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PERCEPTUAL DIFFERENTIATION AND ITS CORRELATES AMONG DRUG ADDICTS

The Ohio State University

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300 N. Zeeb Road, Ann Arbor, MI 48106
PERCEPTUAL DIFFERENTIATION AND ITS
CORRELATES AMONG DRUG ADDICTS

DISSertation

Presented in Partial Fulfillment of
the Requirements for the Degree Doctor
of Philosophy in the Graduate School of
The Ohio State University

By

Alan Dale Gilbertson, B.A., M.A.

************

The Ohio State University

1981

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This dissertation is dedicated to my parents, without whose love, support, and values I could never have achieved this goal.
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Chapter One

Introduction

A 1975 white paper report to The President of the United States identified drug abuse as:

... one of the most serious and most tragic problems this country faces. Its cost to the nation is staggering; counting narcotics-related crime, health care, drug program costs and addict's lost productivity, estimates range upwards of $17 billion a year. In addition to these measurable costs, the nation bears an incalculable burden in terms of ruined lives, broken homes and divided communities.


The report goes on to state that high priority areas for research on substance abuse should include the exploration of individual differences which may cause a person to turn to drugs or lead certain individuals into serious drug abuse problems while others avoid them.

Marvin Snyder, the former Director of the Division of Research, National Institute on Drug Abuse (NIDA, 1980, p. XI) has stated that one of the most striking aspects of drug research over the last few years is the relative upsurge of various models and theories explaining, wholly or in part, the problems of drug abuse. In a recent review of these contemporary perspectives by NIDA (U.S. Dept. H.H.S., 1980) some 43 separate and representative models are outlined. Integrally related to most of these theories, whether implied or stated, is the importance of the individual and his perception of both
himself and his environment. The examination of such personality characteristics as level of perceptual differentiation, self-concept, interpersonal relations orientation, intelligence level and psychological defenses/pathology has much to offer to the treatment of drug abuse.

Throughout the history of psychology, considerable attention has been devoted to the study of individual differences in patterns of adaption as a function of perceptual-cognitive style. H. A. Witkin and his associates (1950) identified the concept of differentiation some three decades ago. Referring initially to the less generalized dimension, which he labeled field dependence/independence, Witkin hypothesized that these stylistic tendencies would not be limited to an individual's perception of an immediately present stimulus configuration, but rather show themselves in congruent form in his behavioral-intellectual activities as well.

Witkin's theory and the subsequent measures he developed to assist in operationalizing the constructs have proven most heuristic. The research is clear in pointing out significant trends relating deficits in perceptual differentiation to conditions commonly regarded as rooted in severe dependency problems (Goldon, 1972).

The major purpose of this study was the further exploration of perceptual differentiation among a drug addicted population. For the purpose of this report, the terms "drug" and "drug dependency" shall not be considered inclusive of alcohol and alcoholism respectively.

The National Institute on Drug Abuse's Research Review (U.S. Dept. H.E.W., 1976) reveals that the self-concept of drug users has recently provided the focus for much research. One of the primary
characteristics which Witkin (1971) hypothesized as attributable to persons with more articulated modes of cognitive functioning was a more differentiated sense of self-identity. He states that:

They have an awareness of needs, feelings and attributes which they recognize as their own and distinct from others. Their sense of separated identity implies experience of the self as segregated from nonself: it also implies experience of the self as structured. (p. 8)

The relationship between perceptual differentiation and the self-concept among drug abusers constituted another area of exploration in this study. The Tennessee Self-Concept Scale (TSCS) (Fitts, 1964) was utilized because its subscales not only provide for the exploration of the degree of differentiation achieved in defining separate components of the self-concept, but also because of the insight the subscales provide into the subject's manner of approach to the task of self-definition. It is hoped that a better understanding of the nature of the relationship between perceptual differentiation and the self-concept will point towards more effective treatments, aiming to intervene at this crucial point of the personality.

The theory of differentiation would imply that an individual's level of articulation in cognitive style would manifest itself in differences within the realm of their interpersonal behavior and orientation. While many theories suggest interpersonal difficulties are a major component of the substance abuse syndrome, the exact nature and basis of these problems is difficult to pinpoint. The inclusion of Schutz's (1967) Fundamental Interpersonal Relations Orientation-Behavior instrument (FIRO-B) in the battery of tests administered for the purpose of this study, was for the aim of further
exploring these variables. Saxon et al. (1978) have stated that the FIRO-B is a most useful instrument which has only been minimally explored, and possesses sufficient potential to warrant investigation of its use in research and treatment of drug abuse. Thus, the investigation of the interpersonal orientation and manner of interpersonal need fulfillment of drug addicts, constituted another focus of this work, particularly as these variables related to perceptual differentiation and cognitive style.

Golden's extensive review of the literature on field dependency concluded that organic brain damage results in decreased differentiation ability. While the evidence was not sufficient to suggest that this accounts entirely for relative deficits observed on this construct among specific populations, most notably alcoholics, there is little question that it is likely a component of the relationship. To assist in accounting for any variance which may be related to impairment, as well as intelligence, among the population under study in the present work, the scales of the Shipley Institute of Living Scale (Institute of Living, 1940) were included in the data collected.

Blaine and Julius (1972) have noted, that while homogeneity may be observed amongst some behavioral features in a drug dependent population, considerable heterogeneity characterizes the symptoms of psychopathology which may be found. The Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway and McKinly, 1948) has been the most widely utilized psychometric instrument in investigating the psychopathology accompanying drug abuse. This research is supportive of Blaine and Julius' observations (U.S. Dept. of H.E.W., 1977).

Witkin (1971) has hypothesized that different forms of pathology, as
manifest in defenses utilized, can be predicted on the basis of an individual's level of perceptual differentiation. While the research has generally supported this notion (Golden, 1972), there have been no published account of research into the relationship between level of differentiation and each of the standard 13 scales of the MMPI. The exploration of this relationship constituted the final area of investigation in this work.

While the research evidence has become increasingly clear in pointing out that a strong relationship exists between relative deficits in perceptual differentiation and physical-psycho-social difficulties rooted in severe dependency problems, the relationship between differentiation and drug dependency has been left largely unexplored.

