control, and thus deal with others more responsibly. In this way, improving subjects' interpersonal perceptual accuracy improved their levels of psychological adjustment.

It is interesting to speculate that this trait of responsibility, as measured by the California Psychological Inventory (Gough, 1975), is related to two other personality
characteristics, cited in the review of literature, which apparently correlate with perceptual accuracy. Witkin (1954) hypothesized that personalities could be typed field independent and field dependent, depending upon their general modes of perceiving. He described field independent persons as those who rely on their internal feelings and convictions, whereas the field dependent are people who are greatly affected by standards derived from environmental pressures. Witkin also noted that the field independent seemed to be more self-confident, more socially independent, more able to know and accept themselves and to analyze their perceptual performance than the field dependent. Witkin's description of the field independent seems very comparable to Gough's (1975) description of the responsible. It seems possible that the training to improve interpersonal perceptual accuracy used in this study actually affected this dimension of field dependence-independence in the subjects, causing them to be more field independent and thus more psychologically adjusted, as measured by the Responsibility scale of the California Psychological Inventory.

The second personality characteristic that seems related to Gough's trait of responsibility is locus of control, the degree to which individuals perceive personal events as dependent on their own behavior (internal) or as the result of fate, luck, chance, or powers beyond their personal control and understanding (external). As noted in the review
of literature, Scalese (1978) found that individuals with internal locus of control are more accurate in interpersonal perception than those with external locus of control. It appears that Gough's (1975) definition of responsibility also has some similarity to that of internal locus of control: Both traits characterize individuals who rely on internal perceptions and beliefs rather than those who feel helpless and dependent on external forces to direct their behavior. Thus, whether called responsibility, field independence, or internal locus of control, it appears that subjects who rely on their own internal experience to shape their reality are both more accurate in interpersonal perception and more psychologically adjusted.

The second scale on which the experimental group subjects significantly improved as a result of the experimental treatment was the Femininity (Fe) scale of the California Psychological Inventory. Gough stated that the purpose of this scale is "to assess the masculinity or femininity of interests" (p. 11). It is unfortunate that Gough resorted to classical sex role stereotypes in order to label this scale. His descriptions of high and low scorers on the Femininity scale are indeed different, but his categorization of them as "feminine" and "masculine" is needless. Gough described the feminine person as "appreciative, patient, helpful, gentle, moderate, persevering, and sincere; as being respectful and accepting of others; and as behaving
in a conscientious and sympathetic way" (p. 11). His description of the masculine individual has been given in much more negative terms: "hard-headed, . . . masculine, active, robust, and restless; as being manipulative and opportunistic in dealing with others; blunt and direct in thinking and action; and impatient with delay, indecision, and reflection" (p. 11). It appears to this author that Gough (1975) was characterizing the person with "feminine interests" as an emotionally stable individual who is sensitive to the needs and feelings of others. In contrast, the individual with "masculine interests" appears to be less psychologically healthy, unable to deal with ambiguity in the external environment, and certainly less sensitive, if not insensitive, to the needs and feelings of others.

If these definitions are kept in mind, rather than the false dichotomy of feminine-masculine, it is understandable why the subjects of the experimental group scored significantly higher on this scale as a result of the training to improve interpersonal perceptual accuracy. The focus of accurate interpersonal perception is given to the needs, feelings, and meaning of other people. Thus, it is logical that the good person perceiver would be more sensitive to the needs and feelings of others than the less accurate person perceiver. Allport (1961), Bullmer (1970b), and Taft (1955) all have theorized that good person perceivers are sensitive to and concerned with the subjective states of other people.
as well as of themselves. The results of this study support their conclusions.

Gough's (1975) definitions also suggest that the higher scorer on the Femininity scale is more able to deal with uncertainty and ambiguity in the external environment than is the low scorer. This ability may be called perceptual flexibility, which has been discussed extensively in the review of literature in relation to perceptual accuracy. Elliott (1961), Frenkel-Brunswik (1949), Gardner and Moriarty (1968), and Klein and Schlesinger (1951) each labeled this differently (e.g., tolerance of perceptual ambiguity, form-lability, extensiveness of scanning), but they all seemed to be discussing the same concept. They all agreed that the ability to deal effectively with new, incongruous, or ambiguous stimuli contribute to perceptual accuracy.

Allport (1961), Combs (1962), Frenkel-Brunswik (1949), Maslow (1954), and Rogers (1951a) related perceptual flexibility to psychological adjustment. They have all maintained, each in his/her own theoretical terms, that psychologically healthy persons experience relative freedom from psychological threat and therefore have no need to distort or to deny their perceptions in order to defend against anxiety. Healthy persons are able to be open to any and all aspects of reality; their perceptual fields are maximally open. The fear of experiencing incongruency between the external world and the needs, wishes, and beliefs of their internal worlds

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does not restrict their perceptual sets nor hamper their ability to perceptually organize complex cues. Flexibility replaces rigidity in perceptual functioning.

Maslow (1954) explained this phenomenon very well, stating that since, for healthy people, the unknown is not frightening, "they do not neglect the unknown, or deny it, or run away from it, or try to make believe it is really known, nor do they organize, dichotomize, or rubricize it prematurely" (p. 206). Maslow maintained that healthy people can be comfortably vague, doubtful, uncertain, indefinite, and approximate. Moreover, he theorized, they often are even more attracted by the unknown than by the known: "They not only tolerate the ambiguous and unstructured; they like it" (p. 205). Perceptual flexibility allows psychologically healthy individuals to actually enjoy the mysteries of life.

As stated previously, the subjects of the experimental group in this study also significantly improved on the Flexibility (Fx) scale of the California Psychological Inventory. Gough (1975) designed this scale "to indicate the degree of flexibility and adaptability of a person's thinking and social behavior" (p. 11). He described the low scorer on this scale as "deliberate, cautious, worrying, industrious, guarded, mannerly, methodical, and rigid"; high scorers were described as "insightful, informal, adventurous, confident, and humorous" (p. 11). Although this scale measures flexibility in thinking, rather than in perception, thinking
and perception are obviously related. Both are interdependent cognitive processes which directly affect the way a human being feels and behaves. Ellis (1962) maintained, in fact, that none of the four fundamental life operations—sensing, moving, emoting, and thinking—is experienced in isolation: "They are integrally interrelated and never can be seen as wholly apart from each other" (p. 39). Thus, it seems reasonable to assume that the experimental treatment in this study, which directly confronted rigid, stereotyped thinking and introduced the reality of ambiguity in person perception, affected the perceptual/cognitive structures of the experimental subjects, producing both perceptual and cognitive flexibility. Such flexibility in both perceiving and thinking subsequently contributed to both improved interpersonal perceptual accuracy and improved psychological adjustment.

At this point in the discussion, it seems important to note that the control subjects changed on the very same three scales of the California Psychological Inventory that the experimental subjects showed significant change. However, the control subjects changed in the negative direction. As shown in the Results section, the control subjects scored lower on the posttest administration of the Responsibility, Femininity, and Flexibility scales of the California Psychological Inventory than they did on the pretest: Re, $p = .025$; Fx, $p = .065$; Fe, $p = .005$. It is difficult to interpret
this unusual finding, considering that all of the factors which might have jeopardized the internal validity of the research design seemed to be controlled for in its conception. Three possibilities will be considered. First, it is possible that there were substantial differences in the histories of the experimental and control group subjects, which could explain why the two groups changed significantly on these three scales in opposite directions. Although possible, this seems unlikely: Both groups were composed of undergraduate students who were enrolled in similar courses during the same semester and were administered pre- and post-tests at the same times. Neither group reported any significant influence external to the study that might have affected their test results. Second, in one study, the test-retest reliability coefficients of the Femininity and Flexibility scales were reported to be fairly low. Perhaps these scales are too unreliable to serve as instruments from which to draw conclusions. Third, there is certainly the possibility that for all subjects, the passing of time from the beginning of the semester to the middle of the semester, with the concomitant pressures to perform well academically, could have been sufficient cause to demonstrate less sense of responsibility for self, less sensitivity to others, and less flexibility in thinking on the posttest than on the pretest. This third possibility seems most likely and implies that only because of improved perceptual accuracy,
treatment subjects improved on these scales.

To return to the analysis of the experimental group's performance, one other interesting finding was that the experimental subjects changed ($p = .079$) in the negative direction on the Anxiety ($M_1$) scale of the Multiple Affect Adjective Check List as a result of the experimental treatment. This is not surprising considering the previous discussion of perceptual/cognitive flexibility. As noted above, the experimental treatment directly confronted rigid, stereotyped thinking, introduced the ambiguities of the perceptual process, and apparently produced significant change in the perceptual/cognitive structures of the experimental subjects. It seems reasonable to assume that the subjects' level of anxiety would be raised as a result. No longer would their previous set of beliefs and biases be intact to reduce perceptual ambiguity; no longer would rigid thinking or rigid perceptual organization be available to defend as effectively against anxiety. It is understandable, therefore, that the subjects' newly developed capacity to be open to ambiguity would arouse anxiety.

It is hypothesized that the anxiety reaction on the part of the experimental subjects was temporary. As discussed in Chapter II, the posttests of all instruments were administered immediately after the 6-week experimental treatment. This would be just the time that one might expect the subjects' anxiety level to be the highest. Their previous
systems of thought and perception had been disturbed. Moreover, although they had been given information by which to restructure their cognitive styles, at this point, the subjects had had little time to operationalize their new learning in interpersonal relationships. That is, at the time of posttesting, the subjects had experienced cognitive change but had not yet generalized it to their behavior. Thus, they had not yet received appropriate reinforcement from others for their new perceptual approach and understanding. It seems reasonable to speculate that once this had occurred, the subjects would feel more comfortable with their new skills and their anxiety would be reduced. It is for that reason that the second half of the semester was devoted to improving the subjects' communication/relationship skills. Unfortunately, no follow-up testing was done to test these predictions.

It is interesting that the improvement of interpersonal perceptual accuracy affected the improvement of only the more cognitive components of psychological adjustment. That is, the experimental treatment positively changed the subjects' thinking rather than the way they felt. The affective states of depression and hostility were unaffected and the more emotionally determined states of well-being and self-acceptance were not improved as a result of the interpersonal perception training. The didactic training program was designed to affect cognitive change, rather than affective
change, based on the belief that cognition determines both emotion and behavior (Ellis, 1962). Furthermore, Frank (1973) has shown that affective change is often easier to achieve than cognitive or behavioral change, but often is merely temporary. It is hypothesized that the experimental treatment of this study not only had a therapeutic effect on the subjects, but a more long-lasting one than if only affective change had been achieved.

To summarize thus far, it is apparent that three personality traits which characterize psychological adjustment—sense of responsibility for self, sensitivity to others, and flexibility in thinking—are related to interpersonal perceptual accuracy. Moreover, the experimental results have indicated that improving accuracy in interpersonal perception can produce positive change in these three areas of psychological adjustment. The results also indicate that subjects' level of anxiety may be raised, hopefully temporarily, as a result of such change. The results are not inconsistent with the predictions made by previous research and personality theory. The relationship between interpersonal perception and psychological adjustment has been hypothesized by others: This study offers substantial evidence of its existence.

It should be noted in interpreting these results that the methodology of this study is an improvement over methods used to study accuracy in interpersonal perception in previous studies. The review of literature has indicated that
interpersonal perceptual accuracy has been consistently appraised in very indirect ways. Even as early as 1955, Taft had great difficulty in drawing conclusions from his review of literature related to accuracy in interpersonal perception. He complained that a wide variety of tests had been used to assess the ability to judge others, and that there was very low consistency between the tests. Lake (1970) agreed that researching the area of person perception is very difficult. He concluded that accuracy in interpersonal perception has typically been measured in two ways, both of which have serious shortcomings: (1) the comparison between subjects' predictions of how a stimulus person will fill out an inventory and how the person actually fills it out, and (2) the comparison between the subjects' description of the stimulus person and the mean of all of the subjects' descriptions of that person. Lake (1970) explained that the first method involves the contamination of response sets and the influence of unknown factors that mediate responses to an inventory. With the second method, there is the effect of regression to the mean, so that the person with the highest accuracy score is the one who most accurately judges the responses of the judging group. Taft's (1955) discouragement was expressed ominously: "The research on accuracy is simply a minefield of artifacts and errors which is, for even the most intrepid and optimistic investigator, reason to tread cautiously, if not to become immobilized. And there is
evidence that immobilization is present" (p. 7).

It is believed that such pitfalls in the research of accuracy in interpersonal perception were avoided in this study. As described previously, the method of assessing perceptual accuracy in this study was the administration of the Affective Sensitivity Scale. This instrument does not involve subjects' predictions of another's response to an inventory, nor does it require that any subject's score be compared to the average of the other subjects' scores. The Affective Sensitivity Scale is a highly validated and straightforward instrument. Subjects view a series of videotaped excerpts from actual counseling interviews and are then asked to respond by selecting from three possible responses the response which best represents their perception of the feelings expressed by the client during the final moments of the scene. The scale is considered a good instrument to appraise the accuracy of a subject's perception of the meaning and feelings of others. The stimulus persons are presented to the subjects in a very controlled and standardized fashion, and the subjects are required to respond with immediate affective sensitivity. This latter condition is critical because the definition of interpersonal perception is the process by which an individual senses and understands the meaning and feelings of others. Accuracy in interpersonal perception, therefore, involves accurate sensing and understanding of others—not the prediction of
their future behavior.

Another factor which distinguishes this study from previous research is that the experimental design included a treatment to improve interpersonal perceptual accuracy. The research hypotheses, therefore, were not limited merely to the prediction of a relationship between certain personality traits and interpersonal perception, as had been done in previous research studies. Hypothesis One of this study predicted the relationship between interpersonal perception and psychological adjustment; Hypothesis Two went beyond this idea of relationship and predicted that improving interpersonal perceptual accuracy would produce improvement of psychological adjustment. Thus, the results of this study are not dependent only upon correlational methods. Not only is this a unique feature of the design of this study, but an advantageous one. As reported previously, no significant results were found by using correlational methods to test the first hypothesis; fortunately, Hypothesis Two extended the scope of the study and testing it provided important information that would not have been obtained otherwise.

It is curious that no significant correlations were found between the subjects' scores on the Affective Sensitivity Scale and their scores on the psychological adjustment measures; yet, analysis of variance of the subjects' change scores on all instruments showed that improvement of subjects' interpersonal perceptual accuracy produced significant
improvement of their levels of psychological adjustment. In other words, the first statistical analysis would indicate that there is no relationship between interpersonal perception and psychological adjustment; the second analysis indicates that such a relationship does exist. A possible interpretation for these discrepant findings is that the relationship between interpersonal perception and psychological adjustment is only apparent and/or measurable for subjects who are significantly above or below average in their accuracy of interpersonal perception. For those subjects who are average or below average in their accuracy of interpersonal perception, no relationship was found when correlation coefficients were computed for all subjects' scores on all of the instruments; however, when the scores on the psychological adjustment measures were analyzed for those subjects who significantly improved their interpersonal perceptual accuracy, the relationship between interpersonal perception and psychological adjustment was validated.

Finally, a comparative analysis of the statistical results of all three groups (i.e., experimental, nonexperimental, and control) of the study reveals very interesting findings. First, on the Affective Sensitivity Scale, it is clear that the experimental group changed the most, the control group the least, and the nonexperimental group an intermediate amount; all, however, changed in the positive direction on this scale. On the California Psychological...
Inventory, this same trend continues but is even more significant considering the differences in the direction of change. The experimental group changed in the positive direction on all scales except the Self-Acceptance scale; the control group changed in the negative direction on all scales. If placed on a continuum of positive and negative values, once again the nonexperimental group change score means would consistently fall between those of the experimental group and the control group. This trend alters considerably on the Multiple Affect Adjective Check List. Analysis of the change score means reflects that the experimental group experienced an increase of anxiety, hostility, and depression as a result of the treatment; the nonexperimental group exhibited a decrease of all three emotions; and the control group showed a moderate increase of all three—less than that of the experimental group, more than the nonexperimental group.

To summarize these trends very simplistically, it may be concluded that the experimental group improved their interpersonal perceptual accuracy and their psychological adjustment, but experienced an increase of negative affect as a result of the experimental treatment. The control group changed very little in interpersonal perceptual accuracy, changed in the negative direction on the scales measuring psychological adjustment, and experienced a very moderate increase of negative affect during the time period of the
experimental treatment. The nonexperimental group shows more overall similarity to the control group than to the experimental group. More specifically, the nonexperimental group's change score means fall between those of the experimental group and the control group on the scales measuring both interpersonal perceptual accuracy and psychological adjustment. Curiously, the nonexperimental group shows a decrease of negative affect as a result of their incomplete experience with the experimental treatment.

Implications

This study has demonstrated that the relationship between interpersonal perception and psychological adjustment exists. More specifically, it has been shown that improving interpersonal perceptual accuracy can improve psychological adjustment. This relationship has been hypothesized many times in previous research and theory. This study is the first to have used a valid method of measuring accuracy in interpersonal perception and then to have confirmed that, indeed, accuracy in interpersonal perception is related to psychological adjustment.

The belief that it is possible to improve subjects' accuracy in interpersonal perception is a relatively new and not widely publicized idea. Bullmer (1970b) was the first to challenge the belief that good person perceivers are born, not made, by developing his programmed text and then
reporting research results which clearly indicate that the
text is useful to improve subjects' accuracy in interpersonal
perception. Since then, training to improve interpersonal
perceptual accuracy has been typically used in counselor
education programs: It is well established that good thera­
pists must be accurate person perceivers.

Based on the results of this study, it is proposed that
training to improve interpersonal perceptual accuracy has a
much broader application than merely therapist training. It
has been validated that training to improve interpersonal
perceptual accuracy can improve psychological adjustment.
This training, therefore, would have use in a variety of
clinical populations, outside of an academic setting, in
order to improve clients' psychological adjustment.

It has been well validated that effective psychotherapy
involves the facilitation of perceptual change for the client.
Curran (1945), Rogers (1951b), Sheerer (1949), and Snygg and
Combs (1949) have all maintained that a necessary component
of effective psychotherapy is assisting clients to improve
the accuracy of their perceptions of self, others, and events
in their external environment. Ittelson and Kutash (1961)
asserted that perceptual change is the sine qua non of
therapy; psychotherapy may be conceptualized as a progressive
sequence of perceptual changes. Ittelson and Kutash claimed,
in fact, that the focus of therapy should be on inappropriate
modes of perceiving, not on inappropriate modes of behaving.
They maintained that changing perceptions brings about changing ways of behaving. In keeping with the experimental finding of this study that the training to improve interpersonal perceptual accuracy produces increased perceptual flexibility on the part of the subjects, it is interesting to note that Dunker (1945) asserted that the change from perceiving elements as rigid and fixed to perceiving them as "loose" or changeable is one of the most important types of differentiation which occur in therapy.

The similarities between psychotherapy and the training to improve interpersonal perceptual accuracy are obvious. It has been shown that both forms of intervention can produce changes in perceptual flexibility, perceptual accuracy, and psychological adjustment. Two implications result from this conclusion: (1) A systematic, didactic training program which is designed to deliver new information to subjects, but is not designed to deal with the affective states of the subjects, can have a significant therapeutic effect within a relatively short time period; and (2) it is perhaps even more evident to psychotherapists that their effort to improve the accuracy of their clients' perceptions is critical to improving their psychological adjustment.

Prior to closing this discussion, three recommendations for future research are suggested. First, an item analysis should be done for several scales of the California Psychological Inventory, certainly the ones considered in this
study. As pointed out in the preceding discussion, the scales of Responsibility, Femininity, and Flexibility all seem to measure personality characteristics which are very closely related to, if not synonymous with, other variables which have been cited in the literature as related to both perceptual accuracy and psychological adjustment. The plethora of terms used by various authors is quite confusing when careful analysis results in the belief that they may all be discussing the same variables, but assigning them different labels. Second, a follow-up study to this study should be done to determine if, in fact, the increase of negative affect for the experimental subjects was temporary. Third, the use of training to improve interpersonal perceptual accuracy should be explored with other populations. It has been shown that it is effective in improving undergraduate students' perceptual accuracy and psychological adjustment. It seems important to know if this training program could also be effective in clinical settings to improve various client/patient populations' perceptual accuracy and psychological adjustment.
CHAPTER IV

Summary

Many personality theorists who have postulated criteria for determining psychological adjustment have given focus to the importance of effective cognitive functioning. Phenomenologists as well as cognitive theorists assert that how human beings think about and perceive the world around them shapes their reality and existence. They also maintain that great variability exists among individuals as to how they perceive themselves and their environment. It is this variability in perception which may in fact determine the variability in people's ability to adjust to their social environment.

Personality theorists have consistently maintained that perceptual accuracy is related to psychological adjustment. Although they each have defined their concepts in different terms, the major theorists have all agreed on one basic theoretical tenet: Psychologically adjusted persons experience relative freedom from psychological threat and therefore have no need to distort their perceptions in order to defend against anxiety. Similarly, psychologically maladjusted individuals are often threatened by their perceptions and respond defensively by denying or distorting such perceived experience. Such perceptual distortion is achieved in order
to reduce incongruity between the perceived experience and the individual's concept of self, psychological needs, values, and beliefs. Thus, it is theorized that a mutual relationship exists between perceptual accuracy and psychological adjustment. Accurate or nondefensive perception is a critical element in determining psychological adjustment, and the level of psychological adjustment directly affects accuracy of perception.

Researchers in the field of perception have validated the relationship between accuracy of object perceptions and psychological adjustment. Experimental evidence indicates that people who are badly adjusted or appear psychologically abnormal do, in fact, make more errors in ordinary perceptual tasks than do well-adjusted people. Further, research results have shown consistently that one variable, cognitive or perceptual flexibility, a term introduced by this author, is necessary for both accurate perception and psychological adjustment. Individuals who demonstrate perceptual inflexibility or the lack of perceptual openness, as described by the phenomenologists, approach incoming stimuli with rigidly defined perceptual sets and cognitively organize the cues according to rigidly defined values and beliefs. Such individuals attempt to avoid psychological threat through the perceptual process but their efforts result in perceptual inaccuracy and an inability to adjust to the real world. Thus, accuracy of object perception is clearly related to
psychological adjustment.

Unfortunately, minimal attention in research has been given specifically to the relationship between interpersonal perception and psychological adjustment. Past research has indicated that accuracy in interpersonal perception is disrupted by the very same variables which threaten psychological adjustment: exaggerated psychological need, extended emotional arousal or anxiety, and perceived threat to one's self-regard. Moreover, experimental results have indicated that certain personality characteristics (i.e., perceptual flexibility, sensitivity to others, tolerance of others, and emotional well-being) that are directly related to psychological adjustment are also related to accuracy in interpersonal perception. These results must be regarded with caution, however, because previous research studies have failed to define or evaluate accuracy of interpersonal perception as the immediate affective sensitivity to the feelings and meaning of others. Thus, the relationship between interpersonal perception and psychological adjustment remains theoretically plausible but unconfirmed by research.

The purpose of this study was to investigate the relationship between interpersonal perception and psychological adjustment. Specifically, it examined the effect of improved interpersonal perceptual accuracy on subjects' level of psychological adjustment. For purposes of this study, interpersonal perception was defined as the process by which an
individual senses and understands the feelings and meaning of others.

The sample for this study consisted of undergraduate students in nine intact class sections at the University of Delaware for the spring semester of 1978. The final experimental group consisted of 19 subjects and the control group consisted of 39 subjects. All subjects were administered a battery of pretest measures, at the beginning of the semester, which included the Affective Sensitivity Scale, the California Psychological Inventory (CPI), and the Multiple Affect Adjective Check List (MAACL). During the next six class sessions, experimental group subjects received training to improve interpersonal perceptual accuracy; the control group subjects received no experimental treatment during these 6 weeks but continued their regular attendance of classes in the communications department. The next two class sessions were devoted to administering the Affective Sensitivity Scale, the California Psychological Inventory, and the Multiple Affect Adjective Check List again to all subjects.

The null hypotheses for this study were: (1) There would be no relationship between subjects' pretreatment Affective Sensitivity Scale scores and their pretreatment scores on the Multiple Affect Adjective Check List and selected scales of the California Psychological Inventory (i.e., Sa, Wb, Re, To, Fx, and Fe); and (2) there would be no difference between the change scores of the group which
improved interpersonal perceptual accuracy and the group which did not improve interpersonal perceptual accuracy on the Multiple Affect Adjective Check List and the selected scales of the California Psychological Inventory.

A variety of statistical analyses were required to test these hypotheses. Pearson product moment correlations between pretreatment scores on the Affective Sensitivity Scale and the pretreatment scores on the Multiple Affect Adjective Check List and the selected scales of the California Psychological Inventory were computed to test Hypothesis One. Because of subject attrition, the data were ordered and entered into the computer in the form of three groups: the true experimental group which achieved proficiency on the Final Proficiency Test, the nonexperimental group which failed to achieve proficiency, and the control group. Thus, analysis of variance was employed to test for differences in the change scores on the Affective Sensitivity Scale, the Multiple Affect Adjective Check List, and the California Psychological Inventory selected scales among the three groups. Then, because of the particular relevance of the results between the experimental group and the control group, two-sample t tests of change scores were employed to determine the differences on all three instruments between the experimental group and the control group. Analysis of the results of the nonexperimental group which failed to achieve proficiency of the course material was considered separately.
Finally, correlated \( t \) tests were computed to determine statistical significance of individual sets of change scores within groups.

Results indicate that neither Hypothesis One nor Hypothesis Two should be rejected; however, there were several significant findings. First, the experimental group subjects significantly improved their interpersonal perceptual accuracy; the control group subjects did not improve \( (p < .01) \). Second, there were significant differences between the experimental and control groups' change scores on the Re, Fe, and Fx scales of the California Psychological Inventory \( (p < .01) \). Third, on these same scales, the experimental group subjects significantly improved their scores \( (p < .05) \) and the control group subjects changed their scores in the negative direction. Finally, the experimental group changed in the negative direction on the Anxiety scale of the Multiple Affect Adjective Check List \( (p < .10) \).

It was concluded that a relationship between interpersonal perception and psychological adjustment exists. Although correlational methods used to test Hypothesis One did not validate this relationship, the statistical methods (analysis of variance, correlated \( t \) tests) used to test Hypothesis Two demonstrated that a relationship between interpersonal perception and psychological adjustment does in fact exist. Apparently, this relationship is measurable only for subjects who are above or below average in their...
accuracy of interpersonal perception, as indicated by the second analysis.

It is clear that improving subjects' interpersonal perceptual accuracy can affect improvement of their levels of psychological adjustment. As noted above, the experimental group, the group which improved interpersonal perceptual accuracy, not only had change scores which significantly deviated from the control group on three scales of the California Psychological Inventory, but improved significantly on these three scales.

The first scale on which the experimental group subjects significantly improved was the Responsibility (Re) scale of the California Psychological Inventory. Examination of the meaning of this scale indicates that subjects who score higher on this scale are more responsible, more emotionally stable, less influenced by personal bias and/or dogmatic thinking, and basically more independent than those subjects who are low scorers. The results suggest that the training to improve interpersonal perceptual accuracy provided the experimental group subjects with the necessary information and perceptual skills to perceive more accurately and thus relate to others more independently. They were enabled to rely on their perceptions of others and events with more confidence and sense of inner control. No longer were they forced to rely on personal bias, dogmatic thinking, prejudice, lack of understanding, or the face-value acceptance
of others' words in order to make judgments of others. In this manner, improving subjects' interpersonal perceptual accuracy improved their levels of psychological adjustment.

The experimental group also improved significantly on the Femininity (Fe) scale of the California Psychological Inventory as a result of improved perceptual accuracy. Analysis of the meaning of this scale indicates that subjects who score higher on this scale are more emotionally stable, more able to deal with ambiguity, and more sensitive to the needs and feelings of others than those subjects who are low scorers. It is understandable that improvement of interpersonal accuracy would produce such characteristics. First, the focus of accurate interpersonal perception is the needs, feelings, and meaning of other people. Thus, it is logical that the good person perceiver would be more sensitive to the needs and feelings of others than the less accurate person perceiver. Second, it has been established that perceptual accuracy is dependent upon perceptual flexibility, the ability to deal effectively with new, incongruous, or ambiguous stimuli. It was hypothesized that improving subjects' interpersonal perceptual accuracy also increased their ability to be perceptually flexible. Further, perceptual flexibility is related to psychological adjustment. Personality theorists have maintained that psychologically healthy people experience relative freedom from psychological threat and therefore have no need to defend against anxiety by
distorting or denying their perceptions. More accurate person perceivers are able to be open to any and all aspects of reality; their perceptual fields are maximally open. In this study, it was proposed that flexibility replaced rigidity in perceptual functioning; psychological adjustment was improved as a result.

The experimental group also improved significantly on the Flexibility (Fx) scale of the California Psychological Inventory. Although this scale measures flexibility in thinking, rather than in perception, thinking and perception are obviously related. Both are interdependent cognitive processes which directly affect the way a human being feels and behaves. Thus, it was assumed that the experimental treatment in this study affected the perceptual/cognitive structure of the experimental subjects, producing both perceptual and cognitive flexibility. Such flexibility in both perceiving and thinking subsequently contributed to both improved interpersonal perceptual accuracy and improved psychological adjustment.

As noted previously, the control group subjects changed on the same three scales of the California Psychological Inventory that the experimental subjects showed significant change; however, the control subjects changed in the negative direction. Several possibilities were considered in interpreting this finding. The explanation proposed was that the passing of time from the beginning of the semester to the
middle of the semester, with the concomitant pressures to perform well academically, were sufficient cause for subjects to demonstrate less sense of responsibility for self, less sensitivity to others, and less flexibility in thinking on the posttest than on the pretest.

One other significant finding was that experimental subjects changed ($p < .10$) in the negative direction on the Anxiety ($M_1$) scale of the Multiple Affect Adjective Check List. As discussed previously, the experimental treatment directly confronted rigid, stereotyped thinking, introduced the ambiguities of the perceptual process, and apparently produced significant change in the perceptual/cognitive structures of the experimental subjects. It was assumed that such change raised subjects' level of anxiety. No longer were their previous sets of beliefs and biases intact to reduce perceptual ambiguity; no longer was rigid thinking or rigid perceptual organization available to defend as effectively against anxiety. It was also hypothesized that the anxiety reaction of the experimental subjects was temporary. Follow-up testing is required to test this prediction.

In summary, this study demonstrated that the relationship between interpersonal perception and psychological adjustment exists. More specifically, it was shown that improving interpersonal perceptual accuracy can improve the cognitive components of psychological adjustment. Results indicate, however, that such significant change in cognitive
style may result in an increased level of anxiety for subjects.

The results of this study have several implications. First, it was proposed that training to improve interpersonal perceptual accuracy has a much broader application than therapist training, where it has thus far been primarily employed. Since it has been validated that training to improve interpersonal perceptual accuracy can improve psychological adjustment, it would seem that this training would have use in a variety of clinical populations. Second, it was proposed that a systematic, didactic training program can have a significant therapeutic effect within a relatively short period of time. Third, it was concluded that regardless of the therapeutic intervention employed, improving the accuracy of clients' perceptions is critical to improving their psychological adjustment.
REFERENCES


Bullmer, K.  Improving your interpersonal perceptual skills.  Bloomington: Indiana University Press, 1970. (a)


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Frenkel-Brunswik, E. Dynamic and cognitive categorization of qualitative material. II. Interviews of the eth­nically prejudices. Journal of Psychology, 1948, 25, 261-277. (b)

Frenkel-Brunswik, E. Intolerance of ambiguity as an emo­tional and perceptual personality variable. Journal of Personality, 1949, 18, 108-143.


Hjelle, L. A. Accuracy of personality and social judgments as functions of familiarity. Psychological Reports, 1968, 22, 311-319. (a)

Hjelle, L. A. Personality characteristics associated with interpersonal perception accuracy. Psychological Reports, 1968, 22, 579-581. (b)


Papson, B., & Hamersma, R. J. Perceptions of schizophrenics versus normals using parental figures and subjects size. Perceptual and Motor Skills, 1974, 38, 711-716.


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Rogers, C. R. *Client-centered therapy.* Boston: Houghton Mifflin, 1951. (a)


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APPENDIX I

Analysis of Randomness
Analysis of Randomness

To establish the use of intact groups as a valid procedure to meet the conditions of randomness in this study, it was necessary to demonstrate that the groups were comparable before the introduction of treatment conditions. Analysis of variance and random groups t tests were used to test for differences between pretreatment scores on the Affective Sensitivity Scale, the selected scales of the California Psychological Inventory, and the Multiple Affect Adjective Check List for the experimental, nonexperimental, and control groups. Data for these analyses are summarized in Table A and Table B.

No significant differences between the pretreatment scores of the experimental and control groups were found with the exception of the pretreatment scores on the Affective Sensitivity Scale. Since a variety of other pretreatment measures were used to make the comparisons and no other differences were found, it was concluded that the two groups were sufficiently comparable for the purposes of this study. Further, the control group's scores were accepted as being atypically low.

The data of the analyses used to compare the nonexperimental group with the experimental and control groups are interesting, although not specifically related to the research hypotheses. As discussed in the Subject Attrition section,

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Table A

Analysis of Variance of Pretreatment Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Experimental, Nonexperimental, and Control Groups

<table>
<thead>
<tr>
<th>Variable</th>
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Note. df = 92.

NS $p > .05$.

*p < .05.
Table B

Random Groups t Tests of Pretreatment Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Experimental, Nonexperimental, and Control Groups

<table>
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<tr>
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</table>

Note. df = 92.

*p < .05.

**p < .01.
the nonexperimental group was composed of subjects who failed to achieve proficiency of the course material. It was interpreted that this group of subjects was less motivated to achieve than was the group of experimental subjects who achieved proficiency. The data summarized in Tables A and B support this interpretation. The nonexperimental group subjects scored significantly lower on the Responsibility (Re) scale of the California Psychological Inventory than did the experimental group subjects. It is very reasonable, therefore, to conclude that the nonexperimental subjects were significantly less responsible than the experimental subjects even before the introduction of the treatment, and thus demonstrated less motivation to fulfill the requirements of the course during the treatment period.

The only other significant difference between the experimental and nonexperimental groups' pretreatment scores is on the Depression (M2) scale of the Multiple Affect Adjective Check List. It is interesting to note that the nonexperimental group subjects scored significantly higher on the pretreatment administration of the Depression scale than the experimental group subjects. This finding, however, is difficult to interpret. One hypothesis is that the nonexperimental group subjects experienced a more depressed mood as they faced the academic demands of the new semester than did the experimental group subjects, because of their feeling less responsible for the outcome of the course and being
less motivated. Perhaps the experimental group subjects felt more optimistic about their ability to fulfill the course requirements. An item analysis of the Multiple Affect Adjective Check List Depression scale is needed before a completely valid interpretation can be made.
APPENDIX II

Informed Consent Forms
Dear Student:

I am requesting your participation in this class with your full understanding that you will also be a subject of a research project. The course syllabus outlines the course objectives, and thus gives you a sense of the benefits to be expected by your participation. The only attendant risks involved with your participation might be some changes in your perceptual set toward interpersonal relationships, and perhaps toward your own behavior.

As noted in the syllabus, the procedures of the research study include administration of two sets of psychological inventories at two different times. All of the instruments will be designed to gather information anonymously.

As standard procedure in any course, if you wish to withdraw from this course, you can do so at any time until the withdrawal date designated by the university.

If you have any further questions concerning procedures to be used, please feel free to make inquiries of your instructor(s). Furthermore, if for any reason the course content arouses any personal concerns for you, the Center for Counseling is available to assist you.

Thank you.

Barbara Dambach
Doctoral Intern

---

I give my informed consent to participate in this research project.

_____________________
Signature
Dear Student:

I am requesting your participation in a research project that I am conducting this semester. Your participation merely involves responding to two sets of psychological inventories at two different times. All of the instruments will be designed to gather information anonymously.

You are free to withdraw your participation in the project at any time. If you have any further questions concerning procedures to be used, please feel free to make inquiries of me at the Center for Counseling, 210 Hullihen Hall.

Thank you.

Barbara Dambach
Doctoral Intern

---

I give my informed consent to participate in this research project.

__________________________  __________________________
Date                                Signature
APPENDIX III

Experimental Treatment Course Syllabus
HELPING RELATIONSHIPS
EDP 330 - Section 12
Spring, 1978

Instructors: Rick O'Leary and Becky Faulkner
Center for Counseling
738-2141

Time: Tuesdays, 3:00 – 4:30 p.m.

Place: 327 Purnell

Course Objectives:

1. To improve students' accuracy of interpersonal perception.

2. To improve students' communication of accurate empathy.

3. To increase students' knowledge of the dynamics of "Helping Relationships."

The course will follow the format of combining didactic presentations, discussion, and experiential exercises in order to achieve the goals outlined above. Active participation in class will be expected. Homework assignments will be given when appropriate to the topic area.

Helping relationship skills must be built sequentially—one upon another. Thus, class attendance is very important. If you are unable to attend class, please notify the instructors at least one day before the class meeting. Class attendance will be taken into consideration when course grades (Pass-Fail) are given.


Feb. 14 Orientation to course material.
Administration of Affective Sensitivity Scale.

Feb. 21 Administration of psychological inventories.
Assignment: Units I & II, Art of Empathy.
Feb. 28 Interpersonal Perception.
Discussion: The Concept and Sources of Error in the Process.
Exercises: Sources of Error.
Assignment: Definition of implicit personality theory.

Mar. 7 Implicit Personality Theory.
Discussion: Possible effects of implicit personality theory.
Assignment: Unit III, Art of Empathy.

Mar. 14 Identifying Emotions.
Discussion: Needs, motives, emotions.
Exercises: Identifying emotions.
Assignment: Unit IV, Art of Empathy.

Mar. 21 Identifying Hidden Meaning.
Discussion: Use of defense mechanisms.
Exercises: Identifying hidden meaning.
Assignment: Unit V, Art of Empathy.

Apr. 4 Listening with Understanding.
Discussion: Our tendency toward judgment.
Exercises: Listening with understanding and final proficiency test.
Assignment: Unit VI, Art of Empathy.

Apr. 11 Review.
Administration of Affective Sensitivity Scale.

Apr. 18 Administration of Psychological Inventories.

Apr. 25 Dynamics of the Helping Relationship.
Discussion: Role definitions and components of helping process.
Exercises: Physical attending and parroting.
Assignment: The experiencing and language of emotion.

May 2 Communicating Understanding of Affective Meaning.
Discussion: Discriminating feelings and content.
Exercises: Reflection responses.
Assignment: Discrimination of feelings.

May 9 Interpretation of Feeling and Content.
Discussion: Basis for making interpretations.
Exercises: Interpretation responses.
Assignment: Self-assessment of skills.

May 16 Putting It All Together.
Exercises: Role-playing counseling sessions.
Wrap-up/Group feedback/Evaluations.
APPENDIX IV

Experimental Treatment Lesson Plans
I. What is Interpersonal Perception?

A. Perception: Process of extracting information from environment—Stimuli = object, person, condition, action.

B. Interpersonal Perception: Stimulus = person.

C. Many human properties are internal; much judgment in interpersonal perception.
   1. Internal properties = emotions, motives, attitudes, abilities.
   2. Must infer internal properties.
   3. We make judgments to resolve ambiguity—human beings need to understand their environment—thus, fill in gaps even with lack of information.

D. Influences on perceptual process:
   1. Past learning experiences.
   2. Thinking processes.

E. Thus, perceptual process is very individual.
   1. Two people may observe same S and have different percepts—e.g., two witnesses of a crime.
   2. Also, same person may observe an S at two different times and have different percepts—e.g., Christmas.
   3. Greater differences between influencing conditions of people, greater difference between resulting percepts—e.g., "generation gap."
F. Another complicating factor— withholding cues or stimuli information from perceiver.
   1. May not be able to accept cues at face value.
   2. Very common; develop "social selves."

G. Each of us has "implicit personality theory."
   1. Relatively fixed set of attitudes, beliefs, values— biases— "common sense."
   2. Implicit personality theory affects percepts and judgments.
   3. Process is fraught with error.

H. Interpersonal perception affects interpersonal relating— i.e., response behavior.

I. Self-analysis: Implicit personality theory → Explicit.

II. Sources of Error.

A. Many sources of error: superficial observation, faulty memory, superstition, prejudice.
   1. Three major classifications:
      a) Distortion.
      b) Inadequate intelligence.
      c) Implicit personality theory.

B. Distortion may result from selectivity of stimuli to fit needs of perceiver.
   1. Greatly affected by defensiveness when perceiver feels threatened— e.g., "Beauty is in the eye of the beholder."
   2. We perceive what we choose to perceive— e.g., choosing mates, academic or work performance, optimists/pessimists.

C. Inadequate I.Q. affects ability to organize incoming stimulus information.
D. Implicit personality theory:

1. Stereotyping—attributing identical characteristics to any member of a class or group. Biases don’t seem to be affected by situation—they are fixed.

2. Trait attribution—assume that presence of one trait necessarily follows from presence of another—process of inferring inner traits from observable traits. Trait attribution tends to place emphasis on traits that are highly valued.

3. Assumed similarity—process whereby perceiver attributes to other persons characteristics he sees himself possessing—e.g., trustworthiness. Tends to be "gestalt" projection—one likeness may be interpreted as total likeness—again, for the purposes of reducing ambiguity.

E. Self-analysis: making implicit personality theory explicit for objective verification. Make hunches, check them out.

Exercises for Session I (Do in small groups [3-4].)

1. Brainstorm Stereotypes

   e.g., Old people Politicians
   Women       Priests
   Blacks       Grandmothers
   Hippies      Used car salesmen
   Alcoholics   Republicans

2. Brainstorm Trait Attribution

   e.g., Redheads (temper)
   Blondes (dumb)
   Fat people (jolly, happy)
   People who swear (coarse, immoral)
   Divorced women (lewd, immoral)
   Unemployed (lazy)
   Athletic men (dumb)
   Feminine men (homosexual)
Exercises for Session I (Continued)

3. Brainstorm Assumed Similarities
   e.g., Motivation
   Selfishness/Unselfishness
   Trustworthiness
   Stinginess/Generosity

4. Brainstorm Times of Perceptual Distortion
   e.g., Client wants to cry, counselor misses it.
   Counselor needs client to be attracted or not attracted.
   Counselor labels client "uncooperative."

Assignment

Begin and keep personal journal for purposes of "self-analysis."

Record:

1. Uses of trait attribution
   stereotyping
   assumed similarity

2. Implicit personality theory
   (to be handed in)
The purpose of this session is to facilitate discussion of the students' implicit personality theories. It may be helpful to suggest the following points to guide the discussion:

1. What are the major points of your implicit personality theories?

2. What made the process of making implicit theory explicit difficult?

3. What or who might have been some of the sources of past learning reflected in your theories?

4. What components of your theories seem to be in error now that you are aware of them?

5. How do stereotyping, trait attribution, and assumed similarity affect your implicit personality theories?
I. Needs, Motives, Desires.

A. Need: person's compulsory feeling to remove or change his perception of physiological or psychological discomfort.

B. Human beings in continual state of need. Behavior is goal-directed for satisfaction of needs.

C. Needs are biological or learned.
   1. Biological—e.g., food, H2O, air, temperature, sex.
   2. Learned—e.g., prestige, achievement, money.

D. Motives result in some overt behavior in which individual attempts to influence environment so as to alter his need state.
   2. Desires—Motives, Behavior: to produce pleasure.

E. Learned needs may be stronger than biological needs—e.g., waiting to go to bathroom, dieting, sexual delay of gratification.

F. Although need states are in constant state of flux (e.g., exercise—fatigue—rest), basic rank-ordering with each of us in terms of which learned needs are most often operating.
   1. Rate on scale of 1 to 5:
      Deference    Achievement
      Order        Heterosexuality
      Autonomy     Exhibition
      Affiliation  Change
      Dominance   Nurturance
   2. Circle all those which are rated above 3.
   3. How do these needs relate to your behavior?
II. Emotions.

A. Emotion: individual's subjective feelings of pleasantness or unpleasantness—includes physiological reactions.

B. Needs - Motives - Behavior

C. We communicate emotional states:
   1. Facial expressions.
   2. Body Gestures.
   3. Change in vocal tone.
   4. Verbal content.

D. Specific emotions.
   1. Goal attainment
      a) Fear—inequality to avoid threat.
      b) Anxiety—objectless pervasive fear.
      c) Anger—goal attainment blocked.
      d) Joy—achievement of desired goal (importance, difficulty, suddenness).
   2. Good - Bad.
      a) Guilt—behavior is wrong or immoral.
      b) Shame—failure reflects real self (i.e., bad).
      c) Pride—accomplishment reflects real self (i.e., good).
   3. People-directed.
      a) Love—attraction and devotion.
      b) Hate—dislike to point of desire to destroy.
      c) Jealousy—rival for affection of a loved one.
      d) Envy—coveting another's possessions, success, etc.
EDP 330 - LESSON PLAN III (Continued)

III. Identifying Emotions.

A. In order to identify, necessary to infer needs and desires.

B. Person perception difficult.
   1. Person may experience multiple needs simultaneously.
   2. Person may be unwilling to expose needs and desires.
   3. Person may be willing, but unaware of his own needs, motives, and emotions.

C. Great source of information: verbal behavior.

Exercises for Plan III

1. Identifying nonverbal communications of emotion.
   Give each individual (i.e., pass the cup) an emotion to nonverbally express and have group hypothesize until right.

2. Identifying verbal communications of emotion.
   Give similar assignments but for verbal expressions of emotions—may have to be placed in situational context—group again hypothesizes until correct.

Discuss points of confusion.

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<td>b) Guilt</td>
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<td>c) Frustration</td>
<td>c) Jealousy</td>
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<td>d) Joy</td>
<td>d) Envy</td>
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<td>e) Sadness</td>
<td>e) Jealousy-anger</td>
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<td>f) Anxiety-excitement</td>
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<td>g) Fear</td>
<td>g) Anxiety-guilt</td>
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<tr>
<td>h) Love</td>
<td>h) Anger-fear</td>
</tr>
<tr>
<td>i) Shame</td>
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</table>
EDP 330 - LESSON PLAN III (Continued)

Assignment

Practice identifying emotions.

Record in journal the emotions which are the easiest for you to express to others and why that might be.
I. Hidden Meaning.

A. Accurate interpersonal perception cannot depend on only those emotions subject is willing or able to communicate overtly—i.e., body reactions and verbalizations.

B. Most common "hidden" emotion: anxiety.

II. Anxiety.

A. Feelings that result when people experience emotion of fear but cannot identify source—very unpleasant emotional experience.

B. Source of anxiety may be unconscious—feeling of anxiety is conscious—i.e., in awareness.

C. Human being naturally attempts to reduce discomfort and produce more pleasant state—thus, need to reduce anxiety.

D. Instrumental response: reduce anxiety by elimination of causitive conflict or frustration—e.g., leave restaurant, stop driving car, avoid heights.

E. Noninstrumental responses: reduce anxiety without change in situation by denying, falsifying, or distorting reality—i.e., change the perception of situation.

III. Defense Mechanisms.

A. All people use defense mechanisms; not all use of defenses is unhealthy; defenses can be helpful.

B. When defenses fail, result is uncontrolled anxiety—i.e., overt; when defenses work, result is latent anxiety.

C. Responses to threat are learned—usually individual has learned how to keep level of anxiety low.
IV. Specific Defenses.

A. Rationalization: giving acceptable motive to behavior that is motivated by needs that past learning has made to appear unacceptable. Person gives good-sounding, convincing reasons for behavior that is actually motivated by unconscious, socially unacceptable impulses.

B. Compensation: person accepts substitute goal or behavior that he perceives as being attainable or socially acceptable in place of desired goal or activity that he feels is unacceptable or unattainable. Sign: behavior is exaggerated.

C. Identification: ascribing to one's self the qualities and characteristics belonging actually to another person or object—sharing traits or prestige.

D. Projection: attributing to others one's own undesirable unconscious feelings and motive—usually placing blame for difficulty on others or attributing own unethical desires.

E. Projection—Identification.
   1. When self-percept has traits one doesn't want—projection.
   2. When self-percept doesn't include traits that are wanted—identification.

F. Reaction Formation: preventing dangerous desires from being expressed by exaggerating opposed attitudes—"protests too much."

V. Unacceptable Self-Perceptions.

A. To remove anxiety—use rationalization, identification, projection, and reaction-formation.

B. To reduce guilt—projection, rationalization, reaction-formation.

C. To reduce grief—denial.

D. To increase joy—identification, compensation.
Exercises for Plan IV

1. Ask students to verbalize defensive statements upon assignment and others to identify the mechanism operating.

2. Give defensive statements and have students translate into real meaning—i.e., "if client were really telling you what he was feeling and thinking . . . ."

   a) The only reason that I lied to him was that everybody else did.
   b) All people have a problem with their sexual behavior.
   c) If the University wasn't so conservative, I would have done better with my courses last term.
   d) Death has never been a concern to me.
   e) My only interest is to be the best football player in the world.
   f) I cannot believe that anyone would read that awful, sick magazine!
   g) I love everybody!
   h) With all of these people in here, you can be sure someone will steal something.
   i) Everyone is trying to cheat in one way or another.
   j) I would run things very much as he does.

Assignment

Practice listening and identifying defensive statements.

Record in journal: self-use of defenses

--which used most often
--when
--why
--awareness if common pattern is recognized
I. Listening with Understanding.

A. If you are agreeing or disagreeing, you are judging—approving or disapproving.

B. Judgment removes ambiguity!—difference between personal and clinical judgment.

C. Real judgment occurs when emotions are involved on part of perceiver.

D. Perceptual approach: understanding meaning of person on basis of his/her perceptions—if perceptions are understood, behavior will be.

E. Basically, disregard own emotion.

F. Perceptual approach involves risk of being changed—thus, requires courage.

G. Perceptual approach requires practice.

Exercises for Plan V

1. Model "listening with understanding"—first a bad session, then a good session.

2. Break into triads with "client," "counselor," and "referee"—roles will continually shift—client talks; counselor reflects; referee insures understanding. Good reflection: non-mimicking of verbal content—reflection of affect—perhaps reflection of additional meaning.

3. Propose:
   a) Role-playing.
   b) Issues—e.g.,

   --Carter is an excellent President.
   --University of Delaware is a terrible school.
   --Grades are unnecessary if purpose of education is improving society.
   --Couples should be licensed to be parents.
   --Divorce rate is steadily increasing.
I. Review Emotions.

--Anger --Fear
--Guilt --Anxiety
--Shame --Hate
--Joy --Envy
--Love --Jealousy

II. Review Defense Mechanisms.

--Rationalization
--Compensation
--Reaction-formation
--Projection
--Identification

Exercises for Plan VI

Role-playing: listening with understanding.

--Reflection of verbal content
--Reflection of affective content
--Validation of hidden meaning

a) Role-playing reversal: "open" clients.

b) Role-playing reversal: "defensive" clients.

(Choose a defense and use it in verbalizations.)
APPENDIX V

Preliminary Analysis Prior to Data Pooling Procedures
Preliminary Analysis Prior to Data Pooling Procedures

To establish pooling of data for class groups within treatment sets as an appropriate procedure, analysis of variance was used to test for differences between the pre-treatment and change scores on the Affective Sensitivity Scale, selected scales of the California Psychological Inventory, and the Multiple Affect Adjective Check List for class groups within the experimental treatment set and for class groups within the no treatment or control set. Data for these analyses are summarized in Table C, Table D, Table E, and Table F.

Since differences between the pretreatment and change scores on the Affective Sensitivity Scale, selected scales of the California Psychological Inventory, and the Multiple Affect Adjective Check List for class groups within treatment sets were all clearly nonsignificant, pooling of the data for class groups within treatment sets was deemed to be appropriate. It was concluded that differences between treatments would be due to the effects of the treatment rather than to treatment plus unique effects of intact class experience.
Table C

Analysis of Variance of Pretreatment Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Six EDP 330 Class Groups of the Experimental Treatment Set

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<td>Within groups</td>
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Table D

Analysis of Variance of Pretreatment Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Three COMM 100 Class Groups of the Control Set

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### Table F

Analysis of Variance of Change Scores on the Affective Sensitivity Scale, Selected Scales of the California Psychological Inventory, and Multiple Affect Adjective Check List for the Three COMM 100 Class Groups of the Control Set

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