COGNITIVE STYLES AND CLIENT - THERAPIST RELATIONSHIP EFFECTIVENESS WITH HEROIN AND NON - HEROIN USERS

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This is to certify that the

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ABSTRACT

COGNITIVE STYLES AND CLIENT-THERAPIST
RELATIONSHIP EFFECTIVENESS WITH
HEROIN AND NON-HEROIN USERS

By

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Statement of the Problem

With the increased incidence of drug abuse in the United States, it is increasingly desirable to more clearly understand the individual we are attempting to motivate for treatment. This study was an attempt to understand the drug user from the point of view of his cognitive style and secondly to examine the therapeutic relationship as one factor which might contribute to motivating a client to remain in a program.

This particular study consisted of two parts. The first was an experimental study which matched the client, according to his cognitive style, as closely as possible with a therapists cognitive style. The quality of the resulting relationship and the change in behavior of the client were examined. The notion was that the greater the similarity between client and therapist with respect to their cognitive styles, the better the resulting

relationship and thus the greater the probability of increasing the client's motivation for treatment.

The second portion of the study was a comparative study which examined the cognitive styles (which is composed of three factors; symbols, cultural determinants of the meaning of symbols and modalities of inference) of heroin users and non-heroin users. This facet of the study provided insights into the manner in which a drug user acquires knowledge and derives meaning from life.

Methodology

The Experimental Study

The sample for the experimental study were male inmates incarcerated at the Ingham County Jail, Mason, Michigan who were found to have drug related problems. The sample had the following characteristics:

1. incarcerated male inmates
2. no psychosis present
3. heroin users
4. drug abuse of more than three months but less than three years
5. limited exposure to previous therapy programs.

Sixty incarcerated inmates with drug problems who volunteered to participate were randomly assigned to one of two treatment groups. One was the experimental treatment group where the client was matched, according to cognitive

styles, as closely as possible with a therapist. The second was the treatment control group where clients were randomly assigned to a therapist. Both groups, each containing thirty clients, received six hours of therapy, followed by the post-test measures.

Therapy for both the treatment and control groups was provided by three therapists. Each therapist had his Master's degree and a minimum of one year experience; each joined the Drug Abuse Treatment Program at approximately the same time; all were males; and each had similar philosophical approaches to treatment, however, their cognitive styles were different.

The post-test measures were the Fiedler 75 Item Relationship Instrument which was used to measure the quality of the therapy relationship and the Behavior Rating Forms which were developed by the researcher to report actual observed behaviors of the client.

The Comparative Study

The sample for the comparative study was composed of drug abusing persons from the tri-county area of Lansing, Michigan, who had presented themselves for treatment in a community based program. Thirty heroin abusers were randomly selected from the total case load of the community program and given the cognitive style instrument. Another group of thirty non-heroin drug users were randomly selected

and given the cognitive style instrument. The sample had the following characteristics:

1. non-incarcerated males from the Lansing, Michigan, area
2. no psychosis present
3. drug abuse of more than three months but less than three years.

Analysis of the content of the cognitive styles of both groups was done. Similarities and differences between heroin and non-heroin users were evaluated.

Results and Implications

The Experimental Study

The results indicated that clients who were matched according to their cognitive style had a significantly better quality relationship with their therapist than the non-matched control group. Behaviors of the client which were observed by the teachers and turnkeys were significantly better for the experimental group than for the control group. These data appear to support the notion that the therapy relationship is important and the client appears to respond more rapidly to treatment where a good therapy relationship exists.

The implications of this work suggest that it may be feasible to attempt to match, as closely as possible, client and counselor in order to effect more rapid progress in treatment. Further, through providing counselors who

are similar in cognitive style to the prospective client, there appears to be a greater probability of a more effective relationship.

It must be noted, however, that these data have demonstrated the efficacy of matching clients and counselors for the short run, but the data does not project the long run results of such matching techniques.

The Comparative Study

From the comparative study it was found that the cognitive styles of the heroin and non-heroin drug users do differ, that the heroin user has fewer major elements in his cognitive style map and that the heroin group has fewer ways of deriving meaning and acquiring knowledge from life than the non-heroin group. The cognitive style of heroin users was found to be highly similar on several elements, likewise the non-heroin users had a number of common elements which suggests intra-group similarities.

As an example of the differences between the two groups, the heroin group was found to derive meaning through the cognitive style element (I) Individual. This suggests he derives meaning from independence in making his own decisions. He possesses innate knowledge that his way is best in addition to an ability and willingness to direct his own behavior. The heroin user does not derive meaning from his friends or peer group, i.e., the cognitive style

element (A) Associates. This means that in the process of making a decision, the heroin user relies on himself, not his peer group, to arrive at what he perceives as an appropriate behavior for a given situation.

The non-heroin group differs significantly from the heroin group in that the non-heroin abuser does not derive meaning from the element (I) Individual. Instead the element (A) Associates does provide him with a source of meaning. Thus, in the decision making process, he relies on input from the peer group in arriving at what he perceives as appropriate behavioral response.

Perhaps the heroin user is attracted to the "sub-culture" more out of a necessity to obtain the drug than to derive psychological support. The non-heroin user apparently derives more than just the drug from the "sub-culture" but apparently also derives psychological support from the group.

These data suggest there are differences in the cognitive styles of the two groups, thus, consideration must be given to providing differential treatment programs.

Finally, the cognitive style map should be viewed as a devise which can provide the counselor with a window, through which he can look into the life space of his client. The instrument indicates where an individual is now in terms of his personal and unique method of deriving meaning and knowledge from life. The major elements in the

client's map represent those things which have been meaningful to him. This is but one tool which may contribute to increased understanding and communications with the client.

In order to change attitude-behaviors, we must first be able to communicate in meaningful ways with the individual we are seeking to have an impact on. If we understand the client's cognitive style and are sensitive to him as a unique human being, then perhaps we can establish an effective communications system which will further enhance the therapy relationship.

Hopefully, the result will be the client's attitude-behavior change, his resocialization and his ultimate reintegration into society as a productive citizen.

COGNITIVE STYLES AND CLIENT-THERAPIST RELATIONSHIP EFFECTIVENESS WITH HEROIN AND NON-HEROIN USERS

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A DISSERTATION

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DEDICATION

To Jeanne, Eric and Ian

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CHAPTER I

RATIONALE

Introduction

The counseling relationship is stressed in much of counseling theory. A variety of variables has been examined which may contribute to the formations of such a relationship. The importance of this counseling relationship with regard to therapy outcome has been emphasized. Counselor and client have been equated, matched, and assumed to be similar on numerous factors thought to relate to the process and outcome of counseling. One concept which has not been examined is that of cognitive style as defined by Hill (1967).

The present experiment examined cognitive style matching and its effectiveness toward enhansing the therapy relationship and therapy outcome. Through this experiment it was hoped that a method could be derived which would stimulate the progress of therapy with persons who are drug abusers.

The experiment also sought to study the relationship between the cognitive styles of heroin vs. non heroin users.

Purpose of the Study

The purpose of this study was twofold: (1) to determine what differences exist between cognitive styles of hard

drug users (physiologically addicted) vs. soft drug users (non-physiologically addicted), (2) to determine whether the formation of a quality therapeutic relationship will be enhanced by matching clients and counselors who have similar cognitive styles.

The therapeutic relationship is seen by many researchers as an essential ingredient required to expedite counseling outcome. This becomes particularly crucial in certain counseling settings where time is a limiting factor. In these settings (e.g., county jails, college counseling centers, vocational rehabilitation offices) it may be important to move the client as rapidly as possible to some desired counseling outcome. In order to do this, a counseling relationship must be promptly established.

As an illustration consider the short term jail sentences received by the drug abusers sent to county jails. It is imperative that the therapist, as expeditiously as possible, establish a therapeutic relationship with the client, and thus increase the probability of positive therapy outcome prior to the inmate's release back into the community.

The major question in this study was: would it be possible to use Hill's Cognitive Style Map for matching therapists and clients and thereby enhance the therapy relationship and the probability of positive therapy outcome?

By matching clients and counselors and by employing short intensive therapy, an individual may be moved more rapidly to deal effectively and realistically with his drug problem while incarcerated and after release, to continue in a treatment program.

Theory, Supportive Research and Justification of the Project

Justification of the Project

Because of the large number of immates cycling through the Ingham County Jail with drug related problems, it has become imperative to offer these individuals some type of treatment that will have a direct effect upon their recidivism rate, employment, family, and drug abusing behavior. The primary difficulty in providing treatment is the relatively short period of incarceration received by inmates at the Ingham County Jail (the average stay is approximately 4 months). It is, therefore necessary to exert as much influence on the inmate as possible if his behavior is to be modified. As a result of a recent Federal Grant providing services at the Ingham County Jail, and because of the comprehensive nature of the drug treatment program for the Lansing, Michigan Community, it seems that all the elements are present which may assist the inmate in his ultimate objective of a well adjusted and drug free life. We therefore seek methods which will

enable the inmates to receive maximum benefit from the drug program.

According to the research reviewed below, the more rapidly a quality therapeutic relationship can be established between client and counselor, the greater the probability of producing a positive therapy outcome. Thus it seems logical that the more rapidly a therapeutic relationship is established, the more rapidly the inmate will begin to deal seriously with his drug related problem. Once motivated for treatment the inmate would be more likely to participate in the aftercare program upon his release from jail. Otherwise during the short incarceration period, if the therapist cannot establish a relationship rapidly, probably the inmate will be released before therapy has an impact on him. The result would be an individual who has a greater probability of returning to jail or failing in the aftercare program.

Relationship Research

Much has been written regarding the importance of the relationship between the client and his therapist. As Snyder, (1961) notes with regard to relationship, "The importance of the relationship is constantly mentioned in the literature, although different authors mean quite different things by the same term" (page 271). The terms relationship, interaction, transaction, transference-countertransference appear to describe segments of the

constellation of dynamics between counselor and client. However this constellation of dynamics is defined, (i.e., relationship, interaction, transaction, and transference) it is important to therapy outcome. Snyder, (1961); Grinker, (1961); Jackson, (1961); Libo, (1957), (1959); Wolberg, (1954); Rodgers, (1961); Murry, (1963); Shoben, (1963); Wolpe, (1968); Lazarus, (1961); Rachman, (1959); Goldstein, et. al., (1966) all basically agree that the key to the influence of psychotherapy on the patient is the relationship with the therapist.

As Bordin, 1959 states:

> . . . whenever psychotherapy is accepted as a significant enterprise, this statement is so widely subscribed to as to become trite. Virtually all efforts to theorize about psychotherapy are intended to describe and explained what attributes of the interactions between the therapist and the patient will account for whatever behavior change results (p. 235).

Goldstein et al., 1961 states that:

> . . . with regard to outcome investigations of relationships . . . a number of studies have examined the widely . . . held belief that the 'favorable' or 'good quality' therapist-patient relationship is essential for a positive therapeutic outcome . . . research evidence is generally unequivocal in its demonstration of a positive influence of the therapy relationship upon treatment outcome (pp. 75 & 77).

Studies by Bown, (1954); Parloff, (1961); Hunt, Ewing, LaForge, and Gilbert, (1959); all indicate that the better the patient-psychotherapist relationship, the greater the symptomatic relief experienced by the patient. Other individuals studying therapist-patient relationship include, Gendlin, Jenny and Shlien, (1960); Holden and Uborasky, (1952); Sapolsky, (1965);

Truax, (1961); and VanDerVeen, (1961). Research evidence here is generally unequivocal in it's demonstration of positive influence of the therapy relationship on treatment outcome. Strupp (1962) speaks of the same issue:

> . . . from the beginning of any psychotherapy, the therapist must succeed in sparking strivings in the patient-sometimes called 'the will to recovery,' 'motivation for therapy,' the striving for 'self-realization,' and the like which enable him to cooperate with the therapist and to oppose the neurotic forces within himself. Undoubtedly, no single combination of attributes will yield the answer. Much would depend, one suspects, on the patient's capacity to identify with the therapist as a 'good parent.' As yet, we know little about the dynamics of this process in patients or in children, but it may well turn out to be the fulcrum upon which effective therapy turns (p. 583).

He further stated that:

> . . . every neurotic patient is unconsciously committed to maintain the status quo, and psychotherapy, particularly if aimed at confronting the patient with his inner conflicts, proceeds against the obstacle of powerful unconscious resistances. Therefore, unless there is a strong conscious desire to be helped and to collaborate with the therapist, the odds against a favorable outcome may be insuperable (p. 6).

Goldstein et al. (1966) states the following:

> . . . psychotherapeutic efficiency may be markedly enhanced by increasing the degree of therapist influence over the patient. Manipulation of a major component of the therapy relationship, that is, patient attraction to the therapist, is offered as the primary means for increasing the level of therapist influence . . . by heightening the favorableness of patient attraction toward his therapist, to that degree does the patient become more receptive to therapist influence attempts (p. 81).

Specific research studies are now presented which represent a composite and recapitulation of relationship investigations.

Bown (1954) in one of the earliest studies of therapist-patient relationship and its relevance to positive therapy outcome focused on the relationship developed in twenty sessions of nondirective therapy with six patients. During the treatment process, Q-sort rations of the quality of the relationship were obtained from each patient-therapist pair. For therapy characterized as successful, in terms of independent outcome measures, Bown reported that "the quality of the actual relationship as perceived by both therapist and client was substantially different from the quality of the relationship in unsuccessful therapy" (p. 43). It was also reported that the client's perception of the relationship more accurately distinguished between the successful and unsuccessful cases than did those of the therapist. Also the greater the agreement between therapist and patient regarding the nature of their relationship, the greater the degree of rated improvement.

Generalization of the above findings is difficult because of the small sample size and the rudimentary nature of Bown's measures. However, the research did stimulate additional studies which provided additional supporting evidence of Bown's notions.

Parloff's (1961) research operationally defined relationship in terms of Fiedler's (1950, 1953) 75-item Q-sort deck for the ideal therapeutic relationship. The study sought to determine whether an association exists

between the therapeutic relationship and outcome of treatment in a group therapy setting. Three criteria of improvement were used: Comfort, Effectiveness, and Objectivity. These criteria were measured by a total of fourteen scales. Additionally, a study was made of the therapist-patient relationship established with patients who terminated therapy prematurely.

Twenty-one patients participated in the experiment. The Fiedler sortings were done by observers who sat in on the meetings of the three participating groups for each of the subjects as pairs with his therapist. The sortings were correlated against the Fiedler ideal therapeutic relationship standard. The better the correlation with the standard, the better the relationship between therapist and client was assured to be.

The other scales measuring comfort, effectiveness and objectivity were administered to each patient, to other members of each patient's group, and to the research staff before and after the twenty session course. The results indicate a significant degree of association between the quality of the therapeutic relationships and certain of the change criteria. Parloff (1961) notes:

> The data indicate that the better the patient-psychotherapist relationship, the greater the symptomatic relief experienced by the patient, the more likely it was that fellow group members would describe the patient as having become more dominant (leader), and the greater the increase in objectivity attributed to the patient by the research staff (p. 35).

He also noted that:

> Premature termination of therapy by a patient appears to be related to his perception of the 'goodness' of the relationship he has established with his therapist relative to the general level of patient-therapist relationship within his group. Individuals having the poorer relationships in a group tended to drop out of therapy. . . . Patients who established better relationships with this therapist tended to show greater improvement than those whose relationships with the same therapist were not as good (p. 37).

Fiedler (1950, 1953), in a variety of studies, examined the therapeutic relationship ratings by therapist of different schools and with different degrees of training and reputed skill. The therapists included masters degree psychologists, doctoral psychologists, social workers, nurses, and medical doctors ranging in experience from one year to twenty-six years. The schools of psychotherapy represented included psychoanalytic, Washington School, Chicago, Nondirective, Adlerious, and Eclectic.

The studies indicated that "theoretical allegiance to one system of psychotherapy does not change the therapists' goal with respect to the relationship which he strives to create with his patient" (p. 244).

Quinn (1950) and Heine (1950) support Fiedler's and Parloff's findings. Quinn's research suggests that the therapist, not the patient, is the one who plays the major role in determining the nature of their consequent relationship. Heine requested patients treated by therapist of differing orientation to describe any changes they

experienced as a result of therapy and the aspects of the treatment which they attributed the changes to. The result indicated that patients of therapist from different schools describe factors leading to their change in terms of different treatment methods and also in terms of the same treatment relationship.

Other research dealing with the psychotherapeutic relationship has examined another variable--interpersonal attraction, interpersonal influence. The major contention of many writers is that psychotherapeutic efficiency may be enhanced by increasing the degree of therapist influence over the patient. Manipulation of a major component of the therapy relationship, that is, patient attraction to the therapist is offered as a means of increasing therapist influence.

Libo (1957, 1959) studied relationship in terms of interpersonal attraction. Utilizing Libo's Picture Impressious Test, a projective test consisting of four cards illustrating therapy like situations, client's were requested to respond in a manner analogous to TAT administration. The test was administered to a series of patients immediately following their initial psychiatherapy interview. The resulting score is expressed in terms of attraction to the therapist and the therapy process as judged from the protocols. As hypothetically the attraction-relationship score predicted whether or not a patient would return for

his second interview. The more attracted a patient was the more likely he was to return.

Helber and Goldstein's (1961) in replicating Libo's work provided additional supportive data of the notion that interpersonal attraction (as a measure of relationship) does contribute to clients "willingness" to continue therapy (i.e., through increased interpersonal attraction interpersonal influence appears to increase).

Wogon (1970) did a study of the effect of therapist-patient personality variables on therapeutic outcome. The study included eighty-two subjects (male and female) on the psychiatric ward of a medical tending hospital. Each patient was seen by one of twelve psychiatric residents. Both therapists and patients were given the MMPI. These results were used to derive personality measures. Factor scores for each therapist and patient were computed for each of the factor scales (anxiety, depression, withdrawal, subtlety, suppressed anger and somatization), and a matrix of scores generated. In addition to the therapist's and patient's scores, the matrix included the cross-product for each therapist-patient pair on each of the factor scales. The cross-products were used as indexes of therapist-patient similarity. Outcome measures were the Patient Rating Scale and the Therapist Rating Scale. These scales asked for ratings of the degree to which each felt he could communicate with the other and the degree of

liking for the other. Therapy outcomes were found to be positively related to therapist's level of anxiety and negatively related to therapist's level of repressiveness. The findings suggest that patients both liked their therapist and showed more progress in therapy if the therapist was able to acknowledge some forms of unpleasant experience in himself (anxiety) and tended not to deny symptoms in himself (repression). Therapist who denied symptoms was found to be less effective in terms of outcome behaviors demonstrated by the patient.

Bock (1951), Burdich and Burnes (1958), Goldstein et al. (1966) through their various experimental research support the notion that interpersonal attraction increases receptivity to interpersonal influence. McClelland (1965) in his therapy of motive acquisition suggests:

> 1. The more reasons an individual has . . . to believe that he can, will, or should develop a motive, the more . . . attempts designed to develop that motive are likely to succeed.
>
> 2. The more an individual perceives that developing a motive is consistent with the demands of reality (and reason), the more . . . attempts designed to develop that motive are likely to succeed (pp.324-325).

Thus it seems reasonable to speculate that an individual can be encouraged toward motive acquisition more readily if the therapist is successful in his interpersonal influence of the patient.

Another study by Strong and Schmidt (1970) suggests that unconscious motivations on the part of the counselor

do affect counseling outcome. In the study which attempted to examine trustworthiness and influence in counseling, the researchers found a positive effect on the relationship. Most interesting, however, was that counselors who were playing the "role" of untrustworthy were never the less seen by the patients as being "somewhat" helpful in the therapy situation. This was not the intention of the researcher, however, because of methodological weakness, the above was observed (comments by Strong & Schmidt, pp. 202-203).

The points of the above two research studies are two fold: (1) Patient client similarity can be measured on several different variables; (2) unconscious motivations on the part of the therapist is often expressed in therapy. More will be said of this later.

In the study by Kunce and Anderson (1970) it was hypothesized that in a free-choice situation a counselor would tend to have clients referred to him on the basis of subtle similarities between his personality characteristics and those of the clients. The MMPI was utilized in the study with a sample of sixty-three. Evidence was found to support the hypothesis.

In summary thus far, it appears that therapist-patient similarity measured through a variety of variables, does positively effect therapy relationship and outcome. Further it seems evident from the above studies that relationship does indeed appear to be a most central and

powerful psychotherapeutic variables. It is also evident from reviewing the literature (Tyler, 1961; Goldstein, et al., 1966) that the counselor's own feelings are believed to be important in this transaction. Tyler states that a counselor "should be an accepting person who finds it easy to be interested in diverse kinds of individuals and to wish them well." This is not a blanket attitude that covers all with equal warmth. Inevitably he will like some clients better than others. Because the counselor is a sensitive human being, he will react on an immediate unconscious level to subtle indications of hostility toward the client. Tyler further suggests that in such a situation the client should be referred immediately to another counselor. Other writers such as Freud, Ellis, Rogers, Horney, Kelly, and Adler, indicate that only certain types of clients are amenable to their particular therapy, therefore, clients should be carefully selected prior to extended treatment. As noted earlier Fiedler pointed out that "all psychotherapists have as their effective core, the interpersonal relationship rather than specific methods of treatment and that the relationship is created by the therapist who must convey feelings to the client rather than concentrate on method." Relationship then appears to be as important as the method in terms of therapy outcome.

Before considering the therapy of cognitive style, an additional comment is required regarding the concept of cognitive dissonance.

Goldstein, et al. (1966) comment:

> The notion that A's interpersonal attraction toward B increases A's receptivity to influence by B is . . . a significant point of convergence among four major contempory cognitive theories (p. 85).

The specific theories were the "balance" theories of Osgood and Tannenboum (1955), Festinger (1957), Heider (1958), and Newcomb (1943, 1956). Osgood, et al. report that "attitude change for a given object of judgment in the direction of the assertion is an approximately linear function of the favorableness of the original attitude toward the other object of judgment with which it is associated" (p. 54). Relationship has been described by Festinger in terms of cognitive dissonance reduction; Heider in terms of change toward balance states; and Newcomb viewed the attraction influence alignment as a "strain toward symmetry."

The implied common theoretical thread is that for A to be attracted to B while remaining nonreceptive to B's attempts to influence results in imbalance, asymmetry, or cognitive dissonance more readily than had A accepted B's efforts to influence.

Bock (1951) and Burdich and Burnes (1958) supplied experimental research evidence supporting the above notion. These theories suggest that interpersonal attraction and interpersonal influence might be diminished as a result of "imbalance," "asymmetry," or "cognitive dissonance" between therapist and client. Festinger's (1957) cognitive dissonance theory speaks about conditions that arouse dissonance in an

individual and the various ways in which dissonance reduction takes place. The focus of the theory is on cognitive elements and the relationship between them. Cognitive elements are items of information, knowledge, opinion, as belief about one-self, one's behavior or one's environment. Two cognitives are said to be consonant if they are mutually consistent, that is, if one follows from, implies, or is compatible with the other. Dissonance is said to exist when two cognitive elements, occurring together, are mutually inconsistent.

The existence of dissonance, being psychologically uncomfortable, will motivate the person to attempt reduction of the dissonance and achieve consonance. When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance. Dissonance then is the existence of nonfitting relations among cognitious and is a motivating factor.

The notion is presented that if the therapy relationship is less than favorable, for whatever reason, cognitive dissonance might be the result. Hill (1967), Blanzy (1970) DeLoach (1970) have demonstrated that when students are taught employing methods centered around the students cognitive style, as defined by Hill (1967), the student's performance in class is improved. It has also been reported that students with teachers of similar cognitive style tend

to perform in school more successfully than those students with dissimilar cognitive styles. It has been suggested, DeLoach (1969, 1970) that cognitive style disperity is an antecedent of cognitive dissonance.

The literature seems to support the following notions: that it is imperative a good working relationship be established between the client and the therapist regardless of the method of psychotherapy itself; that it is not possible for the counselor to get along equally well with all prospective clients and he must be able to recognize his limitations; that in order for therapy to be truly effective the therapist-client relationship must be positive; and finally that positive therapy outcome is enhanced when there is a good quality counselor-client relationship; the dynamics between therapist and client are important in forming a therapeutic relationship; interpersonal attraction is related to interpersonal influence; if the relationship is not harmonious then imbalance, asymmetry or cognitive dissonance is said to occur; therapist effectiveness is reduced by a poor relationship and motive acquisition and positive observed behavior is enhanced through a positive therapeutic relationship.

This study introduces the notion that through cognitive style matching, the formation of a therapy relationship might be enhanced, and that counselors can be

matched with clients with whom they will be effective. Through matching clients and counselors utilizing cognitive style mapping, it is postulated that patient interpersonal attractions to the therapist will be enhanced thus increasing interpersonal influence resulting in accelerated motive acquisition and positive observed behavior.

The Theory of Cognitive Style

An Overview

This section consists of two parts: the first is a overview of cognitive style, the second is for those readers who might be interested in an indepth analysis of the therapeutical and mathematical deviations of Hill's Cognitive Style concept.

Joseph Hill (1968) has developed a cognitive style instrument which identified the client's methods of receiving meaning from his own existence. Hill has defined the educational process as a seeking of knowledge and meaning. This can further be expanded to include the concept of counseling in that counseling is essentially a means of enhancing the client's ability to seek meaning from his own life. Hill has further demonstrated that it is possible to match the cognitive style of the teacher and student and thereby enhance the student's probability of success in school. A mis-matched student/teacher results in a higher

probability of the student either being dissatisfied or failing in school.

This research attempts to match cognitive styles of the counselor with that of the client in hopes of enhancing a quality therapeutic relationship thereby increasing the probability of a positive therapy outcome. Before discussing this aspect of the research further, the theory of cognitive style itself must be examined.

The construct of cognitive style, according to Hill, has been developed as one of the educational sciences and is therefore, different from those defined and described in the field of psychology. Hill employed a modified form of Guttman's meta theory of facets as a model. The concept of cognitive style is expressed as, what mathematicians call, a Cartesian product of sets. In this context, cognitive style can be considered somewhat related to Guilford's dimensions of intelligence (Guilford, 1967).

Guilford's model is a Cartesian product of three sets that represent intellect, content and "things," whereas Hill's Cartesian product is designed to represent cognitive style composed of the following four sets:

1. Symbols and meanings
2. Cultured determinants of the meanings of symbols
3. Modalities of inference
4. Neurological, electrical chemical and biochemical aspects of memory storage and learning

As Hill pointed out, because of the highly speculative nature of the fourth set, his present Cartesian product representing cognitive style is limited to the first three sets.

Cognitive style, then, is a vehicle which can be employed in diagnosing individuals and prescribing activities that provide the highest probability of accomplishing successfully the educational or behavioral task confronting him. It is important to note that an analysis of the student as well as the substance of the educational or counseling task requires a similar analysis. According to Hill, the counselor or teacher should be skilled in the use of information pertaining to symbols and meanings, perceptions, differential patterns, biochemistry of memory, cognitive styles, and systematic analysis and decision making so he can adequately evaluate, prescribe and then make adjustments to correct inefficiencies in the individual sub-systems.

The cognitive style map is composed of three factors: Symbols; Cultural Determinants of the Meanings of Symbols; Modalities of Inference. Fragale, Svagr, Zussman (1971) have summarized the conceptual framework as follows:

I. SYMBOLS

Man is a creature that searches for meaning through the use of symbols. These symbols are theoretical (words, numbers, and graphic symbols) or qualitative (sensory

and code data). It is impossible to communicate with people without using one or both of these forms of symbols. The theoretical symbol forms a means for communicating experiences or generalizing about the past, present, and future and may be either auditory (spoken) or visual (written). In turn, each of these types can be identified as linguistic or quantitative. These forms are:

1. The Theoretical Auditory Linguistic-T(AL)-the sound of a word or graphic symbol.
2. The Theoretical Auditory Quantitative-T(AQ)-the sound of a number or a mathematical symbol.
3. The Theoretical Visual Linguistic-T(VL)-the written word or graphic symbol.
4. The Theoretical Visual Quantitative-T(VQ)-the written number or mathematical symbol.

The qualitative symbols derive their meanings from: (1) sensory stimuli, (2) humanly constructed formalisms (codes or games), and (3) the programmatic effects of phenomena which convey an impression of a definite series of images, events, or operations. Identified qualitative symbols are:

1. The Qualitative Auditory-Q(A)-symbol is the perception of meaning from non-verbal sounds.
2. The Qualitative Olfactory-Q(O)-symbol is the obtaining of meaning from odors, smells, or aromas, etc.

3. The Qualitative Savory-Q(S)-symbol is the mediation of meaning through taste.
4. The Qualitative Tactile-Q(T)-symbol is the gaining of meaning through the sense of touch.
5. The Qualitative Visual-Q(V)-symbol is the ability to derive meaning from what one sees.
6. The Qualitative Proprioceptive-Q(P)-symbol is the ability to combine or coordinate imputs from muscular functions into a specific response or operation which is monitored by sensory imput, e.g., as in running to and catching a baseball or typing from written material.

Organizing the qualitative symbolic codes in like manner:

1. Qualitative Code Empathetic-Q(CEM)-is the ability to put yourself in another's place, e.g., to know how it feels when someone hits his thumb with a hammer.
2. Qualitative Code Esthetic-Q(CES)-is the ability to enjoy the beauty of an object or an idea.
3. Qualitative Code Ethic-Q(CET)-is commitment to specific values or duties.
4. Qualitative Code Histrionic-Q(CH)-is the ability to deliberately stage behavior to produce a desired effect.

5. Qualitative Code Kinesics-Q(CK)-is the ability to communicate through bodily movements or peripheral vascular reactions.
6. Qualitative Code Kinesthetics-Q(CKH)-willingness and interest in acquiring motor skill abilities.
7. Qualitative Code Proximics-Q(CP)-is the ability to judge the appropriate physical and social distance between oneself and another as defined by the other person, e.g., being able to recognize if you may put your arm around that girl or call the boss by his first name.
8. Qualitative Code Synnoetics-Q(CS)-is knowledge of one's abilities, i.e., being able to establish realistic goals for oneself.
9. Qualitative Code Transactional-Q(CT)-is the ability to establish with others a positive communication system which influences their actions or goals, e.g., to convince someone that your way is best.

II. CULTURAL DETERMINANTS OF THE MEANINGS OF SYMBOLS

The meaning brought to man by symbols is influenced by the person's culture and experiences. A person interprets the theoretical and qualitative symbols as an individual in a role that has specific expectations. These expectations are imposed by societal norms, peers or associates, or the family and exert

an influence over the person throughout his life. What the person perceives as the meaning of symbols is greatly determined by:

1. his associates -A- or peers-this is represented by the various groups with whom the person has the greatest contact and changes throughout life.
2. his family -F- this is either immediate or extended or surrogate changing throughout life.
3. his individuality -I- this is the person's innate knowledge that his is the best way along with his ability and willingness to direct his behavior accordingly.

III. MODALITIES OF INFERENCE

The meanings of symbols are influenced also by the modes of inference or reasoning that the individual has a tendency to employ in an effort to formulate hypothesis. There are two classifications of modes of inference. First, are the inductive processes which yields probability conclusions. Second is the deductive process which yields a logically necessary conclusion derived from the given information. There are four inductive inference processes, which are classified as:

1. Magnitude -M- is categorical thinking, i.e., using rules, definitions, and/or classifications.

2. Differences -D- is the emphasis of one-to-one contrasts of selected characteristics or traits.
3. Relationships -R- is the comparison of two or more selected characteristics or traits through similarities.
4. Appraisal -L- is the process involving the application of Magnitudes, Differences and Relationships in reaching a probability conclusion.

Circle K -(K)- is the deductive inferential process. This inferential process is utilized most frequently in logical proofs, e.g., in mathematics and in symbolic logic.

Hill, et al. (1967, 1968, 1969, 1970, 1971) have demonstrated a significant improvement in outcome performance when a student has been assigned educational tasks according to his cognitive style as compared with the regular educational methods. When student and teacher are matched, according to cognitive style, the teacher is more efficient and the student learns readily. Cognitive style matching has therefore been demonstrated to be an effective method of improving "teaching." This work seeks to test this same notion as applied to the field of Counseling.

If, as the research indicated, the therapeutic relationship is important, then it appears logical to match therapist-client cognitive style as a means of

enhancing this relationship and thereby speeding therapy outcome.

Comprehensive Study of Hill's Cognitive Style Theory

The following represents a synthesis of Hill's work including forty doctoral dissertations dealing with the concept of cognitive style (Wasser, 1971; Hill, et al., 1967, 1968, 1970).

A Conceptual Framework of Education

"If education is to be regarded as a relatively rigorous applied field of information, similar to those of medicine, engineering, and pharmacy, its conceptual framework must reflect a scientific orientation " (Hill, 1968, p. 1). Various kinds of factoral descriptions, concepts, generalizations, laws and theories could comprise a scientific conceptual framework for education. It is, therefore, necessary to recognize that the conceptual framework which will probably best serve the purposes of education will be composed of a set of disciplines which one might call the educational sciences. Presuming this notion is assumed, then the framework can be mapped in terms of the sciences considered to be fundamental to the educative process.

Hill has identified seven strata to construct a conceptual framework unique to the applied field of

education. These strata are: (a) symbols and their meanings, (b) cultural determinants of the meaning of symbols, (c) modalities of inference, (d) neurological, electrochemical, and biochemical aspects of memory functions, (e) cognitive styles of individuals, (f) teaching, administrative, and counseling style, and (g) systemic analysis and decision making.

Cognitive Style as an Educational Science

History has demonstrated psychologists interests in studying the consistency and predictability of personality. Allport suggests the concept of "style," which essentially he defined as the consistency and pattern of expressive behaviors that individuals manifest in performing various types of activities. In the context of Allport's descriptive definition of style, the term is highly similar to its common use in such expressions as: an individual's way (style) of living, a style of speaking, a style of writing, or a style of dress. This orientation permits the use of the term "style" to denote an entire pattern of responses, a way of life, and also a class of events.

Traditionally approached investigations of cognitive behavior have dealt mainly with concept formation. Studies of this nature have been limited to considerations such as: what are concepts?, how are they obtained?, or how are they learned? Essentially these investigations

have studies various ramifications of what could be termed "concept learning." These types of studies however, have not re-examined cognitive functions in the context of personality.

During the past 15 years Hill and others have studied the concept of cognitive style in the context of cognition as a facet of personality. Witkin has advanced the notion that the phenomena described as cognitive style is a type of personality structure expressed in the interaction between perceptual (cognitive) response systems and antecedent conditions in the life history of the person. In this context then, Hill was interested in such phenomenon as the quality of mother-child relationships as antecedents to certain types of cognitive styles. According to Hill:

> certain contemporary studies of cognition have been designed to consider the phenomena as a particular individual's mode of response to a given set of stimuli (variables). Other modern efforts have sought antecedents, or correlates, between cognitive style and: (1) such personality variables as: dependency, anxiety, and passivity; (2) such cognitive variables as: intelligence, problem solving, and reasoning; and (3) such psychological processes as: learning and preception (Hill, 1968, p. 2).

Essentially contemporary studies of cognitive style involve the investigation of cognitive processes in the context of personality and defined social variables. Investigators such as Hill and other psychologists (e.g., Broverman, Gardner, Kagan, Moss, Sigel, and Witkin) recognize that cognitive

behaviors form a fundamental part of the socio-personal matrix, and that the employment of certain classes of behavior called "cognitive" have consistent qualities which justify their being defined as stylistic.

An important and central point of cognitive style theory is that individuals are unique in that they search for meaning in many remarkable and diverse ways. Each person possesses his own "style" for making sense out of his world and discovering answers to the question. "What's happening and why?"

The educational science of cognitive style considers individual modes of meaning-seeking behavior in a manner that allows the social scientist (i.e. educator, psychologist, social worker, rehab counselor) to communicate accurately and precisely, without misappropriate labels and concepts, about each individual (client, student) unique search for meaning.

The educational science of cognitive style is comprised of four sets of distinct but highly correlated sciences: (1) symbologosics--the educational science of symbols and their meanings; (2) determanitics--the educational science of cultural determinants of the meaning of symbols; (3) inferensics--the educational science of modalities of inference; and (4) the educational science of biochemical and electrophysiological aspects of memory. However,

since the body of information pertaining to the fourth set is highly speculative at this stage of its development, cognitive style is at present defined by the first three sets.

Symbologosics--the Educational Science of Symbols

A distinguishing characteristic of human activity is the creation, translation and transformation of symbols to the end of producing meaning. As fundamental elements of intellectual activity, symbols are requisite to man's search for and realization of meaning. Man is capable of acquiring and mediating meaning through the creation and utilization of two types of symbols: (1) theoretical symbols (e.g., words and numbers) and (2) qualitative symbols (e.g., sense data).

The Theoretical Symbol

The theoretical symbol can best be characterized as an arbitrarily selected reference which signifies an object. The most familiar forms of these symbols are words and numbers.

Definition: the Theoretical symbol is that symbol which represents to the "awareness" or nervous system of the individual something different from that which the symbol itself is.

Theoretical symbols include percepts, private interpretations of sensations, and concepts, shared and agreed upon interpretations of sensations which are capable of being generalized. Thus, words and numbers

are the most common forms of theoretical symbols. This definition conforms to the usual or standard definition of a symbol as being representative of something other than what it itself is.

Theoretical symbols comprise a class which can be divided into two sub-classes: (1) visual symbols and (2) auditory symbols. Each of these categories consists of linguistic and quantitative elements. In this context, linguistic refers to words and quantitative indicates numbers.

The theoretical visual linguistic symbol.--Theortical visual linguistic symbols are written or printed words, such as the expressions on this page, which bring to the "awareness" of the reader imageries different from the printed arrangement of the letters and words involved. That is, configurations of these letters stand for something other than randomly assigned marks on paper. They help stimulate sensations and imageries in the nervous system of the reader which convey meanings that can be both interpreted individually (percepts) and generalized (concepts).

The theoretical auditory linguistic symbol.--Theoretical auditory linguistic symbols are sounds of words which bring to the "awareness" of the listener imageries different from the arrangement of the sounds involved. Configurations of sounds help stimulate

sensations and imageries in the nervous system of the listener which transmit meanings that can be generalized (concepts) in addition to being interpreted individually (percepts).

Since the sound of the letters "b," "o," and "y" for example, do not bring to the individual's "awareness" an imagery that differs from the sound of the letter themselves, they are not a theoretical auditory linguistic symbol. If, however, we rearrange the letters "o," "y," "b" to form the word "boy" (representing a concept), then their sounds would comprise a theoretical auditory linguistic symbol since the sound would bring to an individual's nervous system an image (percept) different from the sounds of the letters themselves.

The theoretical visual quantitative symbol.--The theoretical visual quantitative symbol is the written or printed number which can be interpreted individually and generalized. In the theoretical visual symbolic form it may be difficult to determine whether the printed or written expression of a number, e.g., "five," is considered to be a number [quantitative] or a word [linguistic] by the individual involved.

Under these circumstances, should the printed numeral "5" (representing a concept) bring to the nervous system of the individual an imagery (percept), e.g., a

picture (qualitative visual symbol) of five persons, different from the printed expression of the numberal itself, then "5" would be an example of a theoretical visual quantitative symbol.

The theoretical auditory quantitative symbol.--The theoretical auditory quantitative symbol is the sound of a number which produces percepts and concepts by presenting to the nervous system of the individual something different from that which it itself is. For example, the sound of the number "three" (representing a concept) brings to the "awareness" of the individual an imagery (percept), e.g., a qualitative visual picture of three grapes, different from the sound itself. (Although in theoretical auditory symbolic form it is not easy to specify whether the sound "three" should be considered as a number [quantitative] or a word [linguistic] by the individual involved, in the interest of clarity, the theoretical auditory quantitative symbol is arbitrarily defined and said to exist).

In its complex form, this symbol is the set of sounds selected by the individual's nervous system from a series of algebraic (in its generic sense) terms forming some type of mathematical expression to form a set of images different from the sounds of the terms themselves. For example, in considering the following problem,

presented orally: "What is the value of X if 2X + 6 = 12?" both the auditory linguistic and the auditory quantitative theoretical symbols involved bring to the individual's "awareness" a set of images which are possibly a picture (qualitative visual symbol) or an image of the problem different from the sounds of the question formed by the words and numbers comprising it.

The Qualitative Symbol

Meaning is usually associated with the theory of signs and symbolic logic. In this context, meaning is defined in terms of the lexical and grammatical aspects of linguistics and the formal and functional analyses of logic. This approach limits meaning to the realm of the theoretical symbol.

Meaning in the context of the educational sciences is associated not only with the realm of the theoretical symbol but with that of the qualitative symbol as well. This association is based on the assumption that man is capable of mediating each of these two related but different types of symbols into meaning.

Definition: the Qualitative symbol is that symbol which presents and then represents to the "awareness" of the individual that which the symbol itself is to that individual.

These symbols, for example, are employed by infants in the process of acquiring and mediating meaning before

they have attained any theoretical symbolic capabilities. Babies, for instance, can "feel" (qualitative tactile) cold temperatures before they have the ability to say, "I am cold" (theoretical auditory linguistic symbol). In addition, children begin at an early age to acquire qualitative symbolic code systems, e.g., esthetics, ethics, kinesthetics, which, with modifications, they tend to retain throughout their lives. Under circumstances such as these, qualitative symbols derive their meanings from three sources: (1) sensory stimuli, (2) humanly constructed formalisms such as codes or "games" and (3) programmatic effects of objects or phenomena which convey an impression of a definite series of images, scenes, events or operations.

Sensory Stimuli

Since qualitative symbols are those symbols that present and then represent to the nervous system of the individual that which they (the symbols) themselves are to that individual, they are associated with the five perceptive senses of man: (1) visual, (2) auditory, (3) tactile, (4) savory and (5) olfactory. Qualitative sensory symbols, consequently, become forms of immediately attained individualized meanings or perceptions.

1. The qualitative visual symbol presents and then represents to the individual visual entities, such as size, shape and color, whose meanings are attained

immediately but which cannot be generalized. (Contrast this to theoretical linguistic symbols, i.e., the spoken or written word, which can be both interpreted individually and generalized.) For example, the shade of red of a particular object presents to the "awareness" of the individual, and then represents to that person, that which it (the shade of red) itself is to him. In order for two or more individuals to approximately share knowledge of that shade of red exhibited by the object at a given time, it is necessary that these persons observe the object at that point of time. In addition, the quality of "redness" cannot be "known" by someone who has never seen this symbol. The sense stimuli residual remaining in the "awareness" of the individual as the result of his observation of the shade of red is, in essence, the "stored" qualitative symbol.

2. The qualitative auditory symbol presents and then represents to the individual perceived sounds, such as music, hammering and drilling, whose immediately attained meanings cannot be generalized. A strain of music, for instance, produced by an instrument presents and then represents to the nervous system of the individual that which it (the strain of music) itself is to him. This symbol can be only approximately shared by persons who hear it at the same point of time. It cannot be shared with a person who has never heard the symbol (the strain

of music). The sense stimuli residual "recorded" in the individual's "awareness" as a result of his hearing the music is the "stored" qualitative symbol.

3. The qualitative tactile symbol presents and then represents to the individual various tactile sensations, such as skin sensitivity to temperature changes or the ability to determine the composition of various objects by touch, whose meanings are attained immediately but which cannot be generalized. The feel of a particular swatch of valvet, for example, presents and then represents to the "awareness" of the individual touching it that which it (the feel) itself is to that person. Knowledge of this symbol cannot be attained by an individual who has never felt this piece of velvet. The residual of the sense stimuli "registered" in the nervous system of the person as the result of his feeling the velvet is, in substance, the "stored" qualitative symbol.

4. The qualitative savory symbol presents and then represents to the individual perceived tastes, such as the flavor of wine, whose immediately attained meanings cannot be generalized. For instance, the taste of a particular type of dessert presents and then represents to the nervous system of the individual that which it (the taste) itself is to that individual. This symbol cannot be shared with someone who has never tasted the dessert. The sense stimuli residual remaining in the nervous system of the person as

the result of his tasting that particular type of dessert is essentially the "stored" qualitative symbol.

5. The qualitative olfactory symbol presents and then represents to the individual a variety of olfactory sensations, such as the scent of flowers, whose meanings are attained immediately but which cannot be generalized. The aroma of frying bacon and coffee in the morning at a camp site, for example, presents and then represents to the "awareness" of the individual that which it (the aroma) itself is to him. Knowledge of this scent cannot be apprehended by a person who has never experienced the aroma presented and represented by this symbol. The olfactory sense stimuli residual "recorded" in the nervous system of the individual as the result of his smelling the aroma in question is the "stored" qualitative symbol.

The qualitative symbol is composed of the sense stimuli residual associated with the object of the symbol that remains or is "stored" in the nervous system (brain, spinal cord, sub-system of nerves) of the individual. In essence, qualitative sensory symbols are "what they are" to each perceiving individual--figurative, as opposed to literal, expressions that convey and express meaning through the senses of sight, hearing, touch, smell and taste.

Programmatic Effects

The ability to synthesize stimuli produced within the body into a manifest intelligent behavior is termed "proprioceptive." This ability is exhibited in the performance of many tasks (e.g., typing, which may require the synthesis of an individual's qualitative visual and tactile skills with his qualitative kinesthetic capabilities). Other complex activities, such as heading a neurosurgical team, orchestra-conducting, playing a musical instrument while reading music or any other seeming "automatic" activity, may require the synthesis of additional qualitative intellectual competencies. Such functional operations and events are programmatic and, in effect, are sources of meaning for qualitative symbols. Under these circumstances, qualitative proprioceptive, the qualitative symbol which is the device for transmitting and expressing meanings associated with programmatic effects, becomes, as does each qualitative sensory symbol, a form of individualized meaning.

Codes

Qualitative symbolic codes derive their meanings from humanly constructed formalisms, such as "games." As symbols, they are vehicles by which meanings are expressed in mosaic or figurative patterns which tend to produce immediate insights into the "worlds" or realms under

consideration. Whereas generalization is the concern of theoretical symbolic languages, qualitative symbolic codes are oriented toward forms of subcultural individualism, i.e., they comprise unified patterns of subjective meanings as distinguished from the individualized meanings inherent in qualitative sensory and proprioceptive symbols.

To clarify the nature of the nine qualitative symbolic codes, they are defined as follows:

1. Qualitative code empathetic--the ability of an individual to identify with, or have a vicarious experience of, another person's (or persons') feelings, ideas or volitions. This ability, for example, is demonstrated by the "empathizer" executing gestures, gesticulations and bodily movements supplemented by facial expressions that are sympathetic with the moods and/or bodily movements of the other person.

2. Qualitative code esthetic--the ability of a person to view with enjoyment the "beauty" and "pureness" of a resulting product, situation or idea. For instance, students who appreciate paintings, geometrical theorems, music, historical analogies and scientific generalizations exhibit this capability.

3. Qualitative code ethic--a commitment to a set of values, a group of moral principles, obligations and/or duties. This ability would be exemplified by a student who feels it necessary and thus is determined to complete

all of his homework assignments or a bank robber who insists on finishing the job while under fire.

4. Qualitative code histrionic--artificial behavior, staged conduct or a deliberate exhibition of emotion or temperament to produce some particular effect in, or evoke responses from, other persons. Actors and actresses are especially noted for their possession of this type of ability. Not to be outdone, of course, are teachers and trial lawyers.

5. Qualitative code kinesics--the ability of an individual to communicate by means of nonlinguistic functions and motions of the body, such as blushes, shrugs, gesticulations and gestures. Perhaps, up to 93% of human communication is comprised of "body language." Revealing moments occur, for instance, when a person smiling and speaking with a gentle voice, keeps his fists tightly clenched.

6. Qualitative code kinesthetics--comprised of motor skill abilities and bodily reactions, such as threshold of awareness (limen) of different weights, athletic performances, ballet and finger dexterity. Excellent typists, dancers and athletes are examples of groups of people who enjoy this capability.

7. Qualitative code proxemics--the ability of a person to judge and effect "critical" physical and social distances (e.g., closeness, estrangement) between himself and others in the act of communicating, such as a culturally

determined "permissible" physical or social distance people maintain between them during conversations. This ability is shown by the individual who knows when not to slap you on the back or the girl who is aware of how close or how far she should stand from a male acquaintance.

8. Qualitative code synnoetics--the possession of personal knowledge of oneself in all qualitative and theoretical symbolic forms which constitute the totality of the individual in relation to his environment. The person who knows himself well enough so that he is able to select realistic goals is an example of an individual who ranks high in this capability.

9. Qualitative code transactional--the ability of an individual to maintain a positive communicative interaction which significantly influences the goals of persons involved in that interaction. This ability was exemplified by such political leaders as Roosevelt and Hitler and is frequently exhibited by informal group leaders.

Where theoretical symbols are used in ordinary languages to communicate ideas in a connected, consecutive manner, according to the principles of common logic, the qualitative symbols are used to convey feelings, commitments, values and to provide particular types of insights into the domain of "self." The main function of the qualitative symbol is figurative expression, not literal statement.

Theoretical symbolic languages are oriented toward generalization, qualitative symbolic codes toward subcultural individualism.

Theoretical symbolic languages present meanings in linear sequential patterns. Qualitative symbolic codes transmit meanings in the form of mosaic patterns which tend to produce direct or immediate insight. Meaning is derived from ordinary (theoretical symbolic) languages at the termination of a presentation either implicitly or explicitly, while the figurative (mosaic) expressions of qualitative symbols in either sensory, code or programmatic form present meaning in an immediate sense.

Qualitative symbolic codes have a unique logic, involving distinctive patterns (mosaics), characteristic orders and relationships. As forms of meaning they are not random, disconnected entities, but neither does their organization tend to follow the necessary sequential patterns of theoretical symbolic rationality. In this context, qualitative symbols are sometimes mistakenly thought of as irrational expressions of experience such as emotions. Actually, qualitative symbols are employed extensively by man to solve problems and interpret the various worlds that comprise a variety of human situations. Under these circumstances, the essential distinction between ordinary languages and qualitative symbolic codes is not found in their applications, but in differences between the classes

of symbols in which they are expressed, i.e., between the theoretical symbols used in ordinary languages and the qualitative symbolic forms comprising the codes. Expressions composed of qualitative symbols are more appropriate than theoretical symbolic statements when the purposes of communication are best served by direct presentation of forms instead of sequential elements that ultimately yield conclusions.

Qualitative symbols, whether they be in sensory, code or programmatic form, are individual (and sometimes subcultural) objectifications of subjective states of meaning. In this context, qualitative codes are unified patterns of subjective meanings, while the qualitative symbols associated with the five senses and programmatic effects become forms of individualized meanings.

Review

For purposes of review and clarification, the major classifications identified in the discussion of symbologosics are restated below in outline form with the addition of abbreviations for each element. Capital letters express major orientations, small letters minor orientations--the determination of which is explianed later in this chapter.

1. Symbologosics (S)

   A. Theoretical symbols (T)

      1. Theoretical visual linguistic (T_{vl}, t_{vl})

      2. Theoretical auditory linguistic (T_{al}, t_{al})

      3. Theoretical visual quantitative (T_{vq}, t_{vq})

      4. Theoretical auditory quantitative (T_{aq}, t_{aq})

   B. Qualitative symbols (Q)

      1. Sensory stimuli

         a. Visual (Q_v, q_v)

         b. Auditory (Q_a, q_a)

         c. Tactile (Q_t, q_t)

         d. Savory (Q_s, q_s)

         e. Olfactory (Q_o, q_o)

      2. Programmatic effects

         a. Proprioceptive (Q_p, q_p)

      3. Codes

         a. Empathetic (Q_{cem}, q_{cem})

         b. Esthetic (Q_{ces}, q_{ces})

         c. Ethic (Q_{cet}, q_{cet})

         d. Histrionic (Q_{ch}, q_{ch})

         e. Kinesics (Q_{ck}, q_{ck})

         f. Kinesthetics (Q_{ckh}, q_{ckh})

         g. Proxemics (Q_{cp}, q_{cp})

         h. Synnoetics (Q_{cs}, q_{cs})

         i. Transactional (Q_{ct}, q_{ct})

Determantics--The Educational Science of Cultural Determinants of the Meaning of Symbols

Man derives meaning for symbols not as a totally unique person, but as an individual cast in a social role which has definitions and expectations imposed upon it by societal norms, other individuals and groups with which the individual interacts. Therefore, an individual's symbolic mediations are influenced greatly by his own roles in various groups, roles of other group members and the interactions of these roles. It is in this context that the groups of family and associates, together with a person's individuality, are considered to be the main cultural influences at work on the individual throughout his life. Consequently, those groups which exert the main influence on him determine, in great part, his perceptions of life.

Each determinant is, in effect, a synthesis of selected aspects of the concepts: "cultural perceptions," "norms" and "roles." These syntheses can be used to define major and minor classifications to describe the influence of the determinants on the theoretical and qualitative symbolic mediations of the individual. Although each of these determinants influences the individual's interpretations

of theoretical and qualitative symbolic information pertaining to a given educational task, the relative strength of its influence tends to vary with the age of the person and the level and conditions of the task. Since these determinants seem to be almost omnipresent in a person's theoretical and qualitative symbolic mediations and influence greatly the meanings he ascribes to them, the determinants are fundamental considerations of any effort to educate.

The Family Determinant

It is reasonable to assume that the meanings of symbols for the individual during the early stages of his life are affected greatly by the group of persons he considers to be his family. Between the ages of four and seven the child is developing a set of code systems, and in the process is also beginning to develop what Parsons terms his "individuality." However, the main influence on the meaning of the symbols being acquired by him during this stage of his life is usually the family. Thus, most children participating in pre-school projects or nursery school programs, and those enrolled in early elementary school education (grades K-3) will be influenced mainly by the family and individuality cultural determinants.

The family determinant in the early stages of a person's life is mainly composed of those societal norms

and role expectations which the family as a group tends to support and propagate. Since the individual is a member of a family, his symbolic mediations tend to have some influence on the norms and roles that family members in primary roles (e.g., father, mother) expect him to accept and internalize. In this manner, the individuality of a person begins to take form and develop to a greater or lesser degree.

The Associates Determinant

Although the meaning of symbols for a young child is usually affected considerably by his family, the rapidity with which he frequently learns from other children indicates that the effect of the associates determinant is at work early in the life of the individual. As the individual grows older and his sphere of acquaintances (associates) expands, the influence of the associates determinant tends to increase. The conflict resulting from the difference between the norms and role expectations held for him by his associates and those which his family wish to have him accept and internalize influences the development of his individuality.

The associates determinant begins to "show" its influence on most elementary school-age children, especially during the time they are in grades four to six. This influence tends to increase for most persons until they

attain the age of 17 to 19. After that point, but depending greatly upon the situation (e.g., joining a fraternity or a gang), the influence tends to decline in favor of the individuality or the family determinant (for example, when an individual marries and starts a "new" family). If a person, however, becomes a member of a profession, a labor union or a strong social organization that emphasizes brotherhood, the opportunity for the associates determinant to become a major influence exists, and his symbolic mediations may be affected accordingly.

The Individuality Determinant

The individuality determinant is composed of the physiological, neurological, biochemical and electrochemical "structures" of an individual's body, modified, in part, by the societal norms and role expectations, brought to bear upon his "awareness" (nervous system) by his family, associates and physical environment. The individuality of a person begins to develop at the earliest stages of life and continues a form of developmental change throughout his lifetime.

This determinant manifests itself in the form of the willingness of the person, based upon his individuality, to bring his own influence (definition) to his symbolic mediations. The so-called "self-taught" person will usually reflect a high degree of individuality in solving problems

or explaining phenomena. This particular type (self-taught) individual might mispronounce certain words (although he knows the meaning of them) and will tend to use them in an unusual sense (although the definitions of the words might be interpreted in the sense in which he has employed them). Persons found in leadership roles usually reflect either a major or minor individuality influence on their symbolic mediations.

Review

To review the discussion of the main points considered in determantics, they are summarized in the outline below. It must be noted that the family, associates and individuality determinants are not exclusive in the sense that an individual can possess only one of them. (Major determinants are written with capital letters, minor determinants with small letters.

II. Determantics (E)
  A. Family (F, f)
  B. Associates (A, a)
  C. Individuality (I, i)

Inferensics--The Educational Science of Modalities of Inference

One quality distinguishing man from other animal species is the uniqueness of the inference processes employed by him in his search for meaning. The educational science of modalities of inference, inferensics, deals with the diverse methods of mediating into meaning theoretical and qualitative symbols whose meanings are influenced by

family, associates and/or individuality determinants. Since, generally speaking, there are two principal methods of symbolic mediation, deductive and inductive, inferensics consists of both deductive and inductive inference processes.

Inference is of a dual nature: First, it is the process used to derive a conclusion and, second, it is the conclusion which is derived from the data.

A modality of inference can be classified as either an inductive or deductive process, depending upon the manner in which the conclusion it produces is derived. An inductive logical process yields a probability conclusion. A deductive logical process produces a conclusion which is a logical necessary consequence resulting from that particular chain of reasoning. The inductive process produces an experienced-based probability conclusion of the type that man continuously makes. From previous experience, for example, we might conclude that it is safe to cross the street because the nearest moving vehicle is over one block away, or that tomorrow will be a day possess of bounteous, beautiful weather signaled by the bright-red sunset today. Perhaps an individual has an appearance highly similar to that of another person whom we consider to be honest, hence we might conclude that that individual is probably honest, also. Or a man is tall and appears to be muscular. From past experience, we might conclude that he, too, is probably strong.

Inductive Processes

The advancing of an hypothesis is the first step of an inductive inference process. Considered in this light,

the hypothesis plays an unusual role in the process of inquiry or deriving a conclusion. It is an antecedant to the extent that it provides direction for and imposes limits upon the process, and it is a consequence of the inquiry in that it terminates the procedures by being accepted or rejected.

Using the process of statistical inference as a model to construct a body of information composed of factual descriptions, concepts, generalizations and principles which refers to the inductive modalities of inference of an individual, the following six-step process is considered to be the generalized form of these types of modalities:

1. Advancing the hypothesis for testing;
2. Determining the acceptable amount of risk for making either (a) the error of rejecting a true hypothesis or (b) accepting a false hypothesis;
3. Calling upon a universe of samples of experience that seem to pertain to the "world" referred to in the advanced hypothesis;
4. Defining the critical regions of the universes of experience being employed by establishing limits beyond which, if the information yielded by the observations comprising the samples occurs, the hypothesis must be rejected;
5. Calculating the values of the variables involved from the information provided by the observations comprising the samples being employed;

6. Making the decision to accept or reject the hypothesis.

Following the prescriptions of the model of statistical inference, it is assumed that man can advance only three different types of hypotheses and is limited to four inductive inference processes for drawing probability conclusions. The three hypotheses are classified as: (1) magnitude, (2) difference, and (3) relationship. The four inference processes are: (1) magnitude, (2) difference, (3) relationship, and (4) appraisal, or evaluation.

Magnitude

The inference process called "magnitude" deals with deriving a probability conclusion to accept or reject the advanced hypothesis which is one dealing with magnitudes consisting of norms, categorical classifications and attitudes accepted as true by the individual. Magnitude inferential patterns, for example, are exemplified by teachers who grade solely on test scores and dutifully fail those students who fail to meet their standards, by corporation presidents who constantly demand that their employees always follow the company chain of command and by those persons who insist on following the letter of the law. A magnitude modality of inference is neither good nor bad. Basically, it consists of the valuing, forming and advancing of hypotheses composed of norms, attitudes

and categories considered true by the individual in the process of producing probability conclusions. For instance, the statement, "Schools are better today than ever," implies a value of the present-day educational system which is worthy of use as a norm or standard of past and contemporary society. The magnitude inference process, then, is concerned with deriving a probability conclusion to reject or accept the advanced magnitude hypothesis, such as that stated above. Magnitude inferential patterns are prominent in rule-oriented enterprises, such as games, mathematics and the devising of line and staff organization charts.

Difference

Inferences of difference, for instance, are exhibited by teachers who compare students on a one-to-one basis. For example, "Bill received an A in English while Phil got a C," or "Bill does more homework than Mark." Difference inductive inference processes consider hypotheses of difference such as linear or mosaic one-to-one comparisons of selected characteristics, measurements or traits of the phenomena in question. For example, the hypothesis of difference concerning the differentiation of the physical appearance of one individual from another can be carried out by means of comparing: (1) eye color, (2) hair color, (3) height, (4) weight, (5) length of arms and any other physical feature which can be considered on a one-to-one basis--a linear differential comparison.

Relationship

The relationship inference process tests a hypothesis consisting of a relationship of at least two, and usually more than two, characteristics, measurements or traits of the phenomena under consideration. Characteristic of this pattern is the statement: "Bill is a hard worker, speaks well and is a class leader; that's why he gets high marks and scholarship awards." An hypothesis of relationship is one which employs comparison by analogy in multivariate terms. It may be hypothesized, for instance, that height and weight are generally directly related and therefore people who are "tall" will tend to have larger skeletal frames, in various dimensions, than will those of "medium" height. Thus, we are considering correlations of variables.

Appraisal

The inferences of magnitude, difference and relationship are effected by submitting hypotheses of magnitude, difference and relationship, respectively, to test by the six-step inference process. The inference of appraisal is produced by assessing the results of the other three inference processes in terms of determining the degree to which a priori objectives of the entity under consideration have been attained. For example, a person may evaluate, or appraise, a particular brand of automobile tire by considering: (1) information concerning the degree

to which it showed wear for, say, 25,000 miles (measured in terms of a magnitude inference); (2) its demonstration of superiority when compared with a competing tire, i.e., linear differential comparison of various features of the respective tires (determined by an inference of difference); and (3) its performance capabilities in relationship to the type of driving, the type of automobile, loads to be carried and other similar types of characteristics (judged by a relationship inference).

Consequently, appraisal inferential processes are unique in that they are comprised of magnitude, difference and relationship hypotheses in deriving probability conclusions of evaluation concerning the phenomena under investigation. An appraisal inferential oriented teacher, for instance, might appraise a student's performance by contemplating: (1) the pupil's achievement on standardized tests (assessed by an inference of magnitude); (2) the student when compared on specific behaviors with each student in his class (measured in terms of a difference inference); and (3) the pupil's performance in relation to type of work assigned, his home environment and physical health (determined by an inference of relationship). The inference of appraisal would be effected by evaluating the results of the other three inference processes in terms of judging or grading the student.

Deductive Processes

In addition to the four inductive inference processes, individuals must also employ certain deductive inferential processes when dealing with information in selected aspects of the natural sciences, the life sciences and in almost all realms of mathematics and symbolic logic. Although the use of these types of inference processes is necessary when a person is confronted with solving certain kinds of educational tasks, such as proving a geometrical theorem, the assumption is generally accepted that these processes are required, and/or employed, relatively infrequently in everyday living situations. Less emphasis has been placed, therefore, upon the study of deductive inference processes than upon those efforts designed to yield information about inductive inference processes.

Review

The major categories comprising cymbologosics are outlined below with their designated abbreviations. (Capital letters indicate major modalities of inference, small letters represent minor inference modalities.

III. Inferensics (H)

- A. Inductive processes
  - 1. Magnitude (M, m)
  - 2. Difference (D, d)
  - 3. Relationship (R, r)
  - 4. Appraisal (L)
- B. Deductive processes (Ⓚ)

SUMMARY CHART OF COGNITIVE STYLE MAP ELEMENTS

I. Symbologosics (S)

A. Theoretical Symbols (T)

1. Theoretical Visual Linguistic (T_{vl}, t_{vl})
2. Theoretical Auditory Linguistic (T_{al}, t_{al})
3. Theoretical Visual Quantitative (T_{vq}, t_{vq})
4. Theoretical Auditory Quantitative (T_{aq}, t_{aq})

B. Qualitative Symbols (Q)

1. Senory Stimuli
   a. Visual (Q_v, q_v)
   b. Auditory (Q_a, q_a)
   c. Tactile (Q_t, q_t)
   d. Savory (Q_s, q_s)
   e. Olfactors (Q_o, q_o)
2. Programmatic Effects
   a. Propriocaptive (Q_p, q_p)
3. Codes
   a. Empathetic (Q_{cem}, q_{cem})
   b. Esthetic (Q_{ces}, q_{ces})
   c. Ethic (Q_{cet}, q_{cet})
   d. Histrionic (Q_{ch}, q_{ch})
   e. Kinesics (Q_{ck}, q_{ck})
   f. Kinesthetics (Q_{ckh}, q_{ckh})
   g. Proxemics (Q_{cp}, q_{cp})
   h. Synnoetics (Q_{cs}, q_{cs})
   i. Transactional (Q_{ct}, q_{ct})

II. Determantics (E)

A. Family (F, f)

B. Associates (A, a)

C. Individuality (I, i)

SUMMARY CHART OF COGNITIVE STYLE (continued)

III. Inferensics (H)

A. Inductive Processes

1. Magnitude (M, m)
2. Difference (D, d)
3. Relationship (R, r)
4. Appraisal (L)

B. Deductive Processes (Ⓚ)

Principles for Determining Major and Minor Orientations

Major and minor orientations are relative classifications estimated by means of a systematic procedure for determining an individual's capabilities in the realm of each of the twenty-seven cognitive style elements.

With the understanding that the basic purpose of determining major and minor orientations of the individual is to reflect his relative strengths in skills, knowledge and aptitudes in the cognitive style domains at a given level of development, the following principles are employed:

Principle I. If the percentile rank of an individual's score in a given theoretical or qualitative symbolic domain occurs in the array of values ranging from the fiftieth through the ninety-ninth percentile (inclusively) of a population of these scores, then the individual is accorded a major orientation in that domain, written as a capital letter (T or Q).

Principle II. If the percentile rank of a person's score in a particular theoretical or qualitative symbolic domain occurs in the array of values ranging from the twenty-fifth through the forty-ninth percentile (inclusively) of a population of these scores, then the individual is assigned a minor orientation in that domain, expressed as a small letter (t or q).

Principle III. If the percentile rank of an individual's score in a given theoretical or qualitative symbolic domain occurs in the array of values ranging from the zero percentile through the twenty-fourth percentile of a population of these scores, then the person is accorded neither a major nor a minor orientation in that domain.

Principle IV. If the percentile rank of a person's score in a particular cultural determinant occurs in the array of values ranging from the fiftieth through the ninety-ninth percentile (inclusively) of a population of these scores, then the individual is assigned a major determinant, expressed as a capital letter (F, A or I).

Principle V. If the percentile rank of an individual's score in a given cultural determinant occurs in the array of values ranging from the twenty-fifth through the forty-ninth percentile (inclusively) of a population of these scores, then the individual is accorded a positive minor determinant, written as a small letter ($f_{(+)}$, $a_{(+)}$ or $i_{(+)}$.

Principle VI. If the percentile rank of an individual's score in a particular cultural determinant occurs in the array of values ranging from the zero percentile through the twenty-fourth percentile of a population of these scores, then the person is assigned neither a major nor a minor determinant.

Principle VII. If the percentile rank of an individual's score in a given modality of inference occurs in the array of values ranging from the fiftieth through the ninety-ninth percentile (inclusively) of a population of these scores, then the person is accorded a major inferential mode, written as a capital letter (M, D or R).

Principle VIII. If the percentile rank of a person's score in a particular modality of inference occurs in the array of values ranging from the twenty-fifth through the forty-ninth percentile (inclusively) of a population of these scores, then the individual is assigned a minor inferential mode, expressed as a small letter (m, d or r).

Principle IX. If the percentile rank of an individual's score in a given modality of inference occurs in the array of values ranging from the zero through the twenty-fourth percentile of a population of these scores, then the person is accorded neither a major nor a minor inferential mode.

Principle X. Since the inference of appraisal is, by definition, composed of the following three major elements: (1) magnitude, (2) difference, and (3) relationship, if the

percentile ranks of a person's score in all three inference processes occur in the array of values ranging from the fiftieth through the ninety-ninth percentile (inclusively) of a population of these scores, then the individual is assigned a major appraisal inferential mode, written as a capital letter (L).

Principle XI. If the percentile rank of an individual's score in a particular deductive inference process occurs in the array of values ranging from the fiftieth through the ninety-ninth percentile (inclusively) of a population of these scores, then the person is accorded a major deductive mode, written as K .

Thus on the basis of the test scores and through applying the above principles, one is able to determine whenever an individual has a major or minor orientation for each of the twenty-seven cognitive style elements.

Cognitive Style

The educational science of cognitive style is somewhat different from those defined and described in the discipline of psychology. Employing a modified form of Guttman's methatheory of facets as a model,* cognitive style

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*The term "facet" was formally proposed by Louis Guttman in, "An Outline of Some New Methodology for Social Research," Public Opinion Quarterly, 18 (Winter, 1954-55), pp. 393-404. It is interesting to note that although this concept had been employed extensively throughout the social and behavioral sciences, as well as in mathematics, it had not been standardized prior to Guttman's proposal.

is expressed as, what mathematicians call, a Cartesian product of sets. In this context, cognitive style can be considered somewhat related to Guilford's "dimensions of intellect."

Where Guilford's model is a Cartesian product of three sets representing products, contents and operations, the educational science of cognitive style is defined as a Cartesian product, G, comprised of three sets, S, E and H: G - S x E x H, where S indicates the set of elements defining symbologosics, E represents the set of determantics and H denotes the set of elements comprising inferensics.* Therefore, G is defined as the universal set of all possible three-element profiles over the Cartesian product of sets S, E and H. In functional notation form, this universal set is expressed as G = Ø (S, E, H), where Ø (phi) indicates a function in the form of a Cartesian product. In set theory form, the expression becomes:

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*A Cartesian product is a particular type of space or set whose elements may be combined into profiles defined over that space. The "x" sign does not denote any algebraic or numerical operations but indicates that elements from each of the three sets, S, E and H, must be combined to determine the exact reference points of each three-element profile in space. Thus, a Cartesian product is a display of elements which, when combined, comprises an individual's various cognitive style profiles. Refer to Appendix for a discussion of Set Theory Form for the three Sets S, E and H.

$$G = \underline{S} \left\{ \begin{matrix} (T_x\text{-}Q_y), & (T_x\text{-}q_y), \\ (t_x\text{-}q_y), & (Q_y\text{-}t_x). \end{matrix} \right\} x$$

$$\underline{E} \left\{ \begin{matrix} I, & A, & F, \\ (I\text{-}a_{(z)}), & (A\text{-}i_{(z)}), & (F\text{-}i_{(z)}), \\ (I\text{-}f_{(z)}), & (A\text{-}f_{(z)}), & (F\text{-}a_{(z)}). \end{matrix} \right\} x$$

$$\underline{H} \left\{ \begin{matrix} (M\text{-}d), & (D\text{-}m), & (R\text{-}m), & \textcircled{K}, \\ (M\text{-}r), & (D\text{-}r), & (R\text{-}d). & \end{matrix} \right\}$$

Set S consists of a maximum number of 240 elements, 15 are included in set E, and set H is composed of 11 elements. Since G - S x E x H, the universal set G, the Cartesian product of sets S, E and H, includes: 240 x 15 x 11 = 39,600 different possible cognitive style profiles. A person, however, could at best attain only a maximum number of: 60 x 4 x 7 = 1,680 three-element profiles or modes of searching for meaning. The explanation for this limitation lies in the fact that should an individual possess various "style" elements, he cannot by definition hold others. For example, if a person is characterized by a major theoretical visual linguistic (T_{vl}) orientation, he cannot at the same time be identified by a minor theoretical visual linguistic (t_{vl}) capability, for the minor symbol is subsumed in the major element. Conversely, should an individual

possess a minor orientation, he could not at the same moment command a major capability.

The cognitive style of an individual is defined as a set g, i.e., a Cartesian product composed of sub-sets of elements drawn from sets S, E and H of G. Therefore, $g = \emptyset$ (s, e, h), or $g - \{\underline{s}\} \times \{\underline{e}\} \times \{\underline{h}\}$, where s, e and h represent sub-sets of elements drawn from those comprising universal sets S, E and H, respectively.

The cognitive style of an individual is a relative concept, and depends not only upon the age, educational level and cultural background of the person involved, but upon the level and conditions (e.g., symbolic, determantic, infernsic) of the educational or behavioral task to be accomplished. When "style" and task are both considered, we realize that there is no one standard method for achieving our educational or behavioral goals. In this context, the derivation of an appropriate "style" for an individual demands that the diagnostician analyze the client as well as the substance of the behavioral task to be considered. Under these circumstances, cognitive style provides a means of analyzing, interpreting and evaluating behavioral endeavors in a manner relatively different from those usually employed.

The educational science of cognitive style, therefore, is not a fixed or static entity. It is not rockbound and sterile, devoid of concepts and possessed of empty statements. Rather it is a value-free, dynamic, neutral

science reflecting the ever-changing status of human growth and development. Although individuals' cognitive styles are constantly changing (a person is not stuck with a life "style"), they can be employed for diagnostic purposes. This procedure leads to the formulation of strategies for the matching and augmentation of "styles" to increase the probability of a client's successful performance in the myriad of educational and behavioral tasks he faces daily. Cognitive style not only expresses the idiosyncratic nature of our clients as persons engaged in meaning-seeking behavior but allows us, social scientistics, to communicate this uniqueness precisely and accurately.

CHAPTER II

METHODOLOGY

Overview

Sixty incarcerated inmates who were found to have drug related problems were invited to participate in the Drug Abuse Treatment Program. For the purposes of this experiment the clients were seen for six hours of therapy followed by the post-test measures. Inmates who volunteered to participate were randomly assigned to one of two treatment groups. One was the experimental group where the client was matched, according to cognitive styles, as closely as possible with a therapist. The second was the treatment control group where clients were randomly assigned to therapists. Both groups received six hours of therapy.

Cognitive style therapy was developed by Hill who utilized it in matching students and teachers. The researcher expanded this concept to include matching of clients and therapists to facilitate the therapeutic relationship and behavior outcome.

Therapy for both the treatment and control groups was provided by three therapists. Each therapist had his masters degree and a minimum of one year experience; each

joined the Drug Abuse Treatment Program at approximately the same time; all were male; and each had similar philosophical approaches to treatment. However, their cognitive styles were different.

The Fiedler 75 item Relationship instrument was used to measure the quality of the therapy relationship. A behavior Rating Form was developed by the researcher which sought to report actual observable behaviors.

Following treatment, the Behavior Rating Form was administered to two teachers and two turnkeys all of whom had daily contact with the client. Note Tables 16 and 17 for interrate reliability between teachers; turnkeys; and teachers-turnkeys. The client was not aware of these measures. He was asked, however, to complete the Fiedler 75-item Relationship instrument which provided a dependent measure of therapy relationship quality.

Analysis of variance was performed to test for group main effect.

The second portion of this study examined cognitive style differences between hard drug users (physically addictive) and soft drug users (non-physically addictive). Sixty persons who sought treatment for their drug problem were invited to participate in the study. Thirty were sought from a drug program which serves primarily "soft-drug" users, thirty additional were sought from another program which primarily serves hard drug users. Only persons who

habitually used drugs were used in the study. All were given the Hill Cognitive Style instrument.

A comparative study was done between these two groups regarding differences in cognitive styles. Demographic variables of age, sex, amount, type and length of time using a particular class of drugs were reported.

Population

The population for the experimental study were inmates incarcerated at Ingham County Jail, Mason, Michigan. Generalization will be made toward this population, however specific demographic data and sampling procedure will be carefully delineated, allowing the reader to judge how it compares with some population to which he might wish to generalize (Cornfield, Tukey's argument).

Regarding the comparative study, the population were drug abusing persons from the tri-county area of Lansing, Michigan, who presented themselves for treatment. Again generalization is directed toward this population and Cornfield, Tukey's argument is once again employed.

Sample

The sample for the experimental study have the following characteristics:

1. Incarcerated male inmates at Ingham County Jail.
2. No psychosis present.
3. Heroin or barbiturate addicted (physically addicted).

4. Drug Abuse of more than 3 months but less than 3 years.
5. Limited exposure to previous therapy programs. (Note: 99% of the drug abusing inmates fall into the above category.)

TABLE 1.--Demographic Data--Jail Population Type of Drug.

Drug	Frequency	Percent	Cumulative Number	Cumulative Percent
Heroin	47	78.33	47	78.33
Combination Hard Drugs	4	6.67	51	85.00
Hard and Soft Drugs	5	8.33	56	93.33
Heroin and Cocaine	1	1.67	57	95.00
Heroin and Grass	3	5.00	60	100.00

TABLE 2.--Demographic Data--Jail Population.

	Frequency	Percent	Cumulative No. Cases	Cumulative Percent
Length of Time on Drugs				
6 mo.- 1	5	8.33	5	8.33
1 - 2 years	44	73.33	49	81.67
2 - 3 years	11	18.33	60	100.00
Amount of Money Required to Support Drug Habit*				
$25-50/day	45	75.00	45	75.00
$50-100/day	15	25.00	60	100.00

*Data based on client's self report.

TABLE 3.--Demographic Data--Jail Population Age.

Age	Frequency	Percent	Cumulative No. Cases	Cumulative Percent
19	13	21.67	13	21.67
20	8	13.33	21	35.00
21	6	10.00	27	45.00
22	7	11.67	34	56.67
23	5	8.33	39	65.00
24	5	8.33	44	73.33
25	2	3.33	46	76.67
36	3	5.00	49	81.67
27	3	5.00	52	86.67
28	3	5.00	55	91.67
29	2	3.33	57	95.00
30	1	1.67	58	96.67
33	1	1.67	59	98.33
34	1	1.67	60	100.00

Mean = 22.83 Standard deviation = 3.72

A sample of 60 subjects was obtained employing the following procedure:

1. All inmates at the Ingham County Jail were screened to determine evidence of drug abuse. This was accomplished through the following means.
   A. Identifying inmates that have been arrested on drug related charges.
   B. Inmates who have been brought in previously on drug related charges.
   C. Clients who have been identified by the physician as having drug related problems.
   D. Clients who indicated they have drug related problems, and who sought treatment although they were not arrested for drug offenses.

E. Clients referred to the drug rehabilitation programthrough other professionals on the jail rehabilitation staff.

F. Physical observation of this client:

1. Withdrawal symptoms
2. Tracks
3. Overt behavior changes

2. All clients from the above group were further screened by the professional staff of the Drug Abuse Treatment Program where the following data was obtained:

A. Is there an indication of psychosis? If so these persons were not included in this study.

B. Type of drug and level of addiction, including the extent and amount of drug use.

3. From the pool of clients who met the above criteria, 60 clients were randomly selected. The pool consisted of 120 clients during a two month period.

The determination of the amount of drug use was made in the following manner:

1. Client's self report.
2. Observed physiological symptoms and extent of withdrawal, evidence of tracks or flashbacks.
3. Report from the attending physician.
4. Interview by the professional drug rehabilitation staff.

5. Reports of known pushers who have had the inmate as "clientele."
6. Previous records.

Clients for this study were invited to participate in the drug program and each demonstrated the basic characteristics as listed above.

A second sample of sixty was drawn from two additional treatment programs which were based in the community. The criteria of acceptance was as follows:

1. Drug Abuse of more than three months but less than three years.
2. Clearly on either physically or non-physically addictive drugs--not a compensation.
3. Screened by staffs of the respective programs regarding the type and extent of drug use.

Thirty of the above sixty were randomly selected from a crisis center program which deals primarily with persons on non-physically addictive drugs. The other thirty were randomly drawn from a methadone program which serves only persons who are addicted to heroin.

Of the total persons coming into the two programs, thirty from each were randomly selected and invited to participate. This method was followed until thirty persons from each program had been received.

TABLE 4.--Demographic Data--Street Population--Type, Amount and Time on Drugs.

		Frequency	Percent	Cumulative Number	Cumulative Percent
		Heroin Users			
TYPE	Heroin	20	66.67	20	66.67
	Combination Hard	4	13.33	24	80.00
	Soft and Hard	6	20.00	30	100.00
AMOUNT	0 - $25/day	9	30.00	9	30.00
	$25 - $50/day	16	53.33	25	83.33
	$50 - $100/day	4	13.33	29	96.67
	$100 or more	1	3.33	30	100.00
TIME	1 - 3 months	0	0	0	0
	3 - 6 months	3	10.00	3	10.00
	6 mo. - 1 year	11	36.67	14	46.67
	1 year - 2 years	13	43.33	27	90.00
	2 years - 3 years	3	10.00	30	100.00
		Non-Heroin Users (Soft Drugs)			
TYPE	Grass	4	13.33	4	13.33
	LSD	5	16.67	9	30.00
	Speed	6	20.00	15	50.00
	Barbs	4	13.33	19	63.33
	Combination soft	11	36.67	30	100.00
AMOUNT	0 - $10/week	5	16.66	5	16.66
	$11 - $20/week	17	56.66	22	73.33
	$21 - $30/week	6	20.00	28	93.33
	$31 - $50/week	2	6.67	30	100.00
TIME	1 - 3 months	3	10.00	3	10.00
	3 - 6 months	12	40.00	15	50.00
	6 mo. - 1 year	12	33.33	25	83.33
	1 - 2 years	3	10.00	28	93.33
	2 - 3 years	2	6.67	30	100.00

TABLE 5.--Demographic Data--Street Population Age.

Age	Frequency	Percent	Cumulative Number	Cumulative Percent
		Heroin Group (Mean 21.2)		
16	1	3.33	1	3.33
17	3	10.00	4	13.33
18	3	10.00	7	23.33
19	6	20.00	13	43.33
20	0	0	13	43.33
21	3	10.00	16	53.33
22	4	13.33	20	66.66
23	2	6.67	22	73.33
24	3	10.00	25	83.33
25	2	6.67	27	90.00
26	1	3.33	28	93.33
27	1	3.33	29	96.67
28	0	0	29	96.67
29	1	3.33	30	100.00
		Non-Heroin Group (Mean 21.5)		
16	0	0	0	0
17	1	3.33	1	3.33
18	3	10.00	4	13.33
19	5	16.67	9	30.00
20	3	10.00	12	40.00
21	5	16.67	17	56.67
22	3	10.00	20	66.67
23	4	13.33	24	80.00
24	1	3.33	25	83.33
25	0	0	25	83.33
26	3	10.00	28	93.33
27	1	3.33	29	96.67
28	1	3.33	30	100.00
29	0	0	30	100.00

Therapists

Selection

Three therapists were available who were on the staff of the Drug Abuse Treatment Program. Each therapist has a master degree in Counseling, two were doctoral candidates having completed eighty per cent of their work, all three had had a minimum of one year experience dealing with drug or drug related problems. The age range was twenty-eight to thirty-six.

The therapists were told that because of funding requirements, the program director was establishing methods and procedures of program evaluation. They were invited to participate in developing this evaluation package. It was viewed as a constructive measure designed to facilitate a more productive drug program. The therapist accepted and contributed to the evaluation package. The researcher informed the staff that a portion of the evaluation package which he was designing, would be used as data for his thesis. The staff was assured the data would not reflect their "personal worth" as a therapist but instead was designed to evaluate methods of facilitating therapy outcome for the client.

The therapists saw the research as an important part of their professional responsibility to ask such questions as, what is being done in the drug program?, and how can they be more effective?

The staff was satisfied that the evaluation presented no threat to them. They were instructed to operate normally, providing therapy as they felt most comfortable doing. The researcher did not inform staff regarding clients who were in the research study and they were not aware of the type of instruments used to measure outcome differences.

It should be noted that on the basis of cognitive styles, the therapist exhibited enough differences to facilitate matching.

Subject Assignment

Before any client was assigned a treatment group, he was administered the Hill Cognitive Style Instrument. The sample at Ingham County Jail, after meeting criteria cited above, was randomly assigned one of two treatment groups. The second was the control treatment group where clients were randomly assigned a therapist. The first was the experimental treatment group where clients were assigned to therapists according to similarity of cognitive style matches. This was accomplished as follows; from a pool of clients randomly assigned to treatment group one, a client was selected who had the highest similarity (match) with counselor one; then a client was selected who had the highest match with counselor two and next a client was selected who had the highest match with counselor three. Each block was

filled in this fashion. It must be noted that counselor X may have had a "high" match for client Y although client Y had a better match with counselor Z, however, client Y would have to be assigned to counselor X because, as illustrated below, one cell must be filled before going to another. $S_1 \rightarrow S_2 \rightarrow S_3 \rightarrow S_4 \rightarrow S_5 \ldots S_{30}$.

		C_1	C_2	C_3
T_1	B_1	S_1	S_2	S_3
	B_2	S_4	S_5	S_6
		. . .	. . .	. . .
	B_{10}	S_{28}	S_{29}	S_{30}
T_2				

Figure 1.--Research Design--Subject and Block Assignments.

Cell S_1 must be filled from the available pool with the client who matches best with C_1, S_2 is filled with the client who matches best with C_2 although the assigned client may have a better match with C_3 he must be assigned C_2 as the client is the best possible match of all other available matches for C_2. Each cell must be filled in that order.

The sample drawn from the community drug program, having met the above cited criteria, were placed in one of two groups depending on type of drug use. Group one was for persons physically addicted to heroin; group two was for persons on non-physically addictive drugs. The Hill Cognitive

Style Instrument was administers to both groups. (See appendix for Instruments.)

Materials

Various phases of this study required particular materials which were developed by the researcher.

Pre-Experimental

Prior to the experimental, the following operations were performed:

1. The involved therapist was given the Hill Cognitive Style Instrument. (See Appendix A.) The findings were not revealed to the therapist.
2. Administrative consents were received from the Community Mental Health Board of Directors, Ingham County Sheriff's Department and the Director of the Drug Abuse Treatment Program-Ingham County Jail.
3. Cards were prepared for recording demographic data (see Appendix A), the Fiedler 75-item Relationship instrument was prepared (Appendix E), and the Behavior Rating form was developed (Appendix F and G).
4. Approval was received from Dr. Hill to use his instrument and quote his work.
5. Charts were prepared to identify clients, counselors and appropriately assigned groups.

Experimental Materials

The experimental materials consisted primarily of the Hill Cognitive Style Instrument which was administered to each subject. On the basis of these results, cognitive style matches were experimentally preformed between client and therapist for those in the experimental group. Those subjects in the control group were not manipulated employing the Cognitive Style Map. Regarding the comparative groups, the Hill Instrument was given to determine what differences exist between cognitive styles of different drug users. No experimental manipulation was attempted with this group.

Measures

Two measurements were used to compare treatment outcomes. The first was Fiedler's (1950, 1953) 75-item Q-sort. It sought to answer the question: What is the quality of the therapeutic relationship? The second was the Behavior Rating Scale developed by the researcher. It sought to answer the question: What actual behaviors of the client were observed.

The Fiedler's (1950, 1953) 75-item Q-sort

The sort consists of 25 items aimed at the therapist's ability to communicate with and understand the patient, 25 items describing the "emotional distance" between therapist and patient, and 25 items dealing with the area of "status" as reflected in the therapist's behavior toward the patient.

The sortings are correlated against the Fiedler ideal therapeutic relationship standard. The higher the correlation with the standard, the "better" the relationship between the patient and therapist.

This instrument has been used extensively in relationship research since 1950 (Goldstein, et al., 1966). Fiedler's original work in 1950, 1957 provides the basic Reliability data for the instrument. Parloff (1961) as others before him, provided support to the validity of the concept "therapeutic relationship" as defined by Fiedler. (Refer to Chapter I for a review of the Parloff [1961] study.)

The test was administered by the researcher and his assistant following six hours of therapy. The client was given a score sheet where each Q-sort statement was placed into one of 7 categories ranging from most alike to most unalike my therapist (Appendix E).

Behavior Rating Form

The Behavior Rating Form was developed by the researcher after conversations with the educational, rehabilitation and drug staff at Ingham County Jail. The behaviors represent to the above involved persons, significant points in the total Rehabilitation effort. The form examines the client's motivation through observations

of actual behavior, his goal setting ability, task completion competency, the client's ability to close the "say-do" gap, general behavior, and the client's ability to assume responsibility for his own actions.

After the instrument was designed, the staff reviewed the instrument and agreed that it asked questions important to their program.

Hill Cognitive Style

The Cognitive Style instrument (Appendix A) was administered to clients in the form of a booklet prior to the experiment. Clients were asked to respond to each statement by underlining either Rarely, Sometimes or Usually. For each of the 27 elements of the Cognitive Style Map, a score was derived which was used to determine either a major, minor or negligible orientation. A score of 9-15 is considered negligible; 16-26 is minor and 27-40 is a major orientation.

Therapists and clients were matched according to the percentage of similarity between their cognitive style elements.

Treatment Procedures

Pre-Experimental

The following operations were performed prior to conducting the experiment.

1. Secure administrative consents from Community Mental Health and Ingham County Sheriff's Department for conducting the research.
2. Arrange with Dr. Hill to receive his instruments and methods and permission to utilize his computer for the maps.
3. Arrange to get the Fiedler 75-item Q-sort deck.
4. Prepare statistical cards to record screening information.
5. Prepare charts for identifying clients, counselors and appropriate groups.
6. Give Hill instrument to counselors; a. results were not reported to the counselor.

Experimental

The following operations were standard operating procedures for the experiment.

1. Clients were screened employing the above guide lines.
2. All clients interviewed who were found to have drug problems were invited to participate in the overall drug program.
3. Clients were not informed that they were in research groups.
    a. Several clients asked if "research" was being conducted, and were told

that the entire drug program is under constant evaluation to determine how effective the program is in meeting inmates needs. He was told this is standard procedure for any program receiving Federal monies. It should be noted that with drug abusing person, they seem to dislike and distruct "research." Experience in the program prior to the experiment found the questions of research raised frequently. The clients stated they did not want to be "guinea pigs." The clients were supplied with the above answers and no problems were encountered during the experiment.

4. Demographic data using the statistical cards were gathered on all clients.
5. Each client was given the Hill instrument.
6. Clients were assigned treatment groups according to procedures listed under sampling methods found previously.
7. Clients received three one hour therapy sessions per week for two weeks.
8. The therapist did not see the client's cognitive style map and he was not aware which clients were in the experimental or control groups.

9. Therapist reported to the researcher when the client had been seen six times.

Post Experiment

1. Fiedler's 75-item Q-sort was given employing methods described above.
   a. The therapist did not see or administer the instrument.
   b. The instrument was administered by the researcher or his assistant.
2. Behavior Rating Scale was administered by the researcher or his assistant to two teachers and two turnkeys who had had an opportunity to observe the clients behavior. Neither teacher nor turnkey were aware which client was in the research group. The client was not aware the measure was being taken.

Control Group

The control group received exactly the same procedures as listed above. The only difference was that they were not matched according to cognitive styles with their therapist.

Comparison Group

The sample of 30 non-physically addicted and 30 heroin addicted persons received only the Hill instrument.

A comparison was made regarding differences in cognitive styles. Results are reported in Chapter III and IV.

Hypothesis

From reviewing the literature the following statements can be made:

Proposition I: Relationship appears to be a most central and powerful variable to therapy outcome.

Proposition II: All psychotherapists have as their effective core the interpersonal relationship rather than the specific methods of treatments.

Proposition III: Therapists will not be able to work equally well with all clients.

Proposition IV: Counseling is essentially seeking of knowledge and meaning for the client.

Proposition V: Each individual has his own cognitive style or his own way of seeking meaning.

Proposition VI: When students/clients and teachers/counselors are matched according to cognitive style, there is substantial improvement in the student's performance.

The questions then presented for this research are:

1. What is the cognitive style of drug users?
2. What similar factors in the cognitive style map exists for persons abusing physically addictive drugs?

3. What similar factors in the cognitive style map exists for persons abusing non-physically addictive drugs?
4. What are the similarities and differences of cognitive style between the physically addictive drug user and the non-physically addictive drug user?
5. Will the quality of the therapeutic relationship between therapist and client be improved by matching cognitive styles as closely as possible?
6. Will the outcome of therapy be improved if client and therapist are matched according to cognitive styles?
7. Will there be a difference in the quality of the therapeutic relationship between therapists and clients who are matched as closely as possible on cognitive styles and those who are randomly assigned a therapist.
8. Will there be a difference in the quality of the therapeutic relationship between high quality and low quality cognitive style matches?
9. Will there be a difference in therapy outcome between high quality matched clients and therapist, low quality matched clients and therapists and a random group of clients and therapists not matched?

The expected answers to the above questions are presented in the following five hypotheses tested in this research:

H_1: There will be differences in cognitive styles, as defined by Hill, between individuals abusing physically addictive drugs (heroin, barbiturates) and those individuals using non-physically addictive drugs (marijuana).

H_2: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better quality relationship as measured by Fiedler's 75-item Q-sort deck than clients and counselors with low quality cognitive style matches.

H_3: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better quality relationship as measured by Fiedler's 75-item Q-sort deck than the control group.

H_4: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better therapy outcome than clients and counselors with low quality cognitive style matches.

H_5: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better therapy outcome than clients and counselors in the control group.

Experimental Design

This experiment used the "post-test only control group" design described by Campbell and Stanley (1969). Figure provides a pictorial representation.

R = Random assignment

T_1 = Treatment group matched cognitive styles

T_2 = Control group--no match

C_1, C_2, C_3 = Therapist

S_1 - S_{60} = Subjects

B_1 - B_{20} = Blocks

R			C_1	C_2	C_3
	T_1	B_1	S_1	S_2	S_3
		B_2	S_4	S_5	S_6
			. . .	. . .	. . .
		B_{10}	S_{28}	S_{29}	S_{30}
	T_2	B_{11}	S_{31}	S_{32}	S_{33}
		B_{12}	S_{34}	S_{35}	S_{36}
			. . .	. . .	. . .
		B_{20}	S_{58}	S_{59}	S_{60}

Figure 2--Pictorial Representation of Experimental Design.

Analysis of Data

Demographic data was collected and displayed describing each group on the following:

1. Age
2. Sex
3. Type of durg used
4. Amount of drug used
5. Length of time on the drug
6. Prior drug treatment

Relationship study--A three-way analysis of variance was the major statistical method used for this study. Table 12 presents the required formulas.

Comparison study--A Chi-square analysis was used to indicate differences, by element, between cognitive styles of herion abusers and soft drug users.

CHAPTER III

RESULTS

Treatment Effects

The differential effect of the two treatment procedures on the three measures can be observed in terms of the resultant means in Tables 6, 7, and 8. Tables 6, 7, and 8 display separately the mean scores on the three dependent variables for Experimental and Control groups by blocks; Tables 9, 10, and 11 display the mean scores for each dependent variable by counselors. Tables 12, 13, 14, and 15 present a summary of each dependent variable with the resultant Quasi F and F tests.

Tables 20-45 report the comparative data between persons physically addicted and persons using non-physically addictive drugs. A separate section of this chapter will report this data.

In the experimental study, the means indicate that treatment one (Experimental group) did better than treatment two (Control group) on all outcome measures. Tables 13, 14, and 15 present the analysis; Table 12 presents information used to determine the Quasi F test, F tests, and degrees of freedom.

TABLE 6.--Mean Scores on Relationship Measure for Experimental and Control Groups by Blocks.

	B_1	B_2	B_3	B_4	B_5	B_6	B_7	B_8	B_9	B_{10}	Grand Mean
T_1	5.23	5.13	4.90	4.93	4.70	4.46	4.37	4.47	4.27	4.03	4.65*
T_2	4.23	3.73	3.73	3.37	3.83	3.10	4.07	4.03	2.93	3.67	3.67*

Overall Mean T_1 and T_2 = 4.16

*Significant differences found. ($p \geq .01$)

T_1 = Experimental group
T_2 = Control group
B_1-B_{10} = Blocks

TABLE 7.--Mean Scores on Turnkey Behavior Rating Scale for Experimental and Control Groups by Blocks.

	B_1	B_2	B_3	B_4	B_5	B_6	B_7	B_8	B_9	B_{10}	Grand Mean
T_1	4.10	3.92	3.77	3.80	3.82	3.95	3.82	3.82	3.47	3.37	3.78*
T_2	3.78	3.45	3.27	3.00	3.43	3.05	3.82	3.65	3.02	3.38	3.39*

Overall Mean T_1 and T_2 = 3.58

*Significant differences found. ($p \geq .01$)

T_1 = Experimental group
T_2 = Control group
B_1-B_{10} = Blocks

TABLE 8.--Mean Scores on Teacher's Behavior Rating Scale for Expermental and Control Group by Blocks.

	B_1	B_2	B_3	B_4	B_5	B_6	B_7	B_8	B_9	B_{10}	Grand Mean
T_1	4.52	4.40	3.97	4.13	4.17	4.15	4.17	4.17	3.82	3.62	4.11*
T_2	4.03	3.83	3.63	3.20	3.60	2.97	3.80	4.03	2.85	3.40	3.54*

Overall Mean T_1 and T_2 = 3.82

*Significant differences found. ($p > .01$)

T_1 = Experimental group
T_2 = Control group
B_1-B_{10} = Blocks

TABLE 9.--Mean Score on Relationship Measure for Experimental and Control Groups by Counselor.

	C_1	C_2	C_3
T_1	4.98	4.32	4.65
T_2	3.90	3.56	3.55
Grand	4.44*	3.94*	4.10*

C_1, C_2, C_3 = Counselors T_1 = Experimental T_2 = Control

*No significant differences found. ($p < .01$)

TABLE 10.--Mean Score on Teacher's Behavior Rating Scale for Experimental and Control Group by Counselor.

	C_1	C_2	C_3
T_1	4.24	3.95	4.15
T_2	3.62	3.47	3.52
Grand	3.93*	3.71*	3.84*

C_1,C_2, C_3 = Counselors T_1 = Experimental T_2 = Control

*No significant differences found. ($p < .01$)

TABLE 11.--Mean Score on Truckey's Behavior Rating Scale for Experimental and Control Groups by Counselors.

	C_1	C_2	C_3
T_1	3.80	3.63	3.92
T_2	3.42	3.27	3.47
Grand	3.61*	3.45*	3.69*

C_1, C_2, C_3 = Counselors T_1 = Experimental T_2 = Control

*No significant differences found. ($p < .01$)

TABLE 12.--Formulas Necessary for Calculating Degrees of Freedom, Quasi F, and F Statistics--3 way ANOVA.

ANOVA Table

Sources		E(MS)
$(F)_T$	$\sigma^2_{B:T} + \sigma^2_T$	$\sigma^2_{B:T} + \sigma^2_{CT} + \sigma^2_{BC:T} + \sigma^2_T$
$(R)_{B:T}$	$\sigma^2_{B:T}$	$\sigma^2_{B:T} + \sigma^2_{BC:T}$
$(R)_C$	$\sigma^2_{BC:T} + \sigma^2_C$	$\sigma^2_{CT} + \sigma^2_{BC:T} + \sigma^2_C$
CT	$\sigma^2_{BC:T} + \sigma^2_{CT}$	$\sigma^2_{CT} + \sigma^2_{BC:T}$
BC:T	$\sigma^2_{BC:T}$	$\sigma^2_{BC:T}$

Degrees of Freedom for Quasi F

$$df\ (\text{numerator}) = \frac{(MS_T + MS_{BC:T})^2}{\frac{(MS_T)^2}{(t-1)} + \frac{(MS_{BC:T})^2}{(b-1)(c-1)t}}$$

$$df\ (\text{denominator}) = \frac{(MS_{B:T} + MS_{CT})^2}{\frac{(MS_{B:T})^2}{(b-1)t} + \frac{(MS_{CT})^2}{(t-1)(c-1)}}$$

$$\text{Quasi } F_T = \frac{MS_T + MS_{BC:T}}{MS_{B:T} + MS_{TC}} \qquad F_{CT} = \frac{MS_{CT}}{MS_{BC:T}}$$

$$F_C = \frac{MS_C}{MS_T}$$

$$F_{B:T} = \frac{MS_{B:T}}{MS_{BC:T}}$$

TABLE 13.--Summary of the Relationship Scale Analysis of Variance Table.

	Reduced Sum of Squares	df	Mean Square	F*	(df)
Grand Mean	103833.600	1	103833.600		
Treatment (T)	1440.600	1	1440.600	@ 21.408**	1;15
B (T)	898.467	18	49.915	@ 3.54 (A)	18;36
Counselor (C)	260.800	2	130.400	7.23 (B)	2;2
CXT	36.400	2	18.200	1.06 (C)	2;36
CB (T)	634.133	36	17.615		
TOTAL	3270.40	59	55.431		

*Because the 3d-dependent variables are seen as repeated tests, α has been portitioned such that $\alpha = .01$.

**Quasi-F significant when $F \geq 8.68$.

A = F significant when $F \geq 2.55$.

B = F significant when $F \geq 99.00$

C = F significant when $F \geq 5.29$.

@ = Significant F.

TABLE 14.--Summary of the Teacher's Behavior Rating Scale Analysis of Variance Table.

	Reduced Sum of Squares	df	Mean Square	F*	(df)
Grand Mean	87669.037	1	87669.037		
Treatment (T)	495.937	1	495.938	@ 12.515**	1;11
B (T)	661.108	18	36.728	@ 3.42[A]	18;36
Counselor (C)	47.775	2	23.888	6.34[B]	2;2
CXT	7.525	2	3.763	3.27[C]	2;36
CB (T)	388.367	36	10.788		
TOTAL	1600.713	59	27.131		

*Because the three dependent variables are seen as repeated tests, α has been portitioned such that $\alpha = .01$.

**Quasi F significant when $F \geq 9.65$.

A = F significant when $F \geq 2.55$.

B = F significant when $F \geq 2.55$.

C = F significant when $F \geq 99.00$

@ = Significant F.

TABLE 15.--Summary of the Turnkey's Behavior Rating Scale Analysis of Variance Table.

	Reduced Sum of Squares	df	Mean Square	F*	(df)
Grand Mean	77041.667	1	77041.667		
Treatment (T)	236.017	1	236.017	@ 11.266**	1;19
B (T)	376.650	18	20.925	1.99[A]	18;36
Counselor (C)	60.558	2	30.279	2.88[B]	2;2
CXT	1.908	2	0.954	0.09[C]	2;36
CB (T)	377.200	36	10.478		
TOTAL	1052.333	59	17.836		

*Because the three dependent variables are seen as repeated tests, α has been partitioned such that $\alpha = .01$.

**Quasi F significant when $F \geq 8.18$.

A = F significant when $F \geq 2.55$.

B = F significant when $F \geq 99.00$.

C = F significant when $F \geq 5.29$.

@ = Significant F.

Because the three dependent variables are seen as repeated tests, the alpha level has been partitioned such that $\alpha = .01$. A Quasi F was necessary to determine significance of treatment main effects. Significance was found when the Quasi F was equal to or exceded 8.68 for the Analysis of Variance dealing with the Fiedler relationship measures; 8.18 for the Turnkey's Behavior Rating Scale; and 9.65 for the Teacher's Behavior Rating Scale.

Therefore, the experimental group did better than the control group on all measures for treatment main effects. Specifically, this implied the rejection of the following null hypothesis:

H_{o3}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will not have a better quality relationship as measured by Fiedler's 75-item instrument than the control group.

H_{o5}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will not have a better therapy outcome than clients and counselors in the control group.

The following alternate hypothesis results:

H_{A3}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better quality relationship as measured by Fielder's 75-item instrument than the control group.

H_{A5}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better therapy outcome than clients and counselors in the control group.

Block Effect

The F test statistic for determining block (row) effect is significant at or beyond a value of 2.55 for each of the three dependent variables. On two of the measures (the Relationship and Teacher Instruments), the tests showed significant differences between experimental and control groups. The blocks represent a decreasing similarity of cognitive style match between counselor and clients.

It must be noted that utilizing the Turnkey Behavior Rating Scale, the test failed to reject the null hypothesis. The two remaining dependent variables, however, did reject the null hypothesis.

Specifically, this implied the rejection of the following null hypothesis:

H_{o2}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will not have a better quality relationship as measured by Fiedler's 75-item instrument than clients and counselors with low quality cognitive style matches.

H_o4: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will not have a better therapy outcome than clients and counselors with low quality cognitive style matches.

The following alternate hypothesis results:

H_{A2}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better quality relationship as measured by Fiedler's 75-item instrument than clients and counselors with low quality cognitive style matches.

H_{A4}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better therapy outcome than clients and counselors with low quality cognitive style matches.

Counselor Effect

An F test was done to determine counselor effect on the treatment groups. In order to be significant, the F statistic must equal or exceed 99.00 at an α level of .01. The F statistic on the three dependent variables were found to be less than 99. Although not in the original hypothesis to be tested, the above suggests that the treatment main effects and block effects were not due to counselor difference.

Interaction Effect

An F test was done to determine interaction effect between counselor and treatment. In order to be significant, the F statistic must equal or exceed 5.29 at an α level of .01. On examining each of the dependent variables, the F test failed to reject the null hypothesis that there was no interaction effect.

It would appear from the above that the differences found were not related to either counselor or interaction of counselor and treatment effect (see Table 16).

Comparative Study

The chi square comparisons between non-physically addictive drug users and physically addictive drug users

TABLE 16.--Behavior-Relationship Outcome (Raw Score) from High Quality Match to Low Quality Match.

Counselor Number	% Match	Relationship	Behavior I		Behavior II		Group	Counselor Number	% Match	Relationship	Behavior I		Behavior II		Group
1	93	5.8	4.9	4.7	4.4	4.5	1	2	7.4	4.1	4.1	3.8	3.6	3.9	1
1	93	5.6	4.6	4.1	4.0	4.2	1	2	7.4	4.2	4.1	4.4	3.6	3.7	1
3	92	5.2	4.9	4.6	4.1	4.3	1	2	7.4	4.4	3.9	3.9	3.7	4.1	2
3	90	5.2	4.4	4.8	4.2	3.9	1	1	7.2	4.0	4.0	4.2	3.7	3.6	2
1	89	5.4	3.9	4.2	3.7	3.6	1	3	7.2	4.4	3.6	3.9	3.9	4.2	2
1	88	5.2	4.2	4.1	3.9	3.7	1	2	7.0	4.1	3.9	4.0	3.4	3.3	1
1	88	5.0	4.1	4.3	4.0	4.2	2	2	6.8	4.2	3.9	3.6	3.6	3.9	2
3	87	4.9	4.1	3.8	4.0	3.8	1	3	6.8	4.0	4.2	3.9	4.0	3.7	1
2	85	4.7	4.1	3.9	3.7	3.6	1	1	6.7	3.9	3.4	3.2	3.6	3.4	2
2	84	4.6	4.0	3.9	3.6	3.6	1	2	6.7	3.9	3.1	3.2	3.2	3.0	1
1	82	4.8	4.1	4.1	3.9	3.8	1	1	6.4	3.8	4.0	3.6	3.1	3.0	2
1	82	4.8	4.4	4.1	4.1	3.9	1	3	6.4	3.9	3.9	3.3	3.8	3.7	2
3	81	4.6	4.2	4.5	4.1	4.2	2	3	5.9	3.4	3.0	3.1	3.2	3.0	2
2	81	4.3	4.0	4.3	3.8	4.2	2								
2	81	4.4	4.0	3.8	3.6	3.9	1	1	5.9	3.5	3.4	3.9	3.0	3.0	2
1	80	4.9	4.2	4.3	3.9	3.8	1	2	5.8	3.4	3.4	3.9	3.2	3.0	2
1	80	4.9	4.6	4.6	4.0	3.9	1	2	5.8	3.8	3.2	3.6	2.9	3.2	2
1	80	4.8	4.3	4.1	4.1	4.2	2	3	5.6	3.1	3.2	3.0	2.8	3.2	2
2	80	4.5	4.4	3.9	3.9	3.7	1	2	5.5	3.5	3.2	3.7	2.8	3.1	2
2	80	4.4	4.1	4.3	3.8	3.7	1	2	5.3	3.1	3.1	3.5	3.0	3.2	2
3	80	5.1	4.3	3.9	3.9	3.7	1	1	4.5	3.3	2.9	3.1	3.0	3.1	2
3	80	4.9	4.4	4.0	4.0	3.7	1	1	4.4	3.6	3.5	3.9	2.9	3.2	2
1	78	4.2	3.6	3.8	3.2	3.2	1	2	4.3	3.1	3.0	2.8	3.1	2.7	2
1	78	4.1	4.2	3.9	3.7	3.4	2	3	4.3	3.1	3.0	3.1	3.1	3.4	2
3	78	4.3	4.2	3.9	4.0	4.0	1	3	4.0	3.0	3.2	3.0	3.1	2.9	2
3	77	4.1	4.3	4.0	4.1	3.6	1	2	3.8	3.0	3.0	2.8	3.1	3.0	2
1	76	4.2	3.7	3.9	3.2	3.1	1	1	3.4	3.0	2.8	2.9	3.2	2.8	2
3	76	4.1	4.0	4.3	4.0	4.0	2	3	3.4	3.0	3.0	2.9	3.1	3.2	2
3	75	4.3	4.2	3.7	3.9	3.7	1	3	3.0	2.9	2.8	3.2	3.1	3.3	2
3	75	4.5	3.9	4.1	3.7	4.0	1	2	3.0	2.8	2.9	2.6	3.0	2.8	2
2	75	4.3	4.0	4.3	3.8	3.9	1								

are presented in Tables 20-45. It should be pointed out that although the group is defined as "users of physically addictive drugs" the population was heroin users.

A summary chart is presented which illustrates each cognitive style element, significance and the direction (see Table 17).

It was found that the heroin and non-heroin differed on the following elements: theoretical visual linguistic; theoretical visual quantitative; qualitative auditory; qualitative olfactory; qualitative tactile; qualitative proprioceptive; qualitative code empathic; qualitative code kinesics; qualitative code synnoetics; associates; individuality; differences; magnitude and relationships. Qualitative code esthetics and qualitative code proximics are significant when the data were pooled according to Tables 31 and 36. In considering differences it is important to determine whether the element in question is a major one or not. The data as analyzed looked at three areas: major, minor and negligible. It was more important to determine whether the element was either major or minor, therefore, by considering the categories minor and negiligible as one, the data demonstrated significant differences between physically addictive drug abusers and non-physically addictive drug abusers on the elements qualitative code esthetics and qualitative code promimics. This is discussed in Chapter IV.

TABLE 17.--Frequency and Percentage of Major and Minor by Element.

Element		Street								Jail			
		Non-Heroin				Heroin				Heroin			
		Major		Minor		Major		Minor		Major		Minor	
		F	%	F	%	F	%	F	%	F	%	F	%
1.	T(AL)	16	53.33	14	46.67	17	56.67	13	43.33	23	38.33	37	61.67
2.	T(AQ)	8	26.67	22	73,34	5	16.67	25	83.33	13	21.67	47	78.34
3.	T(VL)*	24	80.00	6	20.00	14	46.67	16	53.33	39	65.00	21	35.00
4.	T(VQ)*	13	43.33	17	56.67	3	10.00	27	90.00	10	16.67	50	83.33
5.	Q(A)*	29	96.67	1	3.33	19	63.33	11	36.67	33	55.00	27	45.00
6.	Q(O)*	26	86.67	4	13.33	9	30.00	21	70.00	22	36.67	38	63.33
7.	Q(S)	27	90.00	3	10.00	28	93.33	2	6.67	49	81.67	11	18.33
8.	Q(T)*	29	96.67	1	3.33	24	80.00	6	20.00	49	81.67	11	18.33
9.	Q(V)	25	83.33	5	16.67	21	70.00	9	30.00	49	81.67	11	18.33
10.	Q(P)*	25	83.33	5	16.67	6	20.00	24	80.00	20	33.33	40	66.67
11.	Q(CEM)*	29	96.67	1	3.33	19	63.33	11	36.67	33	55.00	27	45.00
12.	Q(CES)*	28	93.33	2	6.67	22	73.33	8	26.67	36	60.00	24	40.00
13.	Q(CET)	22	73.33	8	26.67	21	70.00	9	30.00	35	58.33	25	41.67
14.	Q(CH)	6	20.00	24	80.00	5	16.67	25	83.33	16	26.67	44	73.33
15.	Q(CK)*	22	73.33	8	26.67	6	20.00	24	80.00	15	25.00	45	75.00
16.	Q(CKH)	20	66.67	10	33.33	17	56.67	13	43.33	32	53.33	28	46.67
17.	Q(CP)*	14	46.67	16	53.33	7	23.33	23	76.67	19	31.67	41	68.34
18.	Q(CS)*	30	100.00	0	0	18	60.00	12	40.00	29	48.33	31	51.67
19.	Q(CT)	14	46.67	16	53.33	11	36.67	19	63.33	24	40.00	36	60.00
20.	A*	23	76.67	7	23.33	0	0	30	100.00	0	0	60	100.00
21.	F	19	63.33	11	36.67	16	53.33	14	46.67	25	41.67	35	58.33
22.	I*	20	66.67	10	33.33	30	100.00	0	0	55	91.67	5	8.33
23.	D*	19	63.33	11	36.67	10	33.33	20	66.67	38	63.33	22	36.67
24.	L	22	73.33	8	26.67	20	66.67	10	33.33	38	63.33	22	36.67
25.	M*	7	23.33	23	76.67	16	53.33	14	46.67	28	46.67	32	53.33
26.	R*	22	73.33	8	26.67	12	40	18	60	32	53.33	28	46.67
27.	K	7	23.33	23	76.67	12	40	18	60	14	23.33	46	76.66

*Indicates significant differences on Chi Square. $P \geq .01$.

It must be noted that 27 separate chi square analysis were done. Independency between the 27 elements is not assured. Sixteen of the 27 elements were found to be significantly different. We may conclude differences do exist on the cognitive styles between the two groups.

As a result of the chi square analysis the following null hypothesis is rejected:

H_{o1}: There will be no differences in cognitive styles, as defined by Hill, between individuals abusing physically addictive drugs and those individuals using non-physically addictive drugs.

and the alternate hypothesis is accepted:

H_{A1}: There will be differences in cognitive style, as defined by Hill, between individuals abusing physically addictive drugs and those individuals using non-physically addictive drugs.

Hoyt's Reliability of Behavior Rating Scales

Tables 18 and 19 present Hoyt's ANOVA estimate of internal consistancy reliability. The reliability was found to be 0.92 with both instruments.

It should be pointed out that because of the close proximity of the teachers in their working situation and because of frequent staff meetings where clients were discussed, independence of observation cannot be assured. They were not aware which clients were in the treatment groups. There appeared to be lower group mean for the Turnkey's group (3.52) compared to the group mean for teachers (3.82). Refer to Table 18 and 19 for summary of group means.

TABLE 18.--Hoyt's* Analysis of Variance Estimate of Internal Consistency Reliability for Teacher's Behavior Ratings.

	Reduced Sum of Squares	df	Mean Square
Grand Mean	175338.075	1	175338.075
Subject	3201.425	59	54.261
Raters	0.075	1	0.075
SXR	253.425	59	4.295
Total	3454.925	119	29.033

Grand Mean 3.82

Hoyt's ANOVA estimate of internal consistency reliability

$$= \frac{MS_{Subject} - MS_{SXK}}{MS\ Subject} = 0.92$$

*Hoyt, C. Test reliability obtained by Analysis of Variance. Psychometrika, 1941, 6, 153-160.

TABLE 19.--Hoyt's Analysis of Variance Estimate of Internal Consistency Reliability for Turnkey's Behavior Ratings.

	Reduced Sum of Squares	df	Mean Square
Grand Mean	154083.333	1	154083.333
Subject	2104.667	59	35.672
Raters	0.133	1	0.133
SXR	153.867	59	2.608
Total	2258.667	119	18.980

Grand Mean = 3.58

Hoyt's ANOVA estimate of internal consistency reliability

$$= \frac{MS_{Subject} - MS_{SXK}}{MS\ Subject} = 0.92$$

*Hoyt, C. Test reliability obtained by Analysis of Variance. Psychometrika, 1941, 6, 153-160.

TABLE 20.--Chi Square Comparisons Between Addiction Levels (in Street Population on Cognitive Style Elements: Theoretical Auditory Linguistic - T(AL).

			Major	Minor	Negligible	Mean	Standard Deviation
Heroin User	Percentage of Heroin Users in Each Level	Frequency	17	12	1		
		Percent Across	56.67	40.00	3.33	1.47	.57
	Percentage of Those Who Chose Each Level Who Are Heroin Addicts	Percent Down	51.52	46.15	100.00		
Non-Heroin	Percentage of Non-Heroin Users in Each Level	Frequency	16.00	14.00	0		
		Percent Across	53.33	46.67	0	1.47	.51
	Percentage of Those Who Chose Each Level Who are Non-Heroin Users	Percent Down	48.48	53.85	0		
Summary		Frequency	33	26	1		
		Percent Across	55	43.33	1.67		
		Percent Down	100	100	100	1.47	.54
		Mean	1.48	1.54	1.00		
		Standard Deviation	.51	.51	0		

Chi Square = 1.1944; df = 2; no significant differences found. $p < .01$.

TABLE 21.--Chi Square Comparison Between Addiction Levels (in Street Population) on Cognitive Style Elements: Theoretical Auditory Quantitative T(AQ).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	5.00	22.00	3.00	30.00	1.93	.52
	PCT Across	0.00	16.67	73.33	10.00	100.00		
	PCT Down	0.00	38.46	52.38	60.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	8.00	20.00	2.00	30.00	1.80	.55
	PCT Across	0.00	26.67	66.67	6.67	100.00		
	PCT Down	0.00	61.54	47.62	40.00	50.00		
	Total							
	Frequency	0.00	13.00	42.00	5.00	60.00	1.87	.54
	PCT Across	0.00	21.67	70.00	8.33	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.62	1.48	1.40			
	Std Dev	0.00	.51	.51	.55			

Chi Square = .988

Degrees of Freedom = 2

No significant difference found. $P < .01$.

TABLE 22.--Theoretical Visual Linguistic - T(VL).

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	14.00	16.00	30.00	1.53	.51
	PCT Across	0.00	46.67	53.33	100.00		
	PCT Down	0.00	36.84	72.73	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	24.00	6.00	30.00	1.20	.41
	PCT Across	0.00	80.00	20.00	100.00		
	PCT Down	0.00	63.16	27.27	50.00		
	Total						
	Frequency	0.00	38.00	22.00	60.00	1.37	.49
	PCT Across	0.00	63.33	36.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.63	1.27			
	Std Dev	0.00	.49	.46			

Chi Square = 7.177

Degrees of Freedom = 1

Significance Found. ($P \geq .01$)

TABLE 23.--Theoretical Visual Quantitative T(VQ).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	3.00	23.00	4.00	30.00	2.03	.49
	PCT Across	0.00	10.00	76.67	13.33	100.00		
	PCT Down	0.00	18.75	57.50	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	13.00	17.00	0.00	30.00	1.57	.50
	PCT Across	0.00	43.33	56.67	0.00	100.00		
	PCT Down	0.00	81.25	42.50	0.00	50.00		
	Total							
	Frequency	0.00	16.00	40.00	4.00	60.00	1.80	.55
	PCT Across	0.00	26.67	66.67	6.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.81	1.42	1.00			
	Std Dev	0.00	.40	.50	0.00			

Chi Square = 11.150

Degrees of Freedom = 2

Significance found. ($P \geq .01$)

TABLE 24.--Qualitative Auditory - Q(A).

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	19.00	11.00	30.00	1.37	.37
	PCT Across	0.00	63.33	36.67	100.00		
	PCT Down	0.00	39.58	91.67	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	29.00	1.00	30.00	1.03	.18
	PCT Across	0.00	96.67	3.33	100.00		
	PCT Down	0.00	60.42	8.33	50.00		
	Total						
	Frequency	0.00	48.00	12.00	60.00	1.20	.40
	PCT Across	0.00	80.00	20.00	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.60	1.08			
	Std Dev	0.00	.49	.29			

Chi Square = 10.417

Degrees of Freedom = 1

Significant differences found. ($P \leq .01$)

TABLE 25.--Qualitative Olfactory - Q(O).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	9.00	20.00	1.00	30.00	1.73	.52
	PCT Across	0.00	30.00	66.67	3.33	100.00		
	PCT Down	0.00	25.71	83.33	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	26.00	4.00	0.00	30.00	1.13	.35
	PCT Across	0.00	86.67	13.33	0.00	100.00		
	PCT Down	0.00	74.29	16.67	0.00	50.00		
	Total							
	Frequency	0.00	35.00	24.00	1.00	60.00	1.43	.53
	PCT Across	0.00	58.33	40.00	1.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.74	1.17	1.00			
	Std Dev	0.00	.44	.38	0.00			

Chi Square = 19.924

Degrees of Freedom = 2

Significant differences found. ($P \geq .01$)

TABLE 26.--Qualitative Survey - Q(S).

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	28.00	2.00	30.00	1.07	.25
	PCT Across	0.00	93.33	6.67	100.00		
	PCT Down	0.00	50.91	40.00	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	27.00	3.00	30.00	1.10	.31
	PCT Across	0.00	90.00	10.00	100.00		
	PCT Down	0.00	49.09	60.00	50.00		
	Total						
	Frequency	0.00	55.00	5.00	60.00	1.08	.28
	PCT Across	0.00	91.67	8.33	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.49	1.60			
	Std Dev	0.00	.50	.55			

Chi Square = .218

Degrees of Freedom = 1

No significant differences found. ($P \geq .01$)

TABLE 27.--Qualitative Tacticle - Q(T).

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	24.00	6.00	30.00	1.20	.41
	PCT Across	0.00	80.00	20.00	100.00		
	PCT Down	0.00	45.28	85.71	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	29.00	1.00	30.00	1.03	.18
	PCT Across	0.00	96.67	3.33	100.00		
	PCT Down	0.00	54.72	14.29	50.00		
	Total						
	Frequency	0.00	53.00	7.00	60.00	1.12	.32
	PCT Across	0.00	88.00	11.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.55	1.14			
	Std Dev	0.00	.50	.38			

Chi Square = 4.043

Degrees of Freedom = 1

Significant differences found. ($P \geq .01$)

TABLE 28.--Qualitative Visual - Q(V).

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	21.00	9.00	30.00	1.30	.47
	PCT Across	0.00	70.00	30.00	100.00		
	PCT Down	0.00	45.65	64.29	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	25.00	5.00	30.00	1.17	.38
	PCT Across	0.00	83.33	16.67	100.00		
	PCT Down	0.00	54.35	35.71	50.00		
	Total						
	Frequency	0.00	46.00	14.00	60.00	1.23	.43
	PCT Across	0.00	76.67	23.33	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.54	1.36			
	Std Dev	0.00	.50	.50			

Chi Square = 1.491

Degrees of Freedom = 1

No significant differences. ($P < .01$)

TABLE 29.--Qualitative Proprioceptive - Q(P).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	6.00	21.00	3.00	30.00	1.90	.55
	PCT Across	0.00	20.00	70.00	10.00	100.00		
	PCT Down	0.00	19.35	80.77	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	25.00	5.00	0.00	30.00	1.17	.38
	PCT Across	0.00	83.33	16.67	0.00	100.00		
	PCT Down	0.00	80.65	19.23	0.00	50.00		
	Total							
	Frequency	0.00	31.00	26.00	3.00	60.00	1.53	.60
	PCT Across	0.00	51.67	43.33	5.00	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.81	1.19	1.00			
	Std Dev	0.00	.40	.40	0.00			

Chi Square = 24.491

Degrees of Freedom = 2

Significant differences found. ($P \geq .01$)

TABLE 30.--Qualitative Code Empathetic - Q(CEM).

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	19.00	11.00	30.00	1.37	.49
	PCT Across	0.00	63.33	36.67	100.00		
	PCT Down	0.00	39.58	91.67	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	29.00	1.00	30.00	1.03	.18
	PCT Across	0.00	96.67	3.33	100.00		
	PCT Down	0.00	60.42	8.33	50.00		
	Total						
	Frequency	0.00	48.00	12.00	60.00	1.20	.40
	PCT Across	0.00	80.00	20.00	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.60	1.08			
	Std Dev	0.00	.49	.29			

Chi Square = 10.417

Degrees of Freedom = 1

Significant differences found. ($P \geq .01$)

TABLE 31.--Qualitative Code Estuetic - Q(CES).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	22.00	7.00	1.00	30.00	1.30	.53
	PCT Across	0.00	73.33	23.33	3.33	100.00		
	PCT Down	0.00	44.00	77.78	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	28.00	2.00	0.00	30.00	1.07	.25
	PCT Across	0.00	93.33	6.67	0.00	100.00		
	PCT Down	0.00	56.00	22.22	0.00	50.00		
	Total							
	Frequency	0.00	50.00	9.00	1.00	60.00	1.18	.43
	PCT Across	0.00	83.33	15.00	1.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.56	1.22	1.00			
	Std Dev	0.00	.50	.44	0.00			

Chi Square = 4.498

Degrees of Freedom = 2

Significance found when minor and negligible pooled. ($P \geq .01$)

TABLE 32.--Qualitative Code Ethic - Q(CET).

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	21.00	9.00	30.00	1.30	.47
	PCT Across	0.00	70.00	30.00	100.00		
	PCT Down	0.00	48.84	52.94	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	22.00	8.00	30.00	1.27	.45
	PCT Across	0.00	73.33	26.67	100.00		
	PCT Down	0.00	51.16	47.06	50.00		
	Total						
	Frequency	0.00	43.00	17.00	60.00	1.28	.45
	PCT Across	0.00	71.67	28.33	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.51	1.47			
	Std Dev	0.00	.51	.51			

Chi Square = .082

Degrees of Freedom = 1

No significant differences. ($P < .01$)

TABLE 33.--Qualitative Code Histrionic - Q(CH).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	5.00	23.00	2.00	30.00	1.90	.48
	PCT Across	0.00	16.67	76.67	6.67	100.00		
	PCT Down	0.00	45.45	50.00	66.67	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	6.00	23.00	1.00	30.00	1.83	.46
	PCT Across	0.00	20.00	76.67	3.33	100.00		
	PCT Down	0.00	54.55	50.00	33.33	50.00		
	Total							
	Frequency	0.00	11.00	46.00	3.00	60.00	1.87	.47
	PCT Across	0.00	18.33	76.67	5.00	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.55	1.50	1.33			
	Std Dev	0.00	.52	.51	.58			

Chi Square = .424

Degrees of Freedom = 2

No significant differences. ($P < .01$)

TABLE 34.--Qualitative Code Kinesica - Q(CK).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	6.00	23.00	1.00	30.00	1.83	.46
	PCT Across	0.00	20.00	76.67	3.33	100.00		
	PCT Down	0.00	21.43	74.19	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	22.00	8.00	0.00	30.00	1.27	.45
	PCT Across	0.00	73.33	26.67	0.00	100.00		
	PCT Down	0.00	78.57	25.81	0.00	50.00		
	Total							
	Frequency	0.00	28.00	31.00	1.00	60.00	1.55	.53
	PCT Across	0.00	46.67	51.67	1.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.79	1.26	1.00			
	Std Dev	0.00	.42	.44	0.00			

Chi Square = 17.401

Degrees of Freedom = 2

Significant difference found. ($P \geq .01$)

TABLE 35.--Qualitative Code Kinestantics - Q(CKH).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	17.00	12.00	1.00	30.00	1.47	.57
	PCT Across	0.00	56.67	40.00	3.33	100.00		
	PCT Down	0.00	45.95	54.55	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	20.00	10.00	0.00	30.00	1.33	.48
	PCT Across	0.00	66.67	33.33	0.00	100.00		
	PCT Down	0.00	54.05	45.45	0.00	50.00		
	Total							
	Frequency	0.00	37.00	22.00	1.00	60.00	1.40	.53
	PCT Across	0.00	61.67	36.67	1.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.54	1.45	1.00			
	Std Dev	0.00	.51	.51	0.00			

Chi Square = 1.425

Degrees of Freedom = 2

No significance found. ($P < .01$)

TABLE 36.--Qualitative Code Proximics - Q(CP).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	7.00	22.00	1.00	30.00	1.80	.48
	PCT Across	0.00	23.33	73.33	3.33	100.00		
	PCT Down	0.00	33.33	57.89	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	14.00	16.00	0.00	30.00	1.53	.51
	PCT Across	0.00	46.67	53.33	0.00	100.00		
	PCT Down	0.00	66.67	42.11	0.00	50.00		
	Total							
	Frequency	0.00	21.00	38.00	1.00	60.00	1.67	.51
	PCT Across	0.00	35.00	63.33	1.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.67	1.42	1.00			
	Std Dev	0.00	.48	.50	0.00			

Chi Square = 4.281

Degrees of Freedom = 2

Significance found if minor and negligible pooled. ($P \geq .01$)

TABLE 37.--Qualitative Code Synnoetics - Q(CS).

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	18.00	12.00	30.00	1.40	.50
	PCT Across	0.00	60.00	40.00	100.00		
	PCT Down	0.00	37.50	100.00	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	30.00	0.00	30.00	1.00	0.00
	PCT Across	0.00	100.00	0.00	100.00		
	PCT Down	0.00	62.50	0.00	50.00		
	Total						
	Frequency	0.00	48.00	12.00	60.00	1.20	.40
	PCT Across	0.00	80.00	20.00	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.63	1.00			
	Std Dev	0.00	.49	0.00			

Chi Square = 15.000

Degrees of Freedom = 1

Significant differences found. ($P \geq .01$)

TABLE 38.--Qualitative Code Trousactional - Q(CT).

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	11.00	18.00	1.00	30.00	1.67	.55
	PCT Across	0.00	36.67	60.00	3.33	100.00		
	PCT Down	0.00	44.00	52.94	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	14.00	16.00	0.00	30.00	1.53	.51
	PCT Across	0.00	46.67	53.33	0.00	100.00		
	PCT Down	0.00	56.00	47.06	0.00	50.00		
	Total							
	Frequency	0.00	25.00	34.00	1.00	60.00	1.60	.53
	PCT Across	0.00	41.67	56.67	1.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.56	1.47	1.00			
	Std Dev	0.00	.51	.51	0.00			

Chi Square = 1.478

Degrees of Freedom = 2

No significant differnces found. ($P < .01$)

TABLE 39.--Associates - A.

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	0.00	25.00	5.00	30.00	2.17	.38
	PCT Across	0.00	0.00	83.33	16.67	100.00		
	PCT Down	0.00	0.00	78.13	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	23.00	7.00	0.00	30.00	1.23	.43
	PCT Across	0.00	76.67	23.33	0.00	100.00		
	PCT Down	0.00	100.00	21.88	0.00	50.00		
	Total							
	Frequency	0.00	23.00	32.00	5.00	60.00	1.70	.62
	PCT Across	0.00	38.33	53.33	8.33	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	2.00	1.22	1.00			
	Std Dev	0.00	0.00	.42	0.00			

Chi Square = 38.125

Degrees of Freedom = 2

Significant differences found. ($P \geq .01$)

TABLE 40.--Family - F.

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	16.00	9.00	5.00	30.00	1.63	.76
	PCT Across	0.00	53.33	30.00	16.67	100.00		
	PCT Down	0.00	45.71	45.00	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	19.00	11.00	0.00	30.00	1.37	.49
	PCT Across	0.00	63.33	36.67	0.00	100.00		
	PCT Down	0.00	54.29	55.00	0.00	50.00		
	Total							
	Frequency	0.00	35.00	20.00	5.00	60.00	1.50	.65
	PCT Across	0.00	58.33	33.33	8.33	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.54	1.55	1.00			
	Std Dev	0.00	.51	.51	0.00			

Chi Square = 5.457

Degrees of Freedom = 2

No Significant differences. (P < .01)

TABLE 41.--Individuality - I.

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	30.00	0.00	30.00	1.00	0.00
	PCT Across	0.00	100.00	0.00	100.00		
	PCT Down	0.00	60.00	0.00	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	20.00	10.00	30.00	1.33	.48
	PCT Across	0.00	66.67	33.33	100.00		
	PCT Down	0.00	40.00	100.00	50.00		
	Total						
	Frequency	0.00	50.00	10.00	60.00	1.17	.38
	PCT Across	0.00	83.33	16.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.40	2.00			
	Std Dev	0.00	.49	0.00			

Chi Square = 12.000

Degrees of Freedom = 1

Significant differences found. ($P \geq .01$)

TABLE 42.--Difference - D.

			Major	Minor	Negli-gible	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	10.00	19.00	1.00	30.00	1.70	.53
	PCT Across	0.00	33.33	63.33	3.33	100.00		
	PCT Down	0.00	34.48	63.33	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	19.00	11.00	0.00	30.00	1.37	.49
	PCT Across	0.00	63.33	36.67	0.00	100.00		
	PCT Down	0.00	65.52	36.67	0.00	50.00		
	Total							
	Frequency	0.00	29.00	30.00	1.00	60.00	1.53	.54
	PCT Across	0.00	48.33	50.00	1.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00			
	Mean	0.00	1.66	1.37	1.00			
	Std Dev	0.00	.48	.49	0.00			

Chi Square = 5.926

Degrees of Freedom = 2

Significant differences found if minor and negligible pooled. ($P \geq .01$)

TABLE 43.--Appraisal - L.

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	20.00	10.00	30.00	1.33	.48
	PCT Across	0.00	66.67	33.33	100.00		
	PCT Down	0.00	47.62	55.56	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	22.00	8.00	30.00	1.27	.45
	PCT Across	0.00	73.33	26.67	100.00		
	PCT Down	0.00	52.38	44.44	50.00		
	Total						
	Frequency	0.00	42.00	18.00	60.00	1.30	.46
	PCT Across	0.00	70.00	30.00	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.52	1.44			
	Std Dev	0.00	.51	.51			

Chi Square = .317

Degrees of Freedom = 1

No significant differences found. ($P < .01$)

TABLE 44.--Magnitude - M.

			Major	Minor	Negli-ble	Total	Mean	Standard Deviation
	Row 1							
Heroin Group	Frequency	0.00	16.00	13.00	1.00	30.00	1.50	.57
	PCT Across	0.00	53.33	43.00	3.33	100.00		
	PCT Down	0.00	69.57	36.11	100.00	50.00		
	Row 2							
Non-Heroin Group	Frequency	0.00	7.00	23.00	0.00	30.00	1.77	.43
	PCT Across	0.00	23.33	76.67	0.00	100.00		
	PCT Down	0.00	30.43	63.89	0.00	50.00		
	Total							
	Frequency	0.00	23.00	36.00	1.00	60.00	1.63	.52
	PCT Across	0.00	38.33	60.00	1.67	100.00		
	PCT Down	0.00	100.00	100.00	100.00	100.00		
	Mean	0.00	1.30	1.64	1.00			
	Std Dev	0.00	.47	.49	0.00			

Chi Square = 7.300

Degrees of Freedom = 2

Significant differences found. ($P \geq .01$)

TABLE 45.--Relationships - R.

			Major	Minor	Total	Mean	Standard Deviation
	Row 1						
Heroin Group	Frequency	0.00	12.00	18.00	30.00	1.60	.50
	PCT Across	0.00	40.00	60.00	100.00		
	PCT Down	0.00	35.29	69.23	50.00		
	Row 2						
Non-Heroin Group	Frequency	0.00	22.00	8.00	30.00	1.27	
	PCT Across	0.00	73.33	26.67	100.00		
	PCT Down	0.00	64.71	30.77	50.00		
	Total						
	Frequency	0.00	34.00	26.00	60.00	1.43	.50
	PCT Across	0.00	56.67	43.33	100.00		
	PCT Down	0.00	100.00	100.00	100.00		
	Mean	0.00	1.65	1.31			
	Std Dev	0.00	.49	.47			

Chi Square = 6.787

Degrees of Freedom = 1

Significant Differences found. ($P \geq .01$)

Status of Research Hypotheses

As a result of the analysis, the null hypotheses were rejected thus supporting the following alternative hypothesis:

H_{A1}: There will be differences in cognitive styles, as defined by Hill, between individuals abusing physically addictive drugs and those individuals using non-physically addictive drugs.

H_{A2}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better quality relationship as measured by Fiedler's 75-item instrument than clients and counselors with low quality cognitive style matches.

H_{A3}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better quality relationship as measured by Fiedler's 75-item instrument than the control group.

H_{A4}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better therapy outcome than clients and counselors with low quality cognitive style matches.

H_{A5}: Following therapy, counselors and clients with high quality similar cognitive style matches, as defined by Hill, will have a better therapy outcome than clients and counselors in the control group.

CHAPTER IV

DISCUSSION

Overview

This experiment examined several major questions: (1) Are there differences in cognitive styles between "hard" and "soft" drug users? (2) Is the quality of the therapeutic relationship enhanced by matching, as closely as possible, client and counselor according to their cognitive styles?

To seek these answers, two separate samples of sixty clients each were selected. The first sample was selected from an incarcerated population residing at the Ingham County, Michigan jail. This sample comprised the experimental group used in the matching-relationship portion of the research. The second sample, being selected from individuals residing in the tri-county area of Lansing, Michigan who presented themselves voluntarily for treatment, comprised the comparative group which was used to respond to the first question above.

Conclusions and Implications

Relationship Study

Sixty inmates who were found to have drug related problems were invited to participate in the Drug Treatment Program. Thirty of the individuals were randomly assigned to the experimental treatment group; the remaining thirty being assigned to the treatment group. Clients in the Experimental group were assigned counselors according to the similarity of cognitive styles. Six hours of counseling was provided, followed by the post-test measures.

Clients in the control group were randomly assigned to one of three counselors. Likewise they received six hours of counseling followed by the post-test measures.

As a result of the above experiment (refer to Chapter III for the data), one may conclude that the quality of the therapeutic relationship between therapist and client does improve when their cognitive styles are matched as closely as possible. Further, Table 16 suggests the higher the quality of match between client and therapist, the better the outcome. When one defines counseling as essentially a means of enhansing a client's ability to derive meaning and knowledge from life, which is also Hill's definition of a teacher, then these results are not surprising. Hill and his associates have repeatedly demonstrated

the desirability of matching teacher and student as a means of improving student performance as well as teacher effectiveness. These data suggest the same is true for the client-counselor. This research, as well as others like Zussman (1971) and Hoogasian (1971), has again demonstrated the deasibility of cognitive style matching.

Additional implications are that therapy outcome does seem to improve as a result of matching clients and counselors. From the review of the literature in Chapter I, it was found that a number of variables can be used to match client and counselor with a resulting improvement in the therapy relationship. Cognitive style matching appears to be yet another variable which can be employed to improve the therapy relationship. In addition to improved therapy relationship, the behavior of the client was seen to improve which is supportive of the findings of researchers like Wegan (1970), Strong and Schmidt (1970), Edwards and Edgerly (1970) and Heller and Goldstein (1961). Thus a higher quality match will result in a more favorable therapeutic relationship as well as improved behavior outcome than lower quality matches.

Another interesting aspect of this research is in relation to Fessinger's theory of Cognitive Dissonance. Fessinger (1957) states that the existence of dissonance, being psychologically uncomfortable, will motivate the

person to try to reduce the dissonance and achieve consonance. Perhaps the dynamics which are occurring in the Therapist-client relationship are those of an active attempt by both parties to reduce dissonance. There is a greater probability of dissonance resolution if the cognitive styles of the two parties are similar. The notion is presented that as a result of dissimilar cognitive styles, a dissonant situation is created resulting in increased distance between client and counselor. Because this dissonance is psychologically uncomfortable, both seek ways of ameliorating the situation. The relationship is therefore more difficult to establish, trust more difficult to built, and the results are poorer outcomes in terms of observed client behavior. Conversely, where the styles of cognition (Fessinger defines cognition as any knowledge, opinion or belief about environment, about oneself, or about one's behavior) are similar in that both parties perceive reality from a similar point or loci of points of view, dissonance is minimized. As a result anxiety centered around the counseling situation is more easily controlled; resulting in consonance, improved therapy relationship, and improved behavior outcome for the client. This suggests that a client who has been matched with his counselor may be motived to remain in the relationship as dissonance is minimized in the interaction between the two individuals. Dissonance may also motivate the client to leave a treatment program.

Because of the ambivalent state of many drug users, one may encounter a set of circumstances which may create a "positive" dissonance, thus directing the client toward treatment. Conversely another set of opposing circumstances may set up a "counter-dissonance" situation which outweighs the clients "positive dissonance" motivation for entering the program, thus he leaves. If the client is met in the program with a counselor who reduces the dissonance in the relationship, he may be able to exert sufficient influence on the client to reinforce the "positive dissonance" which motivated the client to seek treatment. At the same time the counselor would be dealing with the "counter dissonance" which may otherwise motivate the client to leave treatment. The balance of the scales may be swung in favor of the client remaining in the program if matching were done. Additional investigation is required to further develop these notions.

In conclusion it appears the propositions listed in Chapter II are supported by this research. Briefly stated they are: that relationship appears to be a most central and powerful variable to therapy outcome; that all psychotherapists have as their effective core the interpersonal relationship rather than the specific methods of treatment; that therapists will not be able to work equally well with all clients; that counseling is essentially

seeking of knowledge and meaning for the client; that each individual has his own cognitive style or his own way of seeking meaning; that when students/clients and teachers/counselors are matched according to cognitive style, there is substantial improvement in the student's performance.

One can further state that following therapy, counselors and clients with high quality similar cognitive style matches do have a better quality relationship than clients and counselors with low quality cognitive style matches; that following therapy, counselors and clients with high quality similar cognitive style matches do have a better quality relationship than a control group; that following therapy, counselors and clients with high quality similar cognitive style matches do have a better therapy outcome than clients and counselors with low quality cognitive style matches; and that following therapy, counselors and clients with high quality similar cognitive style matches do have a better therapy outcome than clients and counselors in the control group.

This portion of the research suggests that if one desires to develop a more effective treatment delivery system for drug abusers, serious consideration should be given to the notion of matching clients and counselors both as a means of improving outcome, but also as a method of holding clients in treatment programs.

As the data later in this chapter indicate, there are a number of elements on the cognitive style map which suggests similarity between different types of drug abusers. There appears to be a marked similarity between heroin users cognitive styles. As a result, drug program directors could utilize this similarity by providing properly trained ex-addict counselors at the entry point of a program. Presumably the ex-addict's cognitive style is already similar to the prospective client, thus one would expect the relationship to develop rapidly. "Positive dissonance" could be reinforced hopefully resulting in a better "holding" power for the program and a greater probability of changing the client's behavior.

Limitations

Because a jail population was used for the experiment, several cautions must be presented. As a result of incarceration, the client's observable behavioral repository is somewhat limited. When designing the Behavior Rating Instrument, it was apparent the teachers and turnkeys were suggesting those limited behaviors required for an individual to make a satisfactory adjustment to the jail. As the client's selection of behavior was limited, it is natural to center counseling around those limited behaviors which represent "appropriate" adjustment by the client to a jail

setting. For example, the counselor was not able to deal with specific drug taking behavior as this behavior is controlled (by the jail environment) regardless of the therapy employed. The desired behaviors, then, were such things as reporting to class on time, doing homework, interested in counseling, behaving in class, lack of fighting in the cell. Should an individual fight or cause disturbance, he could receive solitary confinement, therefore, he was less likely to fight.

The position taken in this paper is that because of the limited behavioral opportunities and because of the controls placed on the client, most of the counseling was centered around those very specific behaviors required in the jail. Where there was a good match between client and counselor, the client appeared more willing to do those things required of him by the counselor. Through this positive relationship, perhaps the client gained self-confidence through his interaction with the counselor and was therefore willing to try new behaviors i.e., going to school. It should be noted that factors and/or conditions which exist on the outside would preclude the clients from attempting certain new behaviors, however, these conditions are controlled in the jail resulting in a less hostile environment for the client to attempt new behaviors.

It is not known whether this positive relationship and resulting behavior will continue over time when the client is released from jail. It is possible the positive behavior resulted from the client's desire to do "anything" rather than remain confined to his cell. Also some clients may feel that participation in the program may result in reduced sentence or probation.

Although the above are factors which are difficult to control, this experiment has demonstrated the possibility of matching counselor and client cognitive styles with the resulting improvement in the therapy relationship and improvement of appropriate behaviors.

Comparative Study

A sample of sixty persons were randomly selected from persons volunteering for drug treatment in a local drug treatment program. Thirty were heroin users and thirty were non-heroin users. (Reader is referred to Chapter II for a more complete description.) The cognitive style instrument was administered to both groups.

The results indicated differences between the two groups on various elements. The following is a discussion of each element on the cognitive style map in relation to the two groups.

Regarding the element Theoretical Auditory Linguistic T(AL), in the non-heroin street population it was found

that 53.33% of the population were considered "Major" in this element; 46.67% were considered "Minor" or "negligible." For the heroin-street sample, 56.67% were major and 43.33% minor. The heroin-jail sample, 38.33% major and 61.67% minor. Chi square analysis suggest no difference between the street heroin-nonheroin samples for this element. It is interesting to note a slightly higher percentage of the jail heroin sample falling into the minor catagory. Overall analysis of the full street sample and the jail sample did not find differences on this element. These data suggest that approximately half of the drug abusers derive meaning from the sound of a word or graphic symbol; the remaining do not utilize T(AL) as their primary source of deriving meaning and knowledge.

Theoretical Auditory Quantitative (T(AQ) was found to be minor in all groups of drug abusers tested both from the jail and street sample. The non-heroin street sample 16.67% major and 83.33% minor; the heroin jail sample contained 21.67% major and 78.34% minor for the element T(AQ). This implies that drug abusers, either heroin or non-heroin do not derive, as a major emphasis, meaning or knowledge from the sound of a number or a mathematical symbol. It should be noted that this finding was constant across all groups. The Chi square analysis failed to reject the null hypothesis for this element.

Theoretical Visual Linguistic T(VL) was found to be significantly different between the heroin versus non-heroin street population. Eighty percent of the non-heroin street sample were major while twenty percent were minor for this element. The street heroin group contained 46.67% majors and 53.33% minors for T(VL). This suggests that for a general street population the majority of "soft" drug users rely on the written word or graphic symbol as a major modality for deriving meaning. This is not surprising in view of the fact that most "soft" drug abusers in this sample were college students or "higher class" educationally speaking. These persons learned that in order to be successful in school it is necessary to read from books in order to derive meaning. Our educational system tells us that in order to be successful in school, one must be able to derive meaning (learn) from textbooks. The general educational socioeconomic level of the heroin sample suggests an individual who has not been as successful in school. Therefore this person has not developed T(VL) as a way of deriving knowledge. For this individual the educational system has not responded to his needs nor has he responded to the needs of the educational system.

The heroin jail sample, however, was found to be 65% majors and 35% minors for this element. It is interesting to note the emphasis in the jail program is education

through classes in adult basis education, general educational development exam preparation, high school completion, or college preparatory. Further, there is more small group and/or individual emphasis. Perhaps as a result of this positive emphasis and experience in education, the clients are "learning" how to derive meaning utilizing reading or skills required in T(VL). This may account for why the jail heroin group contains a larger number of "major" than the street Heroin group. Since cognitive styles can change, perhaps this is what these data reflect. Possibly this can be seen as a positive reflection of the program. However, this must be confirmed in later research.

These data found a significant difference between non-heroin and heroin street samples. These data also found differences between the heroin-jail and heroin-street populations. The above suggests possible reasons for these differences.

Theoretical Visual Quantitative T(VQ) element results found 43.33% of the non-heroin street sample being majors and 56.67% were minors. The heroin-street sample, however, found only 10% majors and 90.00% minors for the T(VQ) element. The Chi square analysis found significant differences between these two groups. The heroin jail population was found to be similar to the heroin street population in that 16.67% were majors and 83.33% were

minors. These data suggest that the heroin user (both jail and street) do not derive meaning and knowledge through the written number or mathematical symbol. Approximately half the street non-heroin user, however, does seem to derive meaning through T(VQ). The heroin user definitely tends to be minor for this element.

An overall review of the theoretical elements finds the heroin user minor in both the Theoretical Quantitative elements, and the non-heroin street sample minor in only one i.e., T(AQ). Neither the written nor the sound of numbers or mathematical symbols provide meaning for the heroin user. Also for the street heroin sample, apparently they do not utilize T(VL) which would assist their success in school. This implies that from a treatment point-of-view, the program should not expect to deal with the heroin user in abstract numerical terms. They should not be expected to immediately succeed in a typical class room situation. Instead the system should be adjusted such that the client is given an opportunity to develop these other elements as productive ways of deriving meaning and knowledge.

This data suggest that by utilizing the strong elements i.e., Auditory Linquistic, the client will possibly be better able to respond. For example, straight drug education i.e., reading books, pamphlets may not be a productive way of "getting-to-the-clients." Because his strength rest

in his ability to derive meaning through hearing the spoken word rather than reading, auditory methods should be employed as tools which may have an impact on the client. As expressed in the vernacular, you will be coming out of the same "bag" as the client. One would be communicating by utilizing a modality which is meaningful to that client. This could justify rap sessions often seen as a part of drug programs.

The non-heroin addict seems to derive meaning from the written word, therefore, this can be seen as an additional tool for the counselor to work with in attempting to assist the client in his search for meaning and knowledge in life.

Future research will have to determine whether the elements which are not major in an individual's cognitive style represents a possible direction of emphasis for treatment. For example, will the client's behavior improve if the number of major elements of his cognitive style can be expanded such that the client has increased avenues to travel in his search for meaning?

The next series of elements in the cognitive style map are the qualitative symbols which derive their meanings from: (1) sensory stimuli; (2) humanly constructed formalisms (codes or games); and (3) the programmatic effects of phenomena which convey an impression of a definite series of images, events, or operations.

The first sensory qualitative symbol is Qualitative Auditory [Q(A)]. The non-heroin street sample contained 96.67% majors and 3.33% minors on this element. The heroin-street sample contained 63.33% major and 36.67% minor. The Chi square analysis found significant differences between these two samples. The jail heroin sample was similar to the street heroin group in that 55.00% were major and 45.00% were minors. The results suggest that non-heroin drug abusers perceive meaning from non-verbal sounds, i.e., music.

Although the majority of heroin abusers derive meaning from Q(A), a substantial number do not use this element. Future research will have to determine why fewer heroin users as a group seem to utilize this element when compared to non-heroin users.

The Qualitative Olfactory [Q(O)] symbol for the non-heroin street sample contained 86.67% major, 13.33% minor; the heroin street sample was 30.00% major, and 70.00% minor; the heroin jail sample contained 36.67% major and 63.33% minor for this element. The Chi square analysis found significant differences between the heroin and non-heroin groups. The majority of the non-heroin users were majors while the majority of the heroin users were minor. These data suggest that the non-heroin drug abuser derives meaning from odors, smells or aromas, however, the heroin user does not seem to derive as much meaning through the olfactories. Future research will have to determine whether

this is related to a physiological difference as a result of damage done to the (nares) from inhaling heroin. Since there is the absence of a major in Q(O), this reiterates the position that a large number of drug abusers have a deficit of sensory awareness.

The Qualitative Savory [Q(S)] symbol for the non-heroin street sample was found to contain 90% major and 10% minor; the heroin-street sample contained 93.33% major and 6.67% minor; the heroin jail sample being 81.67% major and 18.33% minor. The Chi square analysis found no significant differences between these groups. These data suggest that both groups derive meaning through tasts.

The Qualitative Tactile [Q(T)] symbol for the non-heroin street sample contained 96.67% major and 3.33% minor; the heroin sample contained 80.00% major and 20.00% minor; the heroin jail sample contained 81.67% major and 18.33% minor for this element. The Chi square analysis found significant differences between the non-heroin and heroin samples. The non-heroin sample tended to utilize Q(T) more frequently as a major than did the heroin users. These data suggest the non-heroin user gains meaning through the sense of touch. It is interesting to note that from observations made during the past years, a large number of "soft" drug users seem to employ drugs for reasons such as religious feelings, mind expanding, expansion of visual,

olfactory and tactile sensory expansion, whereas heroin users do not seem to want these kinds of experiences. For example often a person on "soft" drugs may "groove" on being touched or rubbed during the drug experience whereas the heroin user during his high does not appear to be seeking that type of experience. The "soft" user seeks contact with others while the heroin user tends to be alone in his experience. These are generalizations and observations which must be researched later.

The Qualitative Visual [Q(V)] symbol for the non-heroin street sample contained 83.33% major and 16.67% minor; the heroin sample was 70.00% major, 30% minor and for the jail heroin sample 81.67% major and 18.33% minor for this element. The Chi square analysis did not find significant differences between these groups. All groups were majors in this element suggesting drug users possesses the ability to derive meaning from what he sees, ie.e. strapes.

The last element in this series of sensory stimuli is Qualitative Proprioceptive [Q(P)]. The Chi square analysis found significant differences between the heroin and non-heroin drug abuser. The non-heroin street sample contained 83.33% majors and 16.67% minors; the street heroin sample contained 20.00% majors and 80.00% minors; the heroin jail sample was 33.33% major and 66.67% minors. These data suggest the non-heroin drug abuser derives major

meaning through Q(P) whereas the heroin group does not. The non-heroin abuser seems to have the ability to combine or coordinate input from muscular functions into a specific response or operation which is monitored by sensory imput, e.g., as in running to and catching a baseball or typing from written material. Apparently the heroin user does not have the ability to sense or predict consequences in the way soft drug users can. From clinical observations, it appears the heroin user has fewer ways to derive knowledge and meaning from life. The "soft" drug user, as a group, appear to have a larger number of major elements in their cognitive styles.

All of the above data suggest the non-heroin abuser does in fact have a larger (repository) of material of cognitive style elements which he can draw upon in his seeking of meaning.

The following series of elements are those dealing with codes or games. The first qualitative symbolic code is Qualitative Code Empathetic [Q(CEP)]. The non-heroin street sample contained 96.67% majors and 3.33% minors; the heroin sample contained 63.33% majors and 36.67% minors; the jail heroin sample contained 55.00% majors and 45.00% minors. The Chi square analysis reveals significant differences between the heroin and non-heroin drug abusers. The non-heroin abuser seems to have the ability to put himself into

another's place, i.e., he is sensitive to other's feelings. A significant number of heroin users do not have the ability to place himself in another's position. These data do not suggest why these differences should exist, however, from experience it appears the heroin user is more of an individual (this is confirmed later in this paper) whereas the "soft" drug user is more interested in peer group relations. It is postulated that as a result, the heroin user is not as concerned for others as the non-heroin. Again this must be researched separately.

The implications of the above suggest to workers in drug programs that when working with heroin users, one may not expect "empathic" type of therapy to be as meaningful as it would perhaps to non-heroin drug abusers. One may question whether the "Rogerian" type of treatment would be as effective with heroin users. It must be noted that some heroin users do have majors in this element. Perhaps this is suggesting a "weakness" in the heroin user, therefore, therapy should be centered around developing his ability to relate to significant others. As previously stated, heroin users have difficulty in communicating with significant others. These data seem to support this notion.

Qualitative Code Esthetic [Q(CES)] element found 93.33% of the street non-heroin population falling in the major category; 6.67% were in the minor catagory. The heroin users sample consisted of 73.33% major and 26.67%

in the minor category. The jail population heroin user was found to contain 60% in the major area and 40% in the minor area. These data were not found to suggest significant differences between the heroin and non-heroin groups if one considered the elements to contain three levels, (i.e., major, minor and negligible) however, when one considers that minor and negligible are essentially the same group and combine the two, significance is found. Thus in the chi square analysis minor and negligible scores were pooled resulting in significant differences between groups.

All groups tended to be major, however, the non-heroin group had a larger percentage of persons in the major category than either the street heroin or jail heroin population. Thus heroin users do derive meaning through the ability to enjoy the beauty of an object or an idea. The non-heroin user group contained a larger percent of individuals who do derive meaning through Q[CES]. This is expected as a significant number of the soft users use LSD or other hallucinogens. They want the psychodelic experience whereas heroin users are not after this type of experience.

Originally this writer expected the non-heroin group to be major for this element and the heroin group to be minor. Thus the data was surprising in that a larger percentage of heroin users do derive meaning from esthetic things. In retrospect, when considering heroin users this

writer has worked with, the majority enjoyed flashy, colorful clothing, posters and decorations for their rooms.

As for counseling, these data suggest the heroin user has considerable strength in the area of esthetics than some persons may have originally considered. As a result, the counselor could focus on this strength area in terms of assisting the client in "turning on to life" in non-drug terms. Through increased emphasis on improving the client's environment so it is more attractive, visually as well as physically, this possibly could aid in the overall rehabilitation of the heroin user. Q(CES) also is the ability to enjoy an idea. This should be remembered by the counselor in working with the heroin user. He can respond to "temporal" as well as physical stimuli.

No significant differences were found between the heroin and non-heroin groups on the Qualitative Code Ethic [Q(CET)]. 73.33% of the non-heroin group were major; 26.67% were minor; 70% of the heroin group were major; 70% of the heroin group were major and 30% were minor. For the jail heroin populations the figures were 58.33% major and 41.67% minor.

An interesting point to consider regarding this element is one may have predicted that because drug users operate outside of the law, they may not be committed to a set ethics or principles. These data suggest that the majority

of drug users (heroin and non-heroin groups) are committed to specific values or duties. The question remains, however, are they committed to values and duties as interpreted by the "middle class society" or do the drug abusers have a different set of values and duties that they are committed to. With regard to rehabilitation, the notions that drug abusers are committed to specific values and duties suggests the client may have strengths which before may have been assumed to be missing from his behavioral repository.

No significant differences were found between the groups on Qualitative Code Histrionic [Q(CH)] which is the ability to deliberately stage behavior to produce a desired effect. In the non-heroin group 20.00% were major; 80.00% minor; the heroin group were 16.67% major, 83.33% minor; the heroin jail population were 26.67% major and 73.33% minor.

The majority of all groups tested were found to be minor in this area. This suggests drug users do not derive meaning from the ability to deliberately stage behavior to produce the desired result. These results are quite surprising when one considers how much manipulative behavior is observed in a drug treatment program.

Significant differences were found in Qualitative Code Kinesics between the two groups. The non-heroin group tended to be major in this area (73.33%) while the heroin

group tended to be minor (80.00%). The heroin jail population were also minor (75%).

These data suggest that soft drug users derive meaning from the ability to communicate through bodily movements. This would be in keeping with this population's apparent interest in acid rock. One would expect the heroin group to derive meaning in this same fashion, however, the data suggest otherwise. Perhaps one reason for these differences center around the drug of choice. The non-heroin group tended to be individuals on "uppers" while heroin is a "downer." It is possible as a result of the "down" or sedative effect of the heroin, this group presently do not derive meaning through this method. These data raise the question as to whether the heroin user has always been the way he is (from a cognitive style point of view) or has his style changed as a result of the drug? Also did his cognitive style suggest his drug of choice?

No significant differences were found for the element Qualitative Code Kinestheitcs Q(CKH). All groups were major with the non-heroin group at 66.67%; the heroin group at 56.67% and the jail group at 53.33%. These data suggest drug abusers tend to derive meaning through the willingness and interest in acquiring motor skill abilities.

Regarding the rehabilitation of the client, these data suggest the client has an interest in developing motor

skills which may be taught as a meaningful option to drug behavior. Possibly the client can "turn on" to sports and athletic events instead of drugs. Further, these data suggest the importance of an appropriate recreational component in a complete treatment program.

Significant differences were found between the non-heroin and heroin group for the element Qualitative Code Prosimics [Q(CP)]. This was true when the minor and negligible categories were pooled. As previously discussed, the major research question is whether the element is major or not.

46.67% of the non-heroin street group were major; 53.33% were minor; 23.33% of the street heroin group were major; 76.67% were minor; 31.67% of the jail heroin group were major and 68.34% minor.

These data suggest that approximately half the non-heroin users derive meaning in the ability to judge appropriate physical and social distance between oneself and another as defined by the other person, e.g., being able to recognize if you may put your arm around that girl or call the boss by his first name. The heroin group data suggest that 76.67% are not able to measure appropriate social distance. From observations of the two populations these data might be expected. The soft drug users tend to be more "socially skilled" and more accustomed to judging a wider

variety of social situations. This does not suggest the heroin users are not able to measure social distance, instead the magnitude or variety of social situations may be more limited. The data seem to support other clinical observations including the notion that heroin users have an inability to form meaningful interpersonal relationships or to communicate effectively. Therapy should be centered around increasing the client's social articulation regarding his relationships and communicating formations.

Significant differences were found between the groups for the element Qualitative Code Synnoetics [Q(CS)]. Both groups of drug abusers were major for this element, however, 100% of the non-heroin users were major while only 60% of the heroin group were majors, and 51.67% of jail heroin population were minor. These data are surprising when one considers that qualitative code synnoetics represents one's knowledge of one's abilities, i.e., being able to establish realistic goals for oneself. Clinical observations suggest drug clients generally are not able to establish realistic goals, however, these data suggest otherwise. It is interesting that 100% of the non-heroin (soft drug users) were major in this element. Soft drug users perhaps "feel" or "believe" their drug taking behaviors are realistic goals for them. Again the data do not speak to the issue of "appropriate" goals, only realistic goals for that individual.

What may be realistic goals for one group (i.e., taking drugs) may not be considered realistic for another population. The other interesting point is perhaps that soft-drug users "plan" to take drugs and establish "drugs" and the effects thereof as a goal for themselves whereas the heroin group "evolve" into drugs not as much as a matter of choice as it is chance. These opinions must be further researched.

Another consideration is that drug clients in fact are able to establish goals for themselves, thus in treatment one must utilize this element as a strength.

The element Qualitative Code Transactional [Q(CT)] was not found to differ significantly between the test groups. 46.67% of the non-heroin group were majors; 53.33% minors; the heroin group contained 36.67% majors; 63.33% minors; the heroin jail group contained 40.00% majors and 60.00% minors. Q(CT) is the ability to establish with others a positive communication system which influences their actions or goals.

It is interesting to note that the data for Q(CT) and Q(CP) are very similar. This suggests that emphasis should be placed on assisting the clients in increasing their ability to judge the appropriate physical and social distance between oneself and another (i.e., Q(CP) as well as increasing the clients ability to establish a positive communication system with others.

The next three cognitive style elements are the Cultural Determinants of the meanings of symbols.

Significant differences were found between the test groups on the element Associates (-A-). 76.67 percent of the non-heroin group are majors, while 23.33 percent were minors for this category. 100 percent of the heroin (both street and jail groups) were minor.

The implication of these data is that soft drug users tend to derive meaning from his relationship and interaction with his peers while the heroin group does not receive meaning in this manner. Clinical observations tend to support this notion. Most drug abusers are social in nature, enjoying group dynamics while the heroin users do not appear to be as group oriented. Further, the heroin user appears to require the group as a means of securing his drugs but not necessarily as a means of psychological support. On the other hand, the soft drug abuser appears to enjoy the group as a means of psychological support.

It was extremely significant that in all samples of heroin abusers tested, none derived meaning through their peer group whereas over three quarters of the soft drug users did derive meaning from the associate peer relationship.

As a result of these data one must pose the following questions: Is it appropriate for drug treatment and rehabilitation programs to utilize the group therapy technique

as its primary mode for providing services for heroin abusers? Do these data suggest that because the heroin abuser previously has not derived meaning from his associate or peer group that this is a point of weakness within the individual client and therefore, considerable effort should be placed in group therapy centered around the idea of resocialization, increasing intercommunication skills, and assisting the client in developing appropriate social interaction skills? These data appear to be in conflict with the widely held concept that all heroin abusers are essentially group oriented and as a result of this orientation, fall into heroin abuse because of this group dependency. These data raise serious questions with that hypothesis and suggest that considerable research is required to evaluate this opinion. With regard to the soft drug abuser, the data suggest that although group therapy may be meaningful to these individuals, perhaps emphasis should be placed on the decision-making process so that the individual is able to make his own decision based upon input from the group, but not a decision which is dictated by the group.

There were no significant differences found in the Family (F) element between the two groups. The non heroin (soft drug user) group consisted of 63.33 percent in the major category and 36.67 percent in the minor category. For the street heroin population, 53.33 percent were in the major

category and 46.67 percent were in the minor category. The heroin jail population consisted of 41.67 percent in the major category and 58.33 percent in the minor category.

These data suggest that the non-heroin abuser derives meaning from his family relationship. Additionally, the heroin abuser, both the street population and jail population, are approximately split in the category suggesting that a large number of heroin abusers do in fact derive considerable meaning from their family or surrogate family relationship.

Regarding the implications for rehabilitation, these data suggest tht drug users generally do derive meaning from family relationships and experiences, thus the family should be involved in the entire rehabilitation dynamic if we are to be truly successful in resocializing and reintegrating the client back into the community.

It appears that this is a strength within drug abusers which perhaps has not been used in the past as extensively as it should have been. As there were no sufficient differences between groups, these assumptions appear to hold for the majority of drug abusers. Thus, in designing a truly comprehensive treatment and rehabilitation program, it is necessary to involve the family in the overall treatment process. This could include family counseling with the client.

For the element Individual-I-, significant differences were found between the groups. 66.67 percent of the non-heroin street group were in the major category while 33.33 percent were minor. The street heroin population contained 100 percent in the major category. The jail population of heroin abusers contained 91.67 percent in the major category and 8.33 percent in the minor category. These data suggest that the majority of all drug abusers are major in the individual category, but interestingly enough, a much larger percentage of heroin abusers are major.

Heroin abusers derive meaning from individual interaction with others but not group interaction. This suggests that the person has innate knowledge that his way is best, along with an ability and willingness to direct his own behavior accordingly. It further indicates independence in decision making. Thus it appears that the heroin abuser has an ability and a willingness to direct his behavior either toward or away from drug abuse. It is interesting to note, from a clinical point of view, that the majority of individuals in programs will verbalize the fact that they regret having used heroin, but when challenged they admit they enjoy using heroin and if at all possible, they would like to continue doing so. One third of the non-heroin group did not derive meaning from the cognitive style element Individual.

There are several implications for treatment. First, a number of persons assume heroin abusers do not possess sufficient internal strength to direct their own behavior. Many assume the heroin user abuses drugs to "go along with the group." These data refute the notion and further suggest the individual has substantial internal strength which can be utilized in directing his behavior in another direction. In treatment, more emphasis should be placed on individual "behavior contracts" with the client instead of all group contracts. One should not assume that group experience alone be sufficient and that individual work be nonproductive for heroin users.

On the cognitive style element Difference-D-, significant differences were found if the negligible and minor categories are combined. Again, the important issue is whether or not the individual is major in an area. As a result of pooling these categories, it was found that 63.33 percent of the non-heroin street users were major, 36.67 percent were minor; the street heroin population contained 33.33 percent major and 66.67 percent minor. When comparing the jail population to the non-heroin street population, there are no significant differences in that 63.33 percent of the heroin jail population were major in this category, and 36.67 percent were minor. These data do not suggest reasons for this apparent difference between the jail population and street population.

For persons with a major -D-, this indicates that in his reasoning process the client places emphasis on a one-to-one contrast of selected characteristics or traits. Thus in the decision making process, the data suggests the non-heroin abuser, in order to formulate hypothesis, makes a differential one-to-one comparison before he makes a decision regarding a situation. Apparently the street heroin user does not utilize -D- in this fashion, however, the jail heroin user does.

Another way of understanding this element is that a major -D- person has a tendency to think in terms of opposites. For example racial extremists would likely show a -D- exclusive of a major -R- (relationship). An integrationist would be more likely to have a major R as he tends to look for similarities rather than differences in people. Thus, the element -D- must be examined in light of element -R-. It is interesting to speculate that a person with -D- would form stereotypic attitudes.

The counseling approach for major -D- should be highly pragmatic straight forward. Abstract philosophical approaches would seem unreal and not useful to the client.

No significant differences between the groups were found on the element appraisal -L-. It was found that 73.33% of the non-heroin abusers were in the major category, and 26.67% were in the minor category. The street heroin population contained 66.67% majors and 33.33% minors. The

heroin jail population contained 63.33% majors and 36.67% minors.

The majority of drug abusing individuals use appraisal as a means of formulating hypothesis in the decision making process. Appraisal is the process involving the application of Magnitudes, Difference and Relationships in reaching a probability conclusion. These data are surprising in that one would not expect drug abusers to be appraisers. From clinical experience, a large number of drug abusers appear to make a decision on the basis of a snap judgment. Perhaps these data suggest that the client has the potential for appraisal, but from clinical experience he does not necessarily use it. This suggests a deficiency in the decision making process. The counselor would have to examine the dynamics of the client's past decision making behaviors and determine which factors influenced the decision. By utilizing the client's appraisal ability, the counselor can evaluate other options which were open to the client in the past but were not taken. In this way the client can learn to use his appraisal abilities.

Significant differences were found between the groups on the cognitive style element magnitude -M-. 23.33% of the non-heroin street group were majors, 76.67% were minors. The jail heroin population consisted of 46.67% major and 53.33% minors.

The majority of non heroin soft drug abusers do not derive meaning through categorical thinking, i.e., using rules, definitions, and/or classifications in formulating hypothesis. Approximately half of the heroin abusers, both street and jail groups, do use categorical thinking. These differences are not surprising in that the majority of soft drug users appear to be alienated by rules, definitions, laws and civic requirements for acceptable behavior. They select behaviors not on the basis of what a rule might say, but instead on what they feel is appropriate. Interestingly enough, half of the heroin population do use rules in this process. This could reflect the notion that a large number of heroin abusers come from cultures which stress the use of rules. These rules were dictated by the "middle class" for the "lower class." thus for survival, the culture has learned it must obey the rules established by others. Magnitude as a major represents an elementary method of decision making and requires considerable structure in a person's life. Also the individual uses external instead of internal forces to make a decision.

The heroin abuser requires more structure in his life than the non-heroin abuser according to the data. As for treatment, this suggests that a highly structured treatment program will be more meaningful to the clients who are abusing heroin, but at the same time there is the danger of

reinforcing the client's categorical thinking and perhaps, stimulating dependency on the program. From clinical experience, an alarming number of clients within the therapeutic community have learned a highly structured way of life where rules and regulations are well known and as a result, the client has a great deal of difficulty in making the transition from the therapeutic community to the community at large. If we are to reintegrate the client into the larger community, therapeutic communities, as well as other treatment modalities, must first provide appropriate structure in order for the client to deal with his drug abusing behavior, but as the client progresses through treatment, it is necessary to begin a full range of services which will wean the client from the therapeutic structured protected environment to the broader community to which the client must eventually return. It is interesting that the majority of the therapeutic communities deal with heroin abusers while most non-heroin abusers seek treatment from rap houses and outpatient facilities. This is in keeping with the soft drug users dislike for structure.

Significant differences were found in the Relationship -R- category in that 73.33% of non-heroin abusers were majors, while 26.67% were minors. The heroin street population contained 40% majors and 60% minors. The jail population consisted of 53.33% majors and 46.67% minors.

The non-heroin soft drug user derives meaning by a comparison of two or more selected characteristics or traits through similarities. In other words, in the decision making process the client will look for likeness in things, compare characteristics and examine relationships between these characteristics before a decision is made. Such a client would respond well to a counselor who uses examples and similes to enhance explanations. Approximately half the heroin users derive meaning from -R-.

No significant differences were found between the groups on the last element in the cognitive style map, circle K -(K)-. 23.33% of the non-heroin abusers were major in this category, 73.67% were minor. For the street population 43.33% were major, 56.67% were minor. The jail population contained 23.33% majors and 76.66% minors. Thus the majority of drug abusers, either heroin or soft, do not derive meaning from the deductive inferential process. This inferential process is utilized most frequently in logical proofs, e.g., in mathematics and in symbolic logic.

With regard to treatment, the majority of the clients will not utilize deductive reasoning in arriving at a decision, but instead utilize inductive reasoning as found either in magnitude, difference, relationships, or the appraisal categories. In therapy a deductive presentation on the ill effects of drug abuse will not be particularly meaningful to the client. The counselor can not deal with the

"universe" drug abuse and then reduce this down to the individual. In other words, from given premises centered around a "universal" truth, one can not expect the drug user to reduce this to a necessary conclusion. Instead, if the counselor deals with particulars, the client is more likely to generalize to a broader universe of behaviors.

The comparative study found that non-heroin abusers do differ from heroin abusers on a number of cognitive style elements and that these differences suggest specific types of activities which should occur in a comprehensive treatment program. Further, there needs to be a clear delineation between the types of services provided in treatment programs. The concept is that by clearly defining the treatment process, and by knowing the cognitive styles of the client, it is possible to perscribe the treatment experience most likely meaningful to the client. This is similar to what Hill has been able to do in the field of education.

For example, the heroin abuser requires substantial group resocialization, improved interpersonal relationship and communication skills, whereas, the soft drug user requires emphasis on increasing individual internal strength.

If our rehabilitation goal is the resocialization and behavioral reorganization of the client, the treatment programs must be sensitive to the fact that each person is a unique individual with his own way of deriving meaning

from life. The cognitive style map provides us with insights required in order to see the uniqueness of the client. Also it helps to understand the client in terms of how, in the past, he has derived meaning and how in the future he might be expected to derive meaning from life.

TABLE 46.--Summary Composit Cognitive Style Map of Heroin and Non-Heroin Drug Users.

Element	Non-Heroin Soft Drug User	Heroin User
T(AL)		Major
T(AQ)		Minor
T(VL)*	Major	
T(VQ)*		Minor
Q(A)*	Major	Major
Q(O)*	Major	Minor
Q(S)	Major	Major
Q(T)*	Major	Major
Q(V)	Major	Major
Q(P)*	Major	Minor
Q(CEM)*	Major	Minor
Q(CES)*	Major	Major
Q(CET)	Major	Major
Q(CH)	Minor	Minor
Q(CK)*	Major	Minor
Q(CKH)	Major	
Q(CP)*		Minor
Q(CS)*	Major	
Q(CT)		Major
A*	Major	Minor
F	Major	
I*		Major
D*		
L	Major	Major
M*		Major
R*	Major	
X		

*Indicates significant differences. ($P \geq .01$)

Blocks which are blank indicate element was not clearly either major or minor.

Table 46 represents a summary composit of the cognitive style maps of the heroin and non-heroin drug user. For those blocks which are blank, this indicates the potential of either a major or minor. Where a major or minor is indicated, this was where the element was very clearly one or the other.

Limitations

As was previously stated, the population has been clearly defined and generalizations from these data would be appropriate to the described population. It is the reader's responsibility to determine whether or not the population, as described here, is similar to the population to which he wishes to generalize.

The information in this research should provide indicators to program planners regarding areas to be considered in developing a comprehensive human services delivery system. It is important that these data be seen as preliminary and that additional confirmation work is required. It should be pointed out, however, this study has been successfully duplicated in Virginia.

The following considerations are presented. To fully understand a client it is necessary to examine his individual cognitive style map and to examine the elements in relationship to each other. Caution must be taken not to stereotype all drug users in a category, instead this work

must be viewed as defining parameters in which the majority of drug abusers deem to go, but within these parameters there is much room for individuality.

A client's cognitive style can change as he progresses through therapy. Presently, it is not known exactly what effect treatment has on cognitive style or exactly what effect cognitive style has on treatment. We do not know whether it is "good" or "bad" for a person to be a major or minor in an element. For example, if a person is a minor in Associates, does this mean we should not place him in a group experience as he does not derive meaning from the group, or does it mean we should place him in a group so he can "learn" to derive meaning from peers? Does the minor represent a "strength" or a "weakness?" Hopefully this research will stimulate additional studies designed to resolve some of these issues.

Caution is advised regarding the possibility of random differences being reported as significant differences when large numbers of chi squares are performed.

Summary

From the experimental study it was learned that the higher the quality of match between client and counselor, the better the therapeutic relationship. Outcome behaviors also improved.

From the comparative study it was found that the cognitive styles of heroin and non-heroin drug users do

differ, that the heroin user has fewer major elements in his cognitive map and that the heroin group has fewer ways of deriving meaning and knowledge from life than the non-heroin drug user. The cognitive style of heroin users was found to be highly similar on several elements, likewise the soft drug users had a number of common elements which suggests intra-group similarities and inter-group differences.

As a result of the study the following recommendations are made. Clients and counselors should be matched as closely as possible to facilitate the therapeutic relationship. Because of intra group similarities of heroin users, qualified trained ex-addicts already have highly similar cognitive styles to the clients, thus the relationship should form quickly, hopefully resulting in better holding power of the program.

Further, because the cognitive styles of the heroin user is different from the soft drug user, consideration must be given to providing differential treatment programs.

It was found the drug abusing client enters the therapy relationship with a considerable number of strengths which the counselor can use as building blocks in the rehabilitation process.

Finally, the cognitive style map should be viewed as a devise which can provide the counselor with a window, through which he can look into the life of his client. The instrument indicates where an individual is now in terms of his personal development and growth. The major elements in

the client's map represent those things which, in the past, have been meaningful to him. It serves as an indicator of activities which may be meaningful in the future. This is but one tool which may contribute to increased understanding and communications with the client.

In order to change attitude-behaviors, (Jordan, et al., 1972) we must first be able to communicate in meaningful ways with the individual we are seeking to have and impact on. If we understand the client's cognitive style and are sensitive to him as a unique human being, then perhaps we can establish an effective communications system which will further enchance the relationship.

Hopefully the result will be the client's attitude-behavior change, his resocialization and his ultimate reintegration into society as a productive citizen.

APPENDICES

APPENDIX A

Set Theory Form

SET THEORY FORM

Symbologosics can be considered as a set, "S," comprised of 240 possible binomial combinations involving major and minor theoretical and qualitative symbolic orientations. Expressed in the form of set notation, we have:

$$S = \left\{ \begin{array}{ll} (T_x\text{-}Q_y), & (T_x\text{-}q_y), \\ (t_x\text{-}q_y), & (Q_y\text{-}t_x). \end{array} \right\}$$

where "T" denotes a major theoretical symbolic orientation of an individual; "Q: indicates a major qualitative symbolic orientation; "t" a minor theoretical symbolic orientation; "a" a minor qualitative symbolic orientation; the subscript "x" is a place-holder for one of the following notations: "al"-auditory linguistic, "aq"-auditory quantitative, "vl"-visual linguistic and "vq"-visual quantitative; and the subscript "y" holds a place for one of the fifteen following qualitative notations: "v"-visual, "a"-auditory, "t"-tactile, "s"-savory, "o"-olfactory, "p"-proprioceptive, "cem"-code empathetic, "ces"-code esthetic, "cet"-code ethic, "ch"-code histrionic, "ck"-code kinesics, "ckh"-code kinesthetics, "cp"-code proxemics, "cs"-code synnoetics and "ct"-code transactional. Since there are 60 combinations of

the form (Tx-Qy), 60 of the type (T_x-q_y), 60 of the group (Q_y-t_x) and 60 of the "double minor" category (T_x-q_y); "S" is a finite set consisting of 2 x 60 = 240 elements.

Determantics is a set, "E," composed of fifteen elements, twelve of which are binomial combinations and three of which are of monomial form. Stating the set of cultural determinants of the meaning of symbols in set theory form, we consider the following:

$$E = \left\{ \begin{array}{ccc} I, & A, & F, \\ (I\text{-}a_{(z)}), & (A\text{-}i_{(z)}), & (F\text{-}i_{(z)}), \\ (I\text{-}f_{(z)}), & (A\text{-}f_{(z)}), & (F\text{-}a_{(z)}). \end{array} \right\}$$

where "I" indicates a major individuality determinant of the meaning of symbols, "A" denotes a major associates determinant, F a major family determinant, "i" a minor individuality determinant, "a" a minor associates determinant, "f" a minor family determinant and the subscript "z" holds a place for either a positive sign (+) or a negative sign (-), depending upon the type of influence the minor determinant involved tends to exert on the individual when he is in the process of determining meanings of symbols (e.g., words, sentences, pictures, stories, tastes).

The inferensics set, "H," consists of five monomial and six binomial elements. Expressed in set notation, the eleven elements appear as follows:

$$H = \left\{ \begin{array}{cccc} M, & D, & R, & L, \\ (M\text{-}d), & (D\text{-}m), & (R\text{-}m), & \textcircled{K}, \\ (M\text{-}r), & (D\text{-}r), & (R\text{-}d). & \end{array} \right\}$$

hwere "K" indicates a deductive inference process, "M" denotes a major magnitude modality of inference, "D" represents a major difference inferential mode, "R" indicates a major modality of relationship, L represents the major inference of appraisal, "M" denotes a minor magnitude inference of appraisal, "m" denotes a minor magnitude inferential mode, "d" indicates a minor modality of difference and "r" represents a minor relationship mode of inference.

APPENDIX B

Cognitive Style Instrument

25H 1. In evaluating the performance of others, I find it important to determine the standards which were set for him.

A. Rarely B.Sometimes C.Usually

16C 2. Learning to swing a bat the right way is important.

A.Rarely B.Sometimes C.Usually

25D 3. I prefer working in situations where standards and rules are stated explicitly.

A.Rarely B.Sometimes C.Usually

16B 4. I am well-coordinated.

A.Rarely B.Sometimes C.Usually

15E 5. Walking with a spring in your step gives the impression that you are happy.

A.Rarely B.Sometimes C.Usually

27C 6. I find the reasoning patterns required in statistics rewarding to use.

A.Rarely B.Sometimes C.Usually

1C 7. I understand the daily news better if I hear it on the radio rather than reading about it in the newspaper.

A.Rarely B.Sometimes C.Usually

18E 8. I know my capabilities.

A.Rarely B.Sometimes C.Usually

6E 9. I believe that the customary smell of a store influences its sales volume.

A.Rarely B.Sometimes C.Usually

15C 10. I shrug my shoulders when saying "I don't know."

A.Rarely B.Sometimes C.Usually

10B 11. My partners tell me I am a good dancer.

A.Rarely B.Sometimes C.Usually

20E 12. Before taking a new job, I discuss it with my friends.

A.Rarely B.Sometimes C.Usually

20F 13. I make personal decisions after discussing them with my friends.

A.Rarely B.Sometimes C.Usually

27E 14. I find it easier to win an argument when I state premise (Blank is true) and give a conclusion to the premise which is unescapable: (Therefore Blank must be true).

A.Rarely B.Sometimes C.Usually

27G 15. I understand geometric theorems.

A.Rarely B.Sometimes C.Usually

26C 16. I tend to see all parts of the world as being interconnected.

A.Rarely B.Sometimes C.Usually

11G 17. I can tolerate the inability to concentrate which characterizes those who are newly "in love."

A.Rarely B.Sometimes C.Usually

21B 18. The family that prays together stays together.

A.Rarely B.Sometimes C.Usually

21F 19. I understand events better after I have discussed them with my family.

A.Rarely B.Sometimes C.Usually

26F 20. I try to understand why people break rules.

A.Rarely B.Sometimes C.Usually

16E 21. To become a good typist, I would practice correct finger movements.

A.Rarely B.Sometimes C.Usually

16F 22. When I play golf or other sports I take several practice swings before I start to play.

A.Rarely B.Sometimes C.Usually

17B 22. I prefer to ask favors of close friends and associates rather than from work supervisors.

A.Rarely B.Sometimes C.Usually

17E 23. If I attempted to kiss someone, I would not be slapped.

A.Rarely B.Sometimes C.Usually

17G 24. If I bump against another person in a store, I apologize.

A.Rarely B.Sometimes C.Usually

21H 25. I make it a point not to let my work interfere with family plans.

A.Rarely B.Sometimes C.Usually

22F 26. I have little need for others to help me make decisions.

A.Rarely B.Sometimes C.Usually

22D 27. When given a problem to solve, I can come to the best solution by myself.

A.Rarely B.Sometimes C.Usually

1H 28. I prefer to be in lecture type classes.

A.Rarely B.Sometimes C.Usually

2G 29. I discuss the "sale" prices before I go shopping.

A.Rarely B.Sometimes C.Usually

3B 30. My written explanations are better than my spoken ones.

A.Rarely B.Sometimes C.Usually

11H 31. I laugh with the person who laughs when he stubs his toe because I know it hurts.

A.Rarely B.Sometimes C.Usually

24C 32. I don't understand how people can appreciate a problem until they know as much about it as possible.

A.Rarely B.Sometimes C.Usually

13A 33. The values of our society are just.

A.Rarely B.Sometimes C.Usually

13C 34. I would give up monetary gain to avoid a compromise of principles.

A.Rarely B.Sometimes C.Usually

13E 35. I do not permit personal affairs to interfere with completing an assignment.

A.Rarely B.Sometimes C.Usually

13H 36. I would stop for a S.T.O.P. sign at 3:00 a.m. even if there were no other person in sight.

A.Rarely B.Sometimes C.Usually

14A 37. I can imitate someone else before a group.

A.Rarely B.Sometimes C.Usually

19H 38. Sales people always find the merchandise that I'm asking for.

A.Rarely B.Sometimes C.Usually

7D 39. Blindfolded, I can Taste the difference between chicken and beef.

A.Rarely B.Sometimes C.Usually

18H 40. I know my anxiety threshold.

A.Rarely B.Sometimes C.Usually

19B 41. In group discussions, I am the catalyst for reaching decisions.

A.Rarely B.Sometimes C.Usually

14F 42. I can act hurt and depressed in order to acquire favors.

A.Rarely B.Sometimes C.Usually

23C 43. In my choice of clothing, I usually wear contrasting colors.

A.Rarely B.Sometimes C.Usually

14C 44. I can give the impression that I am happy and comfortable even though I am angry and uncomfortable.

A.Rarely B.Sometimes C.Usually

18F 45. I know what my physical responses will be to a particular task.

A.Rarely B.Sometimes C.Usually

5G 46. Random sounds interfere with my ability to concentrate.

A.Rarely B.Sometimes C.Usually

8A 47. I can feel the difference between wool worsted and double knit.

A.Rarely B.Sometimes C.Usually

8B 48. I can get dressed in the dark.

A.Rarely B.Sometimes C.Usually

9A 49. I prefer to read articles which are accompanied by pictures or drawings.

A.Rarely B.Sometimes C.Usually

6G 50. Paint smell in a room is disturbing to me.

A.Rarely B.Sometimes C.Usually

14B 51. I am a good actor.

A.Rarely B.Sometimes C.Usually

10D 52. I can write legibly while another person dictates to me.

A.Rarely B.Sometimes C.Usually

2A 53. I find it easy to add spoken or dictated numbers mentally.

A.Rarely B.Sometimes C.Usually

7E 54. I return to a restaurant because the food there tasted good.

A.Rarely B.Sometimes C.Usually

17F 55. I feel uncomfortable when children call me by my first name.

A.Rarely B.Sometimes C.Usually

10G 56. I can pitch horseshoes or lawn darts quite well.

A.Rarely B.Sometimes C.Usually

15G 57. I interpret a person's mood by the way they sit or pose.

A.Rarely B.Sometimes C.Usually

8D 58. I prefer furniture that "feels" good when I run my hand over the upholstery.

A.Rarely B.Sometimes C.Usually

23A 59. I understand a topic better if I examine it to learn how it differs from other topics.

A.Rarely B.Sometimes C.Usually

20G 60. I value my friends' political opinions.

A.Rarely B.Sometimes C.Usually

10H 61. I am considered to be a "good" amateur athelete.

A.Rarely B.Sometimes C.Usually

2B 62. I quote statistics to others in order to prove my point in an argument.

A.Rarely B.Sometimes C.Usually

9B 63. I choose clothes for the way they look.

A.Rarely B.Sometimes C.Usually

17H 64. I do not pat strangers on the back if I have an occasion to congratulate them.

A.Rarely B.Sometimes C.Usually

9D 65. I understand a lecturer better if I can see him while he talks.

A.Rarely B.Sometimes C.Usually

11F 66. When someone is frightened, I can be patient and calm rather than get angry.

A.Rarely B.Sometimes C.Usually

9E 67. A story is easier to understand in a movie than in a book.

A.Rarely B.Sometimes C.Usually

27H 68. I avoid probability statements in solving problems.

A.Rarely B.Sometimes C.Usually

10A 69. I can run and catch a ball that has been struck or thrown.

A.Rarely B.Sometimes C.Usually

20H 70. I would join a particular religious group because my friends belong to it.

A.Rarely B.Sometimes C.Usually

9F 71. I "think" in pictures and graphic models instead of words and phrases.

A.Rarely B.Sometimes C.Usually

2C 72. Oral mathematics tests are easier than written mathematics tests.

A.Rarely B.Sometimes C.Usually

9C 73. I enjoy art exhibits.

A.Rarely B.Sometimes C.Usually

19A 74. Children find me easy to get along with.

A.Rarely B.Sometimes C.Usually

11B 75. I understand the emotions of others.

A.Rarely B.Sometimes C.Usually

25B 76. I have no sympathy for people who break the law.

A.Rarely B.Sometimes C.Usually

22G 77. My "best" decisions are made alone.

A.Rarely B.Sometimes C.Usually

9G 78. When I tune a radio, I pay close attention to the numbers on the dial.

A.Rarely B.Sometimes C.Usually

2D 79. When taking classes in mathematics, I find it easy to "talk in formulas" with my classmates and teacher.

A.Rarely B.Sometimes C.Usually

16A 80. I can repair objects with small parts without watching my hands.

A.Rarely B.Sometimes C.Usually

11E 81. I am able to offer criticism without offending.

A.Rarely B.Sometimes C.Usually

25C 82. Life is simple if you go by the rules.

A.Rarely B.Sometimes C.Usually

22E 83. I regard my personal goals as more important than the goals of others.

A.Rarely B.Sometimes C.Usually

9H 84. I feel better acquainted with someone after seeing pictures of him rather than reading about him.

A.Rarely B.Sometimes C.Usually

2E 85. It is easy for me to remember the numbers and formulas I hear during a conversation.

A.Rarely B.Sometimes C.Usually

16H 86. I have practiced handwriting skills until I write legibly.

A.Rarely B.Sometimes C.Usually

15H 87. Eye movements are important supplements to my conversations.

A.Rarely B.Sometimes C.Usually

25G 88. I don't find sufficient reason to change my mind on a subject once I identify the rule which applies.

A.Rarely B.Sometimes C.Usually

21E 89. I find it important to consult my family in planning vacations.

A.Rarely B.Sometimes C.Usually

5A 90. I can tell if something is wrong with an engine by listening to it.

A.Rarely B.Sometimes C.Usually

2F 91. I can remember a telephone number once I hear it.

A.Rarely B.Sometimes C.Usually

17C 92. I am seldom "brushed off."

A.Rarely B.Sometimes C.Usually

11A 93. My friends tell me that I am understanding.

A.Rarely B.Sometimes C.Usually

26D 94. When looking at something constructed by someone else (e.g., a painting, a building, a piece of furniture) I like to figure out why the person created it as he did.

A.Rarely B.Sometimes C.Usually

21G 96. I consult with my immediate family before making important decisions.

A.Rarely B.Sometimes C.Usually

5B 97. The tone or inflection of a speaker's voice gives additional meaning to what he says.

A.Rarely B.Sometimes C.Usually

1E 98. I prefer verbal directions rather than trying to follow a map.

A.Rarely B.Sometimes C.Usually

17D 99. Unless spoken to first, I do not speak to a supervisor.

A.Rarely B.Sometimes C.Usually

11D 100. I avoid saying things which hurt the feelings of others.

A.Rarely B.Sometimes C.Usually

27A 101. I enjoy games or puzzles in which the solution is deduced from information contained in the rules.

A.Rarely B.Sometimes C.Usually

22A 102. I make my own political choices.

A.Rarely B.Sometimes C.Usually

5D 103. I can identify musical notes well enough to recognize a "tune" the next time I hear it.

A.Rarely B.Sometimes C.Usually

1F 104. After I write a letter, I ask someone to read it to me so that I know that it sounds right.

A.Rarely B.Sometimes C.Usually

19F 105. Peers involve me in resolving problems.

A.Rarely B.Sometimes C.Usually

15F 106. When I shake hands with someone, the handshake tells me something about them.

A.Rarely B.Sometimes C.Usually

23E 107. I "play the devil's advocate" with people to force them to look at other points of view.

A.Rarely B.Sometimes C.Usually

22B 108. Religion is a purely personal thing.

A.Rarely B.Sometimes C.Usually

5E 109. I am able to tell which groups of instruments are playing at various times during a concert.

A.Rarely B.Sometimes C.Usually

4H 110. If I were buying a car, I would ask the salesman to write out the engine specifications.

A.Rarely B.Sometimes C.Usually

19G 111. At parties, I am able to verbally stop arguements involving others before they go too far.

A.Rarely B.Sometimes C.Usually

14D 112. I am able to "play a role" if I agree to.

A.Rarely B.Sometimes C.Usually

23F 113. Holidays are different from other days of the year.

A.Rarely B.Sometimes C.Usually

22C 114. I would rather do things my way even if they don't conform to the expectations of my family or friends.

A.Rarely B.Sometimes C.Usually

5F 115. I can tell the difference between two closely related sounds.

A.Rarely B.Sometimes C.Usually

4G 116. When I go shopping, I read the prices of my purchases and add them in my head.

A.Rarely B.Sometimes C.Usually

19C 117. I am able to presuade people in disagreement to strive for agreement.

A.Rarely B.Sometimes C.Usually

14E 118. I can act "cultured" when the situation demands such formalized behavior.

A.Rarely B.Sometimes C.Usually

23G 119. I choose music to fit my mood.

A.Rarely B.Sometimes C.Usually

20C 120. When shopping for clothes, I like to have a friend along to help me make choices.

A.Rarely B.Sometimes C.Usually

5H 121. I tune the radio by sound not by looking at the dial.

A.Rarely B.Sometimes C.Usually

2H 122. If I were buying a car, I would discuss the engine specifications with the salesman.

A.Rarely B.Sometimes C.Usually

19D 123. I can convince others to do the things that I would like them to do.

A.Rarely B.Sometimes C.Usually

15A 124. I blush.

A.Rarely B.Sometimes C.Usually

10C 125. When I type, I keep my eyes on the copy.

A.Rarely B.Sometimes C.Usually

23H 126. Characteristics for successful people are not the same as those for unsuccessful people.

A.Rarely B.Sometimes C.Usually

21A 127. Before voting in an election, I review choices with my family.

A.Rarely B.Sometimes C.Usually

6A 128. I can tell "what's for dinner" by the smell.

A.Rarely B.Sometimes C.Usually

1D 129. I prefer to communicate with friends and colleagues by telephone rather than writing notes to them.

A.Rarely B.Sometimes C.Usually

19E 130. I am able to put people at ease in tense situations.

A.Rarely B.Sometimes C.Usually

15B 131. I use facial expressions in showing emotion.

A.Rarely B.Sometimes C.Usually

24A 132. I often have to make a decision before I know enough about the situation.

A.Rarely B.Sometimes C.Usually

20D 133. I like to share ideas with friends and associates.

A.Rarely B.Sometimes C.Usually

6B 134. I can distinguish fresh bread from stale bread by the smell.

A.Rarely B.Sometimes C.Usually

1A 135. I can make more sense out of what a person means when they speak to me rather than when they write to me.

A.Rarely B.Sometimes C.Usually

18A 136. I can predict my prospects for success in most situations.

A.Rarely B.Sometimes C.Usually

15D 137. I "talk with my hands."

A.Rarely B.Sometimes C.Usually

24H 138. There are as many facets to a problem as there are on a well cut diamond.

A.Rarely B.Sometimes C.Usually

21C 139. I enjoy outdoor activities more if my family is with me.

A.Rarely B.Sometimes C.Usually

6C 140. I can distinguish between several varieties of flowers by smelling them.

A.Rarely B.Sometimes C.Usually

1B 141. I do better on a test if it is about information I heard in a lecture.

A.Rarely B.Sometimes C.Usually

18C 141. I set goals consistent with my needs and abilities.

A.Rarely B.Sometimes C.Usually

13F 142. I believe that a promise should be kept.

A.Rarely B.Sometimes C.Usually

24D 143. Information should be analyzed in a number of ways before a conclusion is reached.

A.Rarely B.Sometimes C.Usually

21D 144. I talk with my family before doing anything that might effect them.

A.Rarely B.Sometimes C.Usually

6D 145. The aromas in a room determine for me whether it is pleasant or unpleasant.

A.Rarely B.Sometimes C.Usually

3A 146. After I dictate a letter, I have to read it to be certain it is correct.

A.Rarely B.Sometimes C.Usually

18D 147. I can tell if I will be able to get my work done.

A.Rarely B.Sometimes C.Usually

13G 148. The quality of one's work does not vary when the supervisor is away.

A.Rarely B.Sometimes C.Usually

20A 149. I learn a subject better when I can discuss it with other students.

A.Rarely B.Sometimes C.Usually

7F 150. In selecting a beverage, my choice is based on taste appeal.

A.Rarely B.Sometimes C.Usually

3D 151. I score high on achievement tests which emphasize reading comprehension.

A.Rarely B.Sometimes C.Usually

18B 152. I can anticipate accurately how well I will do in a new situation.

A.Rarely B.Sometimes C.Usually

12F 153. I enjoy the beauty of the stars.

A.Rarely B.Sometimes C.Usually

24F 154. A person can never know enough about life.

A.Rarely B.Sometimes C.Usually

20B 155. I enjoy activity more when my friends participate in it with me.

A.Rarely B.Sometimes C.Usually

7G 156. I enjoy trying new foods in order to find new tastes that are pleasing to me.

A.Rarely B.Sometimes C.Usually

4E 157. I use a written budget in order to manage money for which I am responsible.

A.Rarely B.Sometimes C.Usually

18G 158. I can program myself to handle boring tasks.

A.Rarely B.Sometimes C.Usually

13B 159. I live according to moral values.

A.Rarely B.Sometimes C.Usually

24G 160. The more I know about a problem, the more I want to know about it.

A.Rarely B.Sometimes C.Usually

22H 161. When given a job to do, I prefer to work on it myself.

A.Rarely B.Sometimes C.Usually

8C 162. I use my fingers to determine the quality of the finish on wood.

A.Rarely B.Sometimes C.Usually

1G 163. People say I speak better than I write.

A.Rarely B.Sometimes C.Usually

16G 164. I enjoy acquiring good motor skills so that I can compete successfully in sports.

A.Rarely B.Sometimes C.Usually

12A 165. I enjoy the beauty of people dancing.

A.Rarely B.Sometimes C.Usually

23D 166. In evaluating the performances of others, I find it helpful to determine how this performance differed from another performance.

A.Rarely B.Sometimes C.Usually

8E 167. I Pick up and feel vegetables and fruits in the store before buying them.

A.Rarely B.Sometimes C.Usually

4C 168. I keep good written records in my check book.

A.Rarely B.Sometimes C.Usually

16D 169. I enjoy practicing dance steps until I can do them perfectly.

A.Rarely B.Sometimes C.Usually

12G 170. Poetry is beautiful because of its concepts as well as its words and structure.

A.Rarely B.Sometimes C.Usually

26G 171. There's always a reason for a person's behavior.

A.Rarely B.Sometimes C.Usually

8F 172. I decids that my hair needs washing by the way it feels.

A.Rarely B.Sometimes C.Usually

4D 173. When I am in a group of people trying to solve a written problem involving numbers, I am among the first to reach the solution.

A.Rarely B.Sometimes C.Usually

17A 174. I would wait to be introduced to a "big name" rather than introduce myself.

A.Rarely B.Sometimes C.Usually

12H 175. Utility and efficiency are important, but they should not be emphasized to the exclusion of beauty.

A.Rarely B.Sometimes C.Usually

26H 176. Problem-sloving involves related variables.

A.Rarely B.Sometimes C.Usually

26B 177. I like to figure out how parts of a whole fit together.

A.Rarely B.Sometimes C.Usually

12E 178. I would go out of my way to see beautiful scenery.

A.Rarely B.Sometimes C.Usually

4B 179. I score high on written mathematics tests.

A.Rarely B.Sometimes C.Usually

8H 180. I prefer to write with a pen that "feels" good to my fingers.

A.Rarely B.Sometimes C.Usually

25E 181. In play as well as work and life in general, I find it essential to "play by the rules."

A.Rarely B.Sometimes C.Usually

12D 182. I enjoy listening to good music for quality of its sound.

A.Rarely B.Sometimes C.Usually

12D 182. I enjoy listening to good music for quality of its sound.

A.Rarely B.Sometimes C.Usually

4F 183. I find it necessary to write down a telephone number as soon as I hear it or I cannot remember it.

A.Rarely B.Sometimes C.Usually

8G 184. I can distinguish a nickel from a dime in my pocket without looking at it.

A.Rarely B.Sometimes C.Usually

3G 185. I prefer to read directions rather than have someone read them to me.

A.Rarely B.Sometimes C.Usually

12B 186. I require beauty in my surroundings.

A.Rarely B.Sometimes C.Usually

23B 187. I use jokes or humorous remarks to change the focus in different situations.

A.Rarely B.Sometimes C.Usually

3H 188. I understand more easily by reading than by hearing.

A.Rarely B.Sometimes C.Usually

10E 189. When I drive a car, I look ahead and in other directions outside of the car.

A.Rarely B.Sometimes C.Usually

11C 190. I understand how a person feels when being punished.

A.Rarely B.Sometimes C.Usually

12C 191. I enjoy concerts.

A.Rarely B.Sometimes C.Usually

26A 192. I would find it interesting to discover how people behave by evaluating things which make people tick (e.g. physiological, sociological, and psychological).

A.Rarely B.Sometimes C.Usually

6H 193. When there are gas fumes in the car or the house, I notice them.

A.Rarely B.Sometimes C.Usually

3E 194. I have no difficulty in following a map. (I prefer maps to verbal directions.)

A.Rarely B.Sometimes C.Usually

14G 195. I shout and act tough in order to frighten others when I am frightened myself.

A.Rarely B.Sometimes C.Usually

5C 196. I can recognize who is on the phone just by listening for a few moments.

A.Rarely B.Sometimes C.Usually

27D 197. I find the type of reasoning demanded by the rules of mathematics suits my style of thinking.

A.Rarely B.Sometimes C.Usually

7A 198. I can tell whether milk is sour by tasting it.

A.Rarely B.Sometimes C.Usually

27B 199. I find reasoning like this statement helps me to clarify my thoughts: "All men are mortal; Socrates is a man; Socrates is mortal."

A.Rarely B.Sometimes C.Usually

10F 200. When I tune a musical instrument, I use the piano or another instrument for the correct pitch.

A.Rarely B.Sometimes C.Usually

7B 201. When cooking, I use various spices until the dish tastes "right."

A.Rarely B.Sometimes C.Usually

14H 202. I can act attentive and interested even though bored when listening to a teacher or supervisor.

A.Rarely B.Sometimes C.Usually

6F 203. The "smell" is an important part of the pleasure connected with a new car.

A.Rarely B.Sometimes C.Usually

4A 204. I solve written mathematical problems rapidly.

A.Rarely B.Sometimes C.Usually

25F 205. When shopping for clothes, if I find the article I had in mind, I buy it without further comparison.

A.Rarely B.Sometimes C.Usually

25A 206. I work best in a structured situation.

A.Rarely B.Sometimes C.Usually

26E 207. I have no difficulty in understanding how to put puzzles together.

A.Rarely B.Sometimes C.Usually

3C 208. I prefer classes which rely heavily on testbooks.

A.Rarely B.Sometimes C.Usually

7H 209. My "suffering" in the dentist's chair is alleviated if he does not use unpleasant tasting materials in my mouth.

A.Rarely B.Sometimes C.Usually

24B 210. When I attack a problem, I approach it from as many angles as possible.

A.Rarely B.Sometimes C.Usually

13D 211. I would give up an immediate goal rather than sacrifice a principle.

A.Rarely B.Sometimes C.Usually

7C 212. The taste of food is more important than its appearance.

A.Rarely B.Sometimes C.Usually

3F 213. I prefer to read a paper myself rather than have someone read it aloud to me.

A.Rarely B.Sometimes C.Usually

27F 214. Knowledge flows logically form given premises.

A.Rarely B.Sometimes C.Usually

24E 215. I take longer than others in coming to a conclusion because I want to know more about an issue than others do.

A.Rarely B.Sometimes C.Usually

Age: _____

Sex: M _____ F _____

Type of Drug Use:
Grass _____
LSD _____
Speed _____
Barbs _____
Heroin _____
Other _____

Length of Time used:
(check one)
1-3 months ____
3-6 months ____
6 mo.--1 year ____
1 year to 2 years ___
2 years to 3 years ____
More _____

Amount:
0-$25 per day _____
$25-$50 per day _____
More _____

1 to 3 joints per week _____
4 to 6 joints per week _____
7 to 10 joints per week _____
10 to 20 joints per week _____
More _____

APPENDIX C

Cognitive Style Mapping

Tally Sheet

COGNITIVE STYLE MAPPING

TALLY SHEET

NAME _____ DATE _____

PLACE _____

NOS	ITEMS	RARELY	SOMETIMES	USUALLY
1	T(AL)			
2	T(AQ)			
3	T(VL)			
4	T(VQ)			
5	Q(A)			
6	Q(O)			
7	Q(S)			
8	Q(T)			
9	Q(V)			
10	Q(P)			
11	Q(CEM)			
12	Q(CES)			
13	Q(CET)			
14	Q(CH)			
15	Q(CK)			
16	Q(CKH)			
17	Q(CP)			
18	Q(CS)			
19	Q(CT)			
20	A			
21	F			
22	I			
23	D			
24	L			
25	M			
26	R			
27	(K)			

OAKLAND COMMUNITY COLLEGE, Diagnostic Center, Sept., 1971

APPENDIX D

Cognitive Style Score Sheet

NAME _____ DATE _____

SOC. SEC. NO. _____ LOCATION _____

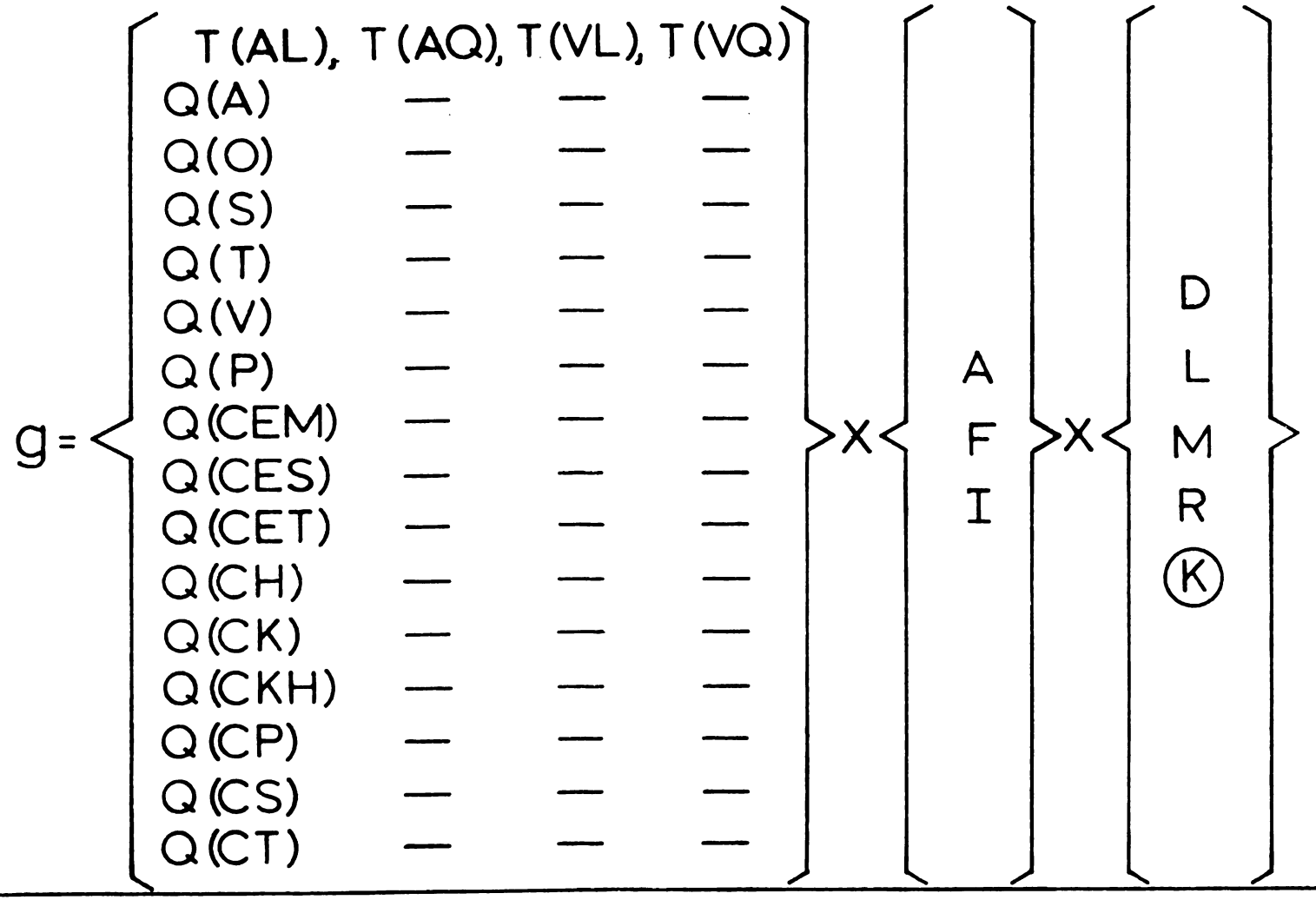
	NOS.	RARELY	SOMETIMES	USUALLY	SCORES				ITEMS
		__X 1 = __	__ X 3 = __	__ X 5 = __	TOTAL	MAJOR	MINOR	NEG.	
BLUE	1								T(AL)
	2								T(AQ)
	3								T(VL)
	4								T(VQ)
YELLOW	5								Q(A)
	6								Q(O)
	7								Q(S)
	8								Q(T)
	9								Q(V)
	10								Q(P)
ORANGE	11								Q(CEM)
	12								Q(CES)
	13								Q(CET)
	14								Q(CE)
	15								Q(CF)
[illegible]	[illegible]								Q(CPM)
	17								Q(CP)
[illegible]	18								Q(CS)
	19								Q(CT)
GREY	20								A
	21								F
	22								I
PINK	23								D
	24								L
	25								M
	26								R
	27								K

APPENDIX E

Cognitive Style Map

NAME _____ DATE _____

SOC. SEC. NO. _____ LOCATION _____



comments:

APPENDIX F

Fiedler's 75 Item Relationship Instrument

1-41. The therapist's comments are always right in line with what I am trying to convey (get across).

2-73. The therapist maintains a friendly, neutral attitude throughout.

3-142. The therapist acts in a very superior manner toward me.

4-111. The therapist seems hesitant about asking questions.

5-144. The therapist tries to put me in "my place."

6-123. The therapist treats me as an equal.

7-83. The therapist is pleased with me.

8-43. The therapist is never in any doubt about what I mean.

9-32. The therapist is well able to understand my feelings.

10-14. The therapist finds it difficult to think along my lines.

11-71. The therapist is interested but emotionally uninvolved.

12-145. The therapist gives the impression of feeling very much above me in society and intellectual status.

13-45. The therapist's tone of voice conveys the complete ability to share my feelings.

14-4. The therapist's own needs (hang-ups) completely interfere (get in the way) with his understanding of me.

15-91. The therapist tends to be too close, is sticky.

16-125. The therapist treats me like a friend.

17-105. The therapist always apologizes when making a remark.

18-3. The therapist somehow seems to miss what I mean time and again.

19-33. The therapist really tries to understand my feelings.

20-75. The therapist shows little positive or negative emotion in his reactions toward me.

21-103. The therapist treats me with much deference (regard for my wishes).

22-85. The therapist is sympathetic with me.

23-64. The therapist acts like he feels somewhat tense and on edge.

24-121. The therapist sees me as a co-worker on a common problem.

25-42. The therapist is able to participate (get involved) completely in my communication (rap).

26-104. The therapist curries (tries to gain) favor with me.

27-13. The therapist is unable to understand me on any level but purely intellectual.

28-132. The therapist tends to look down on me.

29-74. The therapist accepts all of my statements in a noncommittal manner.

30-21. The therapist reacts with some understanding of my feelings.

31-81. The therapist seems to like me.

32-141. The therapist talks down to me as if I were a child.

33-131. The therapist acts toward me in a somewhat protective manner.

34-54. The therapist is punitive.

35-93. The therapist greatly encourages and reassures me.

36-24. The therapist's own reactions are neither particularly favorable or unfavorable in allowing me to communicate (rap) freely.

37-23. The therapist's own ability to understand my feelings is neither particularly good or bad.

38-92. The therapist showers me with affection and sympathy.

39-12. The therapist often misses the point I am trying to get across.

40-35. The therapist usually catches my feelings.

41-1. The therapist shows no comprehension (understanding) of the feelings I am trying to communicate (rap about).

42-63. The therapist occasionally makes me angry.

43-134. The therapist treats me like his pupil.

44-143. The therapist acts very condescending (gives in-lowers himself) to me.

45-124. The therapist acts neither superior nor submissive towards me.

46-68. The therapist tends to make me feel small.

47-25. The therapist usually maintains rapport (harmony) with me.

48-44. The therapist's remarks fit in just right with my mood and content.

49-55. The therapist is very unpleasant to me.

50-61. The therapist is somewhat cool toward me.

51-112. The therapist readily accedes (agrees) to my wishes.

52-84. The therapist is trying to establish an emotionally close relationship with me.

53-5. The therapist reacts in terms of his own problems.

54-95. The therapist is deeply moved by me.

55-65. The therapist seems to be a little afraid of me.

56-122. The therapist gives and takes in most situations.

57-51. The therapist acts like he feels disgusted because of me.

58-11. The therapist often flounders around before getting what I mean.

59-102. The therapist tries to sell himself.

60-115. The therapist tries to please me.

61-94. The therapist expresses great liking for me.

62-52. The therapist is hostile toward me.

63-31. The therapist is usually able to get what I am trying to communicate (rap about).

64-72. The therapist's feelings do not seem to be swayed by my remarks.

65-82. The therapist is pleasant to me.

66-135. The therapist directs and guides me.

67-1. The therapist cannot maintain rapport (harmony) with me.

68-53. The therapist is rejecting toward me.

69-101. The therapist treats me like an honored guest.

70-22. The therapist is able to keep up with my communication (rap) much of the time.

71-62. The therapist at times draws emotionally away from me.

72-34. The therapist always follows my line of thought.

73-15. The therapist's comments tend to direct my trend of thought.

74-114. The therapist assumes an apologetic tone of voice when commenting.

75-113. The therapist lets me determine the course (what we will rap about) of the session.

APPENDIX G

Behavioral Rating Form Turnkey

BEHAVIORAL RATING FORM TURNKEY

Please answer the following questions as honestly as possible regarding _____ behavior. (Circle the appropriate response:)

	1 Never	2 Seldom	3 Some-times	4 Usually	5 Always	6 Doesn't
1. He is neat in appearance (clean clothes, grooming).	1	2	3	4	5	6
2. He is late coming out of his cell for class.	1	2	3	4	5	6
3. He seems interested in the Rehab. program.	1	2	3	4	5	6
4. He causes problems in the classroom/dorm.	1	2	3	4	5	6
5. He gets along well with the other inmates.	1	2	3	4	5	6
6. He gets into fights.	1	2	3	4	5	6
7. He is clean shaven.	1	2	3	4	5	6
8. He complains about the jail.	1	2	3	4	5	6
9. He blames everyone else.	1	2	3	4	5	6
10. He asks to be put on the sick call list.	1	2	3	4	5	6
11. He has trouble making up his mind.	1	2	3	4	5	6

APPENDIX H

Behavior Rating Form--Teachers

BEHAVIOR RATING FORM TEACHERS

Please answer the following questions as honestly as possible regarding _____ behavior. (Circle the appropriate response:)

	1 Never	2 Seldom	3 Some-times	4 Usually	5 Always	6 Doesn't Apply
1. [illegible] in appearance i.e. clean clothes, grooming.	1	2	3	4	5	6
2. He is late coming out of his cell for classes.	1	2	3	4	5	6
3. He seems interested in the Jail.	1	2	3	4	5	6
4. He causes problems (i.e. mis-behaves, disrupts activities) in the class room or dorm.	1	2	3	4	5	6
5. He gets along will with other inmates.	1	2	3	4	5	6
6. He gets into fights.	1	2	3	4	5	6
7. He seeks help in class without being pushed to do so.	1	2	3	4	5	6
8. He attends classes regularly.	1	2	3	4	5	6
9. [illegible]	1	2	3	4	5	6
10. He does his homework.	1	2	3	4	5	6
11. He participates in class [illegible] activities.	1	2	3	4	5	6
12. When given a task to do, he completes it.	1	2	3	4	5	6
13. He sets goals for himself.	1	2	3	4	5	6
14. He brings his books to class.	1	2	3	4	5	6
15. He has confidence to try new things (i.e. reading, writing).	1	2	3	4	5	6

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