Statement of the Problem

The major purpose of this study was to examine the nature of cognitive-perceptual style, specifically level of differentiation, and its behavioral and personality correlates among a drug dependent population. A secondary purpose focused on the self-concept, interpersonal orientation, level of intelligence and psychopathology of addicted persons, and the relationship between these variables and level of perceptual differentiation.

Research Questions

The primary research questions addressed by this study included the following:
1) To what extent does the mean level of perceptual differentiation, as measured by the Embedded Figures Test (EFT), differ between male and female drug addicts, college students, and young male alcoholics?

2) To what extent does the mean level of perceptual differentiation as measured by the EFT, differ among addicts categorized by primary drug of abuse type?

3) To what extent is the level of perceptual differentiation, among addicts as measured by the EFT, related to their level of self-esteem, as measured by the TSCS?

4) To what extent is the level of perceptual differentiation among addicts, as measured by the EFT, related to their interpersonal relations orientation, as measured by the FIRO-B?

5) To what extent is the level of perceptual differentiation among addicts, as measured by the EFT, related to their level of intelligence and the probability of their experiencing any cognitive impairment, as measured by the Shipley Institute of Living Scale (Shipley)?

6) To what extent does the level of perceptual differentiation among addicts, as measured by the EFT, relate to other personality characteristics, as measured by the MMPI?

7) To what extent does the level of self-esteem, as measured by the TSCS, intelligence and probability of cognitive impairment, as measured by the Shipley, interpersonal relations orientation, as measured by the FIRO-B, and other personality characteristics, as measured by the MMPI, differ between addicts categorized as higher
and lower in level of perceptual differentiation, based on their EFT score?

Secondary research questions addressed by this study are as follows:

1) What is the level of self-esteem, as measured by the TSCS, of the addict sample under study?

2) How does this addict sample, as a group, approach the task of self-definition and what level and types of psychopathology exist among them, as measured by the TSCS?

3) What type of orientation towards interpersonal relations, as measured by the FIRO-B, does this addict sample display?

4) What is the level and distribution of intelligence and probability of cognitive impairment, as measured by the Shipley Institute of Living Scale, among the addict sample?

**Significance of the Study**

The concept of experiencing is basic to all areas studied within the fields of education and psychology. An understanding regarding the mode of experiencing utilized by individuals and groups of individuals is central to virtually all theories of human behavior. Constructs describing perceptual/cognitive styles provide some insight into the way in which people experience and interact with their environment. The construct of perceptual differentiation, global vs. articulated style, or field dependence/independence provides one such reference point in understanding individuals' modes of experiencing.

In the quest to develop some understanding of the relationship which exists between perceptual-cognitive styles and various forms of
pathology, the concept of differentiation has shown promise in relating a particular and quantifiable aspect of experiencing both oneself and one's environment to problems rooted in dependency. A better understanding of the relationship between differentiation and drug dependency will help to clarify the boundary of influence perceptual-cognitive style may have on human behavior, as well as providing insight into the causes of drug dependency. Because differentiation appears to represent a most stable attribute in individuals, clarifying the nature of its relationship with psychosocial-behavioral variables may have predictive utility.

Counselors spend considerable time attempting to reach a better understanding of clients' manner of experiencing themselves and their surroundings. It is through such understanding that they hope to facilitate positive changes in perceptions and ultimately behaviors relative to the clients' selves and their worlds. It was intended that this study assist in shedding light on the relationship generally recognized as existing between drug dependence and a poor self-concept. Specifically of interest, because of potential implications for counseling drug dependent individuals, was the relationship between perceptual differentiation and the manner of approach to self-definition.

There is little question that disturbed interpersonal relations characterize drug dependency. It is not known to what extent this is a reflection of the individual's orientation towards relations with others, and how it is related to the manner in which individuals seek to fulfill their interpersonal need related to their perceptual-cognitive style. These are important questions to which those involved
in the personal and social rehabilitation of drug dependent individuals often seek answers. Additional information concerning these questions was obtained in the course of this work. Toward this end this study also examined the utility of a promising and relatively new instrument for research on substance abuse, the FIRO-B.

Since the use of the MMPI is so widespread in the field of drug dependency treatment, it was considered helpful to know what, if any, relationships exist between perceptual differentiation and the standard scales scored on this device. Witkin's (1971) hypothesis regarding the relationship between differentiation and psychological defense mechanism, to which the MMPI may be sensitive, would point to some relations. This study gathered empirical data with which this question could be further addressed.

The relationship between level of perceptual differentiation, intelligence, and cognitive impairment is important to understand in order to determine to what extent this attribute reflects an ability as opposed to a more pure personality variable. The inclusion of the Shipley in the data collected and analyzed assisted in clarifying the nature of the relationships between these variables.

Finally, multivariate analysis provided a useful tool in exploring the differences between more highly differentiated addicts and their lower level differentiating counterparts across the entire range of variables under consideration in this study. It was intended that the consideration of all these variables simultaneously as they relate to the level of perceptual differentiation observed among the addicts would serve to clarify the meaning and utility of the differentiation construct as it relates to both theory and clinical practice.
Definition of Terms

The purpose of this section is to provide the reader with a brief theoretical and operational definition of selected terms as they were utilized in this report.

Differentiation: A term designated by Witkin et al. (1971) to refer to a psychological dimension encompassing the narrower concepts of field dependence/independence and global vs. articulated style. It refers to an individual's ability in distinguishing separate elements or features within the realm of their experience. For the purpose of this study, level of differentiation or perceptual differentiation was operationally defined as the EFT score.

Self-Concept: The feelings one holds with regard to him/herself, generally of a relatively positive or negative nature. The individual's evaluation of him/herself. For the purpose of this report, the self-concept was operationally defined by the TSCS score(s).

Interpersonal Relations Orientation: The system of beliefs, feelings, values, attitudes and behaviors one holds/exhibits towards others. For the purpose of this report, interpersonal relations orientation was operationally defined by the FIRO-B scale score(s).

Cognitive Impairment: Interference with the higher cortical thought processes, whether organic or psychological in origin. For the purpose of this report cognitive
Intelligence: A complex concept referring to one's intellectual ability. For the purpose of this study, it was operationally defined as the verbal and abstract reasoning abilities reflected by the scores on the Shipley.

Personality Characteristics: The system of beliefs, feelings, values, attitudes, and behaviors which determine the way in which an individual interacts within his environment. For the purpose of this study such characteristics were operationally defined by the scales of the MMPI.

Drug Dependence: Used synonymously with the term addicted, to refer to the state of an individual meeting all of the criteria set forth in the DSM III for the diagnosis of a substance Use Disorder. For the purpose of this study, dependence upon alcohol alone was not included under this designation.

Limitations of the Study

The major limitation of this study was the size of the sample available for data collection and the limited generalizability of findings due to the specificity of the population under study. While the validity of the data and findings were not affected by the sample size, limitations on the types of analysis procedures which could appropriately be employed were imposed. This sample, however, represents all subjects which were available for study during the three
month period established for data collection and is representative of the population treated in this and similar facilities.

The specificity of the population presented a difficulty in that it afforded a limited range of scores on the variables under consideration. In considering any findings related to psychometric variables, it must be kept in mind that the major defining characteristics of the population includes both drug dependence and criminal behavior. Because of these considerations, this study should be considered descriptive with regard only to this specific population, and only of an exploratory/pilot nature as it addresses the interrelationships of the variables under study in a more general sense. The generalization of the findings of this study should be directed only towards similar populations/samples and only with extreme caution.

Finally, constructs discussed herein were limited to their operational definitions based on the instruments utilized.

Organizational of the Remainder of the Study

Chapter two reviews the research literature felt to be of direct relevance to the questions under study in this work.

Chapter three sets forth the methodology of this research. Included within this is a description of the setting, sample, design and method of data collection, a description of the instruments used, and explanation of the analysis procedures.

Chapter four presents the empirical findings of the data analysis, and chapter five presents a summary, conclusions based on these findings, and recommendations for further research.
Appendices include sample items from instruments utilized, tables, etc. A complete bibliography of references concludes this study.
Chapter Two
Review of the Research Literature

Introduction

This chapter presents a review of the research literature relevant to the subject of this study. It is organized into two major sections. The first section reviews the literature relating to the relationship between perceptual differentiation and disorders commonly felt to be rooted in dependency problems. The second section reviews the research literature relevant to other personality variables, specifically self-concept, interpersonal orientation, intelligence, and personality characteristics, and their relationship to perceptual differentiation and drug dependency. The chapter concludes with a short summary and statement of conclusions derived from the review.

Perceptual Differentiation and Dependency Disorders

Drug Dependency—In the only published studies to date, which address the issue of differentiation among a drug dependent population, Arnon et al. (1973 and 1974) administered the portable Rod and Frame Test (RFT), a popular differentiation measure, to a group of male and female heroin addicts. All of the addicts were patients in a methadone maintenance clinic in New York. Arnon et al. (1974) reported that comparison of the addicts' scores, with those of a normal population revealed that, as a group, the addicts displayed significantly less
differentiation ability (p < .001). While differences attributable to sex were non-significant among normals, female addicts were much less differentiating than male addicts (p < .001) but both sexes differed significantly from their normal counterparts (p < .01). While the normative sample displayed a unimodal distribution on the differentiation variable, with the majority gravitating towards the pole of greater differentiation, a marked bimodal distribution was noted among the addicts. The male addicts demonstrated greater heterogeneity in level of differentiation than did female addicts, but most importantly, the assumption of homogeneity on this construct among an addicted population was called to question.

In examining the relationship between the level of differentiation exhibited by methadone patients and behavioral indicators of improvement in treatment i.e., employed fulltime, drug free vs. hospitalization required for detox, discharged involuntarily from treatment Arnon et al. (1973) discovered some interesting relationships. Comparison of mean improvement scores, based on these behavioral indices among addicts separated by quartiles on level of perceptual differentiation, revealed that patients in the middle quartiles showed significantly more improvement than those at either extreme. These findings are explained as being consistent with Witkin's (1954) hypothesis that more severe pathology would be associated with extreme scores on measures of differentiation. Research by Sugarman and Cancro (1968), among others, has also served to confirm this hypothesis.

Arnon et al. (1973, 1974) suggest further research on perceptual differentiation among drug addicted populations. Specifically they
suggest research on addicted subjects from other sources such as civil commitments, jails and other treatment programs.

In examining the cognitive functioning and personality functioning among a small group of heavy marijuana users, Weckowicz and Janssen (1973) found no significant differences, on two separate measures of differentiation, between marijuana users' mean differentiation scores and normals. In fact, the marijuana users' mean differentiation scores were higher than those of the normals. The small sample sizes (n = 11) as well as the selection method (paid volunteers) utilized in this study, raise question as to the utility of these findings.

Alcoholism—The relationship between alcohol dependency and differentiation has been extensively researched. Witkin et al. (1959) were the first to demonstrate that alcoholics were more field dependent than non-alcoholics. They also found that alcoholics demonstrated less differentiation than non-alcoholic psychiatric patients, suggesting that psychopathology itself was not sufficient to produce the observed differences between alcoholics and controls. Utilizing a battery of differentiation sensitive tests (Body Adjustment Test (BAT), RFT, and EFT), Witkin was able to identify, with greater than 75 percent accuracy, the alcohol dependent from normal and psychiatric patients.

Subsequent research has supported the existence of a strong relationship between relative deficits in differentiation and alcoholism, at a high level of statistical confidence (Bailey et al., 1969; Chess et al., 1971; Goldstein and Chatlos, 1965; Karp and Konstadt, 1965; Karp et al., 1963; Rhodes and Yoriko, 1968; and Fisk, 1970). In three studies this relationship was not supported (Burdick, 1969; Jacobson, 1968; and Jones, 1972).
In an extensive review of the literature pertaining to alcoholism, differentiation and rehabilitation, Golden (1972) concluded that there is sufficient evidence that significant deficits in differentiation exist in many alcoholics, and that this relationship warrants consideration in developing rehabilitation goals for persons with alcohol problems.

Barnes (1979), in attempting to re-analyze the literature on the alcoholic personality, conducted a "meta-analysis" of studies on alcoholism and differentiation level. By subjecting nine carefully controlled and selected studies to a probability pooling procedure, he concluded at the $p < .00001$ level of significance, that alcoholics are more field dependent than controls.

Because differentiation appears to be a relatively stable characteristic, Witkin (1962) hypothesized deficits to be a predisposing factor in dependency problems such as alcoholism, rather than a consequence. Subsequent research, while far from conclusive, has tended to support this notion. Karp et al. (1965) found that the achievement of sobriety, as indicated by one year of complete abstinence, did not affect differentiation ability on three separate measures. Chess et al. (1971) found abstinence did reduce deficits in differentiation in their sample. Goldstein and Chatlos (1966) found that differentiation was increased in alcoholics following an eight to ten week period of psychiatric treatment. Jacobson et al. (1970) found no change in level of differentiation, as measured on the RFT, following a comparable period of abstinence and in-patient treatment.

Several theories have posited that the observance of deficits in differentiation among alcoholics is due to impairment resulting from
prolonged drinking. Karp and Kondstadt (1965) found no relationship between the length of time alcoholics had been drinking and level of differentiation, as measured by the BAT, RFT, and EFT. Further consideration between impairment (especially of an organic nature) and level of differentiation will be entertained at a later point.

There is evidence accumulating that would indicate that the level of differentiation among alcoholics may be positively related to treatment outcome. Karp et al. (1965) found that members of Alcoholics Anonymous, a voluntary treatment program of proven effectiveness (Polich, in U.S. Dept. H.H.S., 1980), showed higher levels of differentiation than non-members, when controlled for abstinence/non-abstinence (utilizing BAT, RFT, and EFT). While many plausible explanations may be postulated for this finding, research by Kilpatrick et al. (1978) has shown alcoholics labeled "spurious treatment candidates" less differentiating than those judged as motivated for treatment.

A more recent study by Karp et al. (1970) found alcoholics selected, on the basis of an intake interview, for insight-oriented therapy to be less differentiating than those selected for drug therapy. While therapy drop-outs did not differ overall on the basis of level of differentiation, drop-outs from insight-oriented therapy were observed to be less differentiating than remainers. Finally, Rhodes and Yoriaka (1968) found level of differentiation, as measured by the EFT, to be negatively correlated with the length of hospitalization for alcoholic patients.

Obesity—Purportedly, dynamics similar to those involved in alcohol dependence underlie the condition of obesity (Golden, 1972). Like the alcoholic, the person who compulsively eats, does so to
allay anxiety or satisfy some need for dependence in a nonspecific fashion. Karp and Pardes (1965) administered the BAT, RFT, and EFT to obese female volunteers from a nutrition clinic and a group of matched controls. As hypothesized, the obese women demonstrated less differentiation ability. This component of the obese personality was said to reflect severe problems of dependency, inadequacy and a poorly developed sense of separate identity.

Other Emotionally Based Disorders—Evidence is beginning to accumulate that suggests that when personality disturbance occurs among persons who lack differentiation abilities, they are likely to show severe identity problems, little struggle for maintenance of identity, symptoms often considered suggestive of deep seated problems of dependence, inadequately developed controls, resulting in chaotic functioning and passivity and helplessness (Witkin, 1971, p. 10). In addition to substance addicted persons, the following other clinical groups commonly perceived to suffer severe dependency problems have been demonstrated to present marked deficits in differentiation: asthmatic children (Fishbein, 1963), enuretic children (Scallon and Herron, 1969), adolescents suffering from psychosomatic complaints (Ruma, 1967), patients with functional cardiac disorders (Soll, 1963), patients with hysterical character structures (Zuckmann, 1957), catatonics (Janucci, 1964), and character disorders, that is, Generally inadequate personalities unable to manage the ordinary problems of living, patients who somatize their complaints and deny any psychological problems, patients whose primary symptom is affective discharge rather than defensive symptom organization (Karchin, unpublished study in Witkin, 1971, p. 11).
Gordon (1953) reported less differentiation in ulcer patients than controls studied, but Silverstone and Kissin (1968) failed to replicate differences between similar patients and normals, although they did note less differentiation among ulcer patients than among comparable patients presenting essential hypertension.

Levinson (1967) found that longer term institutional dependence among homeless men was reflected in less differentiated perceptual-cognitive styles (as indicated by the EFT). This finding is consistent with that of Karp et al. (1969) who reported that diabetics seeking treatment in clinics were less differentiating than their private treatment counterparts (with controls built in to account for socio-economic status). It was suggested that persons who choose clinic treatment for symptom alleviation may possess greater needs for psychological support.

These latter findings may serve to explain Burdick's (1969) discovery of a relatively high differentiating population of alcoholics. Burdick's population consisted of a small, non-random sample ($N = 21$) of higher income patients from a private alcohol rehabilitation hospital.

**Personality Variables Related to Perceptual Differentiation and Drug Dependency**

**Self-Concept and Differentiation**—In relation to one's body concept, a major component of the self-concept, Witkin (1971, p. 8) has stated that persons who "...show an articulated cognitive style, are also likely to have an articulated body concept, i.e., they experience the body as a whole having definite limits or boundaries, and the parts
within as discrete yet interrelated and jointed into a definite structure." Studies utilizing measures of a scale of articulation of body concept, applied to figure drawing, have repeatedly demonstrated relationships to differentiation levels in the expected direction (Corah, 1965; Karp, Silverman and Winters, 1969; Winestone, 1969; and Witkin et al., 1962).

Witkin (1971) has also stated that persons differ on another aspect of the self, namely sense of separate identity, relative to their level of differentiation. Persons with more differentiating cognitive styles evidence a developed sense of separate identity and awareness of feelings, needs and attributes which they recognize as their own and distinct from others. These qualities are posited to manifest themselves in a greater reliance upon internal, as opposed to external frames of reference, among high differentiators.

Research indicates that less differentiating individuals are more attentive to the faces of persons with whom they come in contact, and remember them better (Crutchfield et al., 1958; Kindstadt and Foreman, 1965; and Messick and Damarin, 1964). This would tend to support the notion that such individuals are more sensitive to others' reactions to them, faces being the major source of cues as to what another is feeling and thinking. Witkin and Goodenough (1977), in their extensive review of the literature on differentiation and interpersonal behavior, concluded that most studies have confirmed that less differentiating individuals are particularly apt to make use of the opinions of others with whom they are involved in group interactions. Scales of acquiescence and conformity were found to bear little relation to level of differentiation, but in-vivo studies demonstrate consistently, that
a relationship exists between use of external referents and level of perceptual differentiation. This relationship appears most strong, in ambiguous situations and settings.

Early research by Bell (1955) and Linton (1955) suggested that perceptually dependent individuals may be especially susceptible to influence by authority figures. In reviewing the contemporary scope of research in this area, Witkin and Goodenough (1977) cited over fifteen studies with findings contrary to this, and concluded that status has little effect on the influence perpetrated on less differentiated subjects.

Witkin et al. (1968) have demonstrated that differentiated therapy patients express more guilt (aroused by specific violations of one's own standards of behavior) than shame anxiety (aroused by perceived violations of someone else's standards of behavior), more outward directed hostility than inward directed anxiety, and less diffuse anxiety, than those labeled field dependent.

All of these factors would seem to relate to the self-concept and manner of self definition/evaluation.

Watkins and Astilla (1979) have suggested that overall, the level of differentiation may not necessarily be related to self-esteem. Their data, obtained from Filipino female adolescents, would support this notion.

**Self-Concept and Drug Abuse**—Numerous authors have emphasized the importance of the self-concept in understanding drug abuse (Kaplan, 1980; Huba, 1980; and Steffenhagen, 1980).

Empirical evidence has confirmed the existence of a relationship between drug abuse and a low self-concept among juvenile prisoners
(Davis and Brehm, 1971), high school students (Norem-Hebeisen, 1975; and Huntwork and Furguson, 1977), college students (Segal et al., 1975; and Schaffer et al., 1976), and addicts in treatment (Robinson, 1973).

In surveying the expressed reasons for drug abuse among adolescents and young adults, Samuels and Samuels (1974) found low self-concept to be one of the most frequently identified factors.

In explaining their findings of generally poor self-images among a drug abusing population, Brehm and Back (1968) theorized that attempts at self-modification through the use of physical agents underlie much substance abuse. They noted a general dissatisfaction with the self as expressed in insecurity and discrepancies between the external, ideal, and hidden selves among their subjects.

Utilizing the TSCS in their research, Segal et al. (1975) obtained a mean profile commonly observed among drug addicted populations, with the Family, Moral-ethical and Physical Subscales lower than the others. Such profiles are often interpreted as reflecting the individual's incorporation of either family or society's view of him/herself as a "bad person," and felt to foster behavior contributing to a self-fulfilling prophecy.

In her work, also utilizing the TSCS, Robinson (1973) found samples of both opiate addicts and non-opiate drug users to score very low in self-esteem. Regardless of the type of drugs used, their scores on all nine measures of self-esteem fell well below the means for normals. She noted a relatively high mean on their Self-Satisfaction Scale relative to those of Behavior and Identity, and interpreted this to be saying, in effect, "I'm a pretty lousy person, and I do bad things, but that's the way I am and it doesn't upset me too much" (Robinson, 1973,
This tendency is particularly marked among the non-opiate drug user group, and is further interpreted as reflective of low motivation for change. In all, Robinson found the opiate addicts to differ significantly from the non-opiate users on 13 different scales, though both groups' approach to the test indicated a great deal of uncertainty and confusion about the self, an unwillingness to reveal themselves to others, passivity or simply immobilization in the face of many approach-avoidance conflicts. Generally the opiate users seemed to be even more devastated in self-concept than the other group, with the empirical scales reflecting a greater degree of pathology.

Korem-Hebiesen (1975) has noted the lack of longitudinal data necessary to empirically verify a cause-and-effect nature of the relationship between a low self-concept and substance abuse.

**Interpersonal Orientation/Behavior and Differentiation**—Since Witkin's (1971) theoretical position proposes that psychological differentiation is a reflection of total personality function, perceptual dependency should logically reflect itself in interpersonal behavior.

Several investigators have researched the hypothesis that less differentiated clients will demonstrate more psycho-social dependency, within the context of therapeutic relationships. Fisk (1970) confirmed a positive relationship between perceptual dependence, as measured by the EFT/ and independent ratings of client dependency within an alcoholic population, at the $p < .0005$ level. Using the RFT with another population, Russakoff et al. (1976) supported this finding by observing that low differentiators relied more heavily upon therapists for structuring the therapeutic interview than their more
highly differentiating counterparts. Witkin et al. (1968) obtained similar results in noting that therapists working with a general out-patient client population, structured their interviews with less differentiated patients more than did those with patients possessing a higher level of differentiation. He supported his observations with evidence from interviews citing fewer words per client response to each question posed by the therapist.

Justice (1970), in exploring the relationship between differentiation level (as measured by the Group Embedded Figures Test-GEFT) and interpersonal distance assumed in stressful situations, found less differentiating individuals assuming a closer stance to the interviewer than higher differentiators. Justice theorized that less differentiated subjects saw the interviewer as responsible for reducing stress whereas the more differentiated ones saw self as a means of doing so.

Duke (1969) found a low, but significant correlation between differentiation and a generally positive view of human nature (i.e., higher levels of trustworthiness, altruism).

Many investigators have attempted to relate differentiation to "pencil and paper" tests of psychological and social dependency. For the most part, such measures have either failed to relate consistently or at all to perceptual differentiation (see review by Golden, 1972).

Marlow (1958) hypothesized that differentiation, as measured by the EFT, would relate positively with the needs for Achievement, Autonomy, Dominance, and Intracception, and negatively with the need for Succorance, as defined by the EPPS. Data from a sizable population of college students confirmed only 2 of these hypotheses: Succorance (−.30) and Intracception (.34).
Gordon et al. (1961) administered the EFT and Personality Research Form (PRF) to 50 male college students. Scoring the PRF for anxiety, Frustration Tolerance, Ambiguity Tolerance, Self-Acceptance, Compulsiveness, Impulsiveness, and Self-Sufficiency, significant correlations were found only between decreased differentiation and non self-acceptance and impulsivity.

Goldstein et al. (1968) administered an extensive battery of psychological tests to a sample of 30 hospitalized male alcoholics who scored in the low differentiation range on the RFT. The battery included the following: the EPPS (for Succorance, Deference, and Autonomy scales), Crowne and Marlowe's Social Desirability Scale, the Guilford-Martin Inventory of Factors (for Ascendance and Masculinity Scales), the MMPI (for Pd and Mf Scales), the Bass Social Acquiescence Scale, Couch and Keniston's Yessay-Naysay Scale, the Leary Interpersonal Test of Personality (for the Dominance and Love dimensions for both Public Image and Self-Concept levels), and a measure of intelligence.

A factor analysis indicated little commonality between RFT scores and personality measures. No single factor among these measures could be defined as dependence.

In their extensive review of the literature on differentiation and interpersonal behavior, Witkin and Goodenough state:

The search for relations between perceptual and interpersonal dependence has been pursued in an enormous number of studies by now. The data from these studies suggest that, beyond information seeking, field dependent people do not show many other kinds of interpersonal dependence that have been considered in the literature.

(Witkin and Goodenough, 1977, p. 667)
Consistent with this conclusion is evidence obtained by numerous researchers which indicates little relation between perceptual dependency and approval seeking behavior, as reflected in the tendency to give socially desirable responses on questionnaires (McCarry et al., 1971; and Thackmorton, 1974).

Numerous studies have concluded that highly differentiating individuals are likely to be rated high on such attributes as autonomy, showing initiative, responsibility, and self-reliance (Biggs et al., 1971; and Char, 1971).

Witkin and Goodenough (1977) have concluded that less differentiated individuals tend to attend selectively to social information obtained from others whereas higher level differentiators tend to be relatively inattentive to such information. The latter are characterized as less interested in people, show physical and psychological distancing from others and favor impersonal situations. Perceptually dependent persons, in contrast, show a strong interest in others, prefer to be physically close, are emotionally open and favor real-life situations that bring them into contact with others. Witkin and Goodenough go on to integrate these observations with other differentiation theory and research by stating that field dependent individuals seek information from others as an aid to structuring situations that are not clearly defined. They state that, the greater the use of external referents by perceptually dependent people makes it reasonable to expect them to engage in behavior that is helpful in making external referents accessible to them when they are needed.

Less differentiating individuals have been demonstrated to rate other persons higher on favorable characteristics than their more
differentiating counterparts (Distefano, 1969; and Marcus, 1970). They have also been observed to smile more in dyadic interaction, although the differences were not statistically significant (Mones, 1974).

Numerous studies have supported the hypothesis that field independent people are more likely to openly express direct hostility towards others whereas perceptually dependent independent individuals avoid such expressions (Bercovici, 1970; and O'Leary, 1972).

Utilizing the Thematic Apperception Test, Goldstone (1974) found less differentiated subjects scored lower on a negative acts rating scale than their more highly differentiating counterparts.

Witkin and Goodenough (1977) have concluded that the results of research conducted into the relationship between differentiation and hostility indicate that, while more highly differentiated individuals are more likely to express aggression against another person than less differentiating persons, the latter are no different in their readiness to experience hostility against others or to give indirect expression to such feelings. An extensive review of the literature leading to this conclusion is provided in this article.

Not surprising in light of the characteristics which have been described, numerous studies have suggested that less differentiated individuals tend to be more popular. This tendency seems particularly pronounced amongst females. Some representative research supporting this notion among adult and adolescent populations includes: Dingman, 1972; Goldstone, 1974; Joshi, 1968; Oltman et al., 1975; Vernon, 1972; and Wang, 1976.
Interpersonal Relations Orientation of Addicts—Many researchers have examined the general orientation from which compulsive drug users tend to view the world and the people around them. Khatzian (1974) and Glover (1932) are only two of the many who have linked drug use to the user's inability to deal with feelings of rage, aggression and sadism. Others have described addicts as passive (Hendin, 1974), narcissistic (Wurmsen, 1974), overactive, incapable of delay of behavior, psychopathic, or less often, inadequate, passive-aggressive, or schizoid personalities (Hill et al., 1960), unable to engage their environment in sustained and constructive ways or to weigh the consequences of destructive or careless behavior (Chein et al., 1964), depressed (Rado, 1957), paranoid thinking (Nyswander, 1959), and as being psychotic or having a conduct disorder (Black, 1975).

Saxon et al. (1978) have suggested that these terms may be viewed less as statement of interpersonal behavior, per se, than as factors reflective of an interpersonal orientation. Using the FIRO-B, Saxon et al. (1978) explored the interpersonal orientation of an accidental sampling of 35 patients in a methadone maintenance program. Their research found the mean interpersonal profile of these patients indicative of a preference for a lifestyle where there is a limited demand for social interaction, where responsibility is a private, independent concern, and where interpersonal relationships are neither encouraged nor highly valued.

Robinson (1973) also utilized the FIRO Scales (B and F) to explore the differences in interpersonal orientation between opiate addicts and users of non-opiate drugs in treatment. Using t-tests, she found these groups to differ on four of the six FIRO-B scales.
Her sample of heroin addicts both sought and expressed fewer inclusion behaviors, expressed more control over others, and expressed less affection towards others than their non-opiate using counterparts. They did not differ on the amount of control or affection they seek from others. Heroin addicts differed significantly from other drug users or only one measure of the FIRO-F: Expressed Inclusion. This was interpreted to mean that they see other people as less important and are less interested in them than the other group of clients. This may account, in some part, for their behavior toward others.

Schoolar et al. (1972) have suggested that addicts seek the personal intimacy and sharing often deprived them as children, not through "normal means," but more often through drug and needle sharing, which serves as an end in itself. Like other investigators, they noted addicts to be especially resentful of authority and external controls, and while frequently desiring help with life problems, unwilling to acknowledge this and/or request assistance.

Kaufman (1974) has stressed the importance of drugs, specifically the opiates, in the suppression of interpersonal needs among addicts. He states that drugs may either be substituted for interpersonal relationships or create a protective barrier which makes interpersonal interactions more comfortable by numbing the anxiety and perceived dangers associated with intimacy.

Scherer et al. (1972) demonstrated that, inconsistent with the image drug users often attempt to present through rebelliousness and defiance of social norms, his sample actually possessed a higher need for social approval from others than did controls.
The research would seem to suggest that addicts either sublimate or deny their interpersonal needs. There is legitimate skepticism regarding the reliability of the responses made by addicts to any questionnaire, test or inventory. Stephens (1972) has noted the way in which conning becomes an integral factor of the user's role and may well generalize to his interpersonal interactions. His research did suggest, however, that compulsive users do tend to make truthful responses in research situations.

**Intelligence, Impairment and Differentiation**--With regards to differentiation, Witkin et al. (1971) has stated that: "What is basically at issue in this cognitive style is extent of ability to overcome an embedding context. This ability, when developed, makes possible an analytical way of experiencing" (p. 7).

Numerous studies have demonstrated a relationship between differentiation level (as measured by the BAT, RFT, and EFT) and performance on problem-solving tasks where the solution depends upon the use of a critical element in a different context from the one in which it has been presented (Fenchel, 1958 and Karp, 1963).

Previous factor analytic studies by Cohen (1958, 1959) have identified three major factor components of both the *Wechsler Adult Intelligence Scale* (WAIS) and the *Wechsler Intelligence Scale for Children* (WISC), a verbal comprehension factor, an attention-concentration factor, and what may be designated as an analytic factor. This analytic factor is best represented by Block Design, Object Assembly and Picture Completion subtests. Performance on these subtests, as on the EFT, appears to have the task requirement of separating items from
an organized context (Witkin et al., 1971). Factor analytic studies by Goodenough and Karp (1961) and Karp (1963) have found that measures of differentiation all load on this analytic factor of the Wechsler tests, but not on either the verbal-comprehension or attention-concentration factors. While this relationship would appear to account for the moderate correlations frequently between full scale I.Q. scores and the BAT, RFT and EFT, this point of view is not without skeptics.

Dubois and Cohen (1970) obtained low, but significant correlations between both the RFT and EFT and the majority of subscores on the (New York) State University Admissions Examination (SUAE). The SUAE tests areas such as verbal and quantitative aptitude and achievement in five academic areas. These findings raise question to the assumption that differentiation is related only to those aspects of measured intelligence requiring analytical ability, i.e., overcoming embedded contexts.

Bruel and Pesycnski (1958) demonstrated that differentiation, as measured by the RFT, decreased as a function of the number of cardiovascular accidents (strokes) suffered by patients. This finding was taken to suggest that brain damage is an important contributing factor to decreased differentiation. The value of the RFT as a prognostic tool in rehabilitation amongst this population was also demonstrated in this study.

Bailey et al. (1961) demonstrated that perceptual dependency was associated with significant organic brain damage and proposed that this may account for the deficits observed among alcoholics. Karp and Kondastadt (1965), as previously noted, demonstrated a lack of interaction between length of drinking history and level of differentiation. This finding would tend to disprove such a cause and effect relationship.
The research of Goldstein and Shelly (1971) with alcoholics suggests that mild intellectual impairment may be observed more frequently in this population than the normal one, but fails to relate these factors causally. Utilizing the RFT, WAIS and Halstead Battery (Halstead, 1947) they noted that the intellectual performance pattern observed in their alcoholic sample resembled that found in elderly persons. Factor analysis of the measures utilized tended to confirm previously noted loadings on analytic factors by the RFT and Object Assembly subtest of the WAIS. Additionally the Trail Making component of the Halstead Battery loaded quite heavily on this factor.

Utilizing the RFT, Bender-Gestalt Test and the Shipley Institute of Living Scale (Shipley), Pisani et al. (1973) found no relationship between perceptual dependency and conceptual thinking deficits as indicated by the Conceptual Quotient (C.Q.) of the Shipley. A mild correlation between the RFT and indications of organicity, as measured by the Bender-Gestalt Test was noted. Jones and Parsons (1972), on the other hand, found a negative correlation among both alcoholics and controls between the abstraction scores on the Shipley and the mean number of seconds required to locate embedded figures on the EFT.

**Sex Differences and Differentiation**—Examination of the norms provided in the EFT Manual (Witkin et al., 1971) reveals consistent differences between males and females in level of differentiation, with males demonstrating higher levels of perceptual articulation across all ages reported (age 10-mid 30's).

In addition to the studies cited for normative purposes in the manual, numerous other authors have also reported that males exhibit a higher level of differentiation than females (Andrieux, 1955;
Bennett, 1956; and Franks, 1956). Cross-cultural studies in Japan (Kato, 1965), Siena Leone (Dawson, 1967a, 1967b) and Nigeria (Okonji, 1969) have confirmed the consistency of these observed differences.

Karp et al. (1970) found female alcoholics to be significantly more field dependent than their male counterparts. Golden (1972) concluded, following an exhaustive review of the research literature, that the early socialization and parent-child relations may lie at the basis of these observed sex differences. Sex-role identification is one variable which has shown some promise in explaining this phenomenon. At this time, however, research results remain inconclusive.

**Psychological Defenses and Differentiation**—Witkin et al. (1962) hypothesized a relationship between type of defense mechanisms utilized by an individual and his/her level of differentiation. Specifically, it was predicted that persons characterized by less structured, less specialized type of defenses, would be expected to perceive the world in a less structured, less differentiated manner. Witkin et al. (1971) have further explained the nature of this proposed relationship by stating that:

> In the last analysis, defenses help determine the content of a person's experience—what enters into consciousness and what is put aside. They do this, in part, through regulating the interrelation between affect, on one hand, and ideation and perception on the other."

(Witkin et al., 1971, p. 9)

He goes on to suggest, specifically, that persons utilizing global defenses such as massive repression and primitive denial shall demonstrate less perceptual differentiation than persons utilizing more specialized defenses such as isolation.
Research by Minard and Mooney (1969) has illustrated this view of communality in mode of functioning with regard to cognition and defenses. They demonstrated that for less differentiated subjects, the speed of perception for tachistascopically presented words was markedly affected when the words carried an emotional connotation. Percept and feeling were, in other words, not separate. More differentiated subjects showed no difference in speed of perception for neutral and charged words, suggesting discreteness of percept and feeling.

Utilizing the Defense Measuring Instrument (DMI) (Glesser and Ihilevich, 1969), the Figure Drawing Test, and the EFT, Ihilevich (1968) found psychiatric outpatients who depended primarily on non-specialized defenses like denial and aggression turned inward more perceptually dependent than those who depended primarily on more structured defenses such as aggression turned outward and projection. As would be expected, control subjects scored at an intermediate level of differentiation and preferred defenses of a corresponding, or intermediate, level of specificity. Further research by Ihilevich and Glesser (1971) confirmed these earlier findings, again with psychiatric patients of both sexes.

Donovan et al. (1975) obtained similar confirmation of Witkin's hypothesis with an alcoholic population. While noting that alcoholics were not a homogeneous population with regards to level of differentiation, they found less differentiated clients utilized less differentiated defenses such as denial and turning inward of hostility to a greater extent. Their more differentiated counterparts relied on more sophisticated defenses such as turning against objects and projection.
While significant attention has been focused upon disorders and problems associated with perceptual dependency, which are generally characterized by more primitive defense structures, research has also pointed to specific types of pathology encountered among high differentiating individuals. The kind of pathology generally observed among highly differentiated individuals includes delusions, expansive and euphoric ideas of grandeur, overideation, and continuing struggles for the maintenance of identity, however bizarre the attempts may be (Witkin et al., 1971).

Highly differentiated cognitive styles have been found among many individuals suffering from paranoid disorders (Jannucci, 1964; Powell, 1964; and Witkin et al., 1950). Obsessive-compulsive characters (Zukmann, 1957), neurotics with well organized symptom pictures and those ambulatory schizophrenics who display a well developed defensive structure (Korchin, unpublished study, in Witkin et al., 1971).

Summary and Conclusions

This chapter has reviewed the research literature related to the subject of perceptual differentiation and dependency-rooted disorders and the relationship between perceptual differentiation, drug dependency, and other personality variables under consideration in this study.

The first section of the chapter reviewed the research literature pertaining to the relationship between perceptual differentiation and substance dependency. While little research has been done on perceptual differentiation among drug dependent persons, it is suggested that this population may be more perceptually dependent than normals. Much research has been conducted in this area with alcoholics. From
this review it may be concluded that alcoholics, as a group, demonstrate significant deficits in perceptual differentiation ability. There is evidence also, that obese persons, those dependent upon the intake of food to satisfy some internal psychic mechanism, also represent a perceptually dependent group. Finally, it is suggested that persons suffering from other emotionally based disorders which are rooted in dependency problems such as asthma, enuresis and psychosomatic illnesses, as well as persons seeking more psychological support in medical treatment, demonstrate less perceptual differentiation than normals.

It may be concluded, from the studies reviewed in the first section of this chapter, that relative deficiencies in perceptual differentiation have been demonstrated to relate rather consistently with the presence of disorders commonly felt to be rooted in dependency problems.

The second part of this chapter reviewed the research literature pertaining to self-concept, interpersonal orientation, intelligence, and other personality characteristics as they relate to perceptual differentiation and drug dependency. From this review one may conclude that there appears to be a strong relationship between drug dependency and poor self-concept. The evidence is not as strong for the existence of a relationship between level of perceptual differentiation and level of self-esteem.

The research suggests that individuals' levels of perceptual differentiation are related to their interpersonal styles/orientations. Specifically evidence is present that points to increased dependency on others with decreased differentiation ability. Numerous behavioral studies have demonstrated this relationship. Not as consistent,
however, have been attempts to relate this facet of perceptual-cognitive functioning to psychometric indices of dependency.

Additional studies suggest that perceptually dependent individuals tend to be more outgoing, sociable, and less likely to express hostility than more perceptually differentiated persons. The latter are characterized as more independent in their interpersonal orientation.

Studies reviewed indicated that the interpersonal orientation of drug addicted persons is rather disturbed by conventional standards. The research characterizes addicts as preferring lifestyles where there is limited demand for social interaction and responsibilities, and where relationships are neither encouraged or highly valued.

Regarding the relationship between perceptual differentiation and intelligence, numerous studies have found rather high correlations between EFT, RFT, and BAT, and what is best described as an analytic factor of IQ tests such as the WAIS and WISC. Opinion and research are mixed with regards to the extent of the relationship between perceptual differentiation and other components of what is referred to as intelligence. It may be concluded from this review, that a relationship between cognitive impairment of organic origin, and perceptual dependency, likely exists.

The research is clear in demonstrating consistent sex differences in level of perceptual differentiation. Cross cultural studies confirm that females as a group are more perceptually dependent than males. The basis for this difference, however, remains to be demonstrated.

Finally, research is reviewed addressing the issue of the relationship between perceptual differentiation and personality characteristics, specifically the types of psychological defenses utilized.
It may be concluded from this review, that persons lacking in perceptual differentiation tend to rely upon more primitive defense mechanisms such as denial and aggression turned inward. Perceptually-cognitively articulated individuals appear more reliant upon defenses such as projection and anger turned outward. These latter defenses reflect more structure and specialization. Psychopathology, reflective of these defense styles, is associated with extreme positions at either end of the perceptual differentiation continuum.

This chapter presented a review of the relevant research literature. Chapter III describes the method utilized in this study.
Chapter Three
Methodology

Introduction

This chapter presents the specific research methodology utilized in this study. It contains a description of the setting and sample, procedures used, and a description and discussion of the instruments. Finally, the research design and statistics utilized in the analysis of data are presented.

Setting

The VITA Residential Services Drug Treatment Program is a "drug-free," inpatient program located in Columbus, Ohio. The program is designed to accommodate up to 40 patients at any given time. Since its initial operation in July, 1980, the program's census has not fallen below capacity for any 30 day period.

VITA Residential Services (VRS) is a behavioral oriented program designed for the rehabilitation and reintegration into the community of criminal drug dependent persons. The environment is very structured with planned recreational and therapeutic activities entailing much of the patients' time when they are not working at their jobs in the community.

During the initial orientation period each patient receives a complete medical examination, is evaluated by a psychiatrist, and is
tested by psychology interns using a standard psychometric battery. The patient immediately becomes involved in regular individual and group counseling sessions with a psychology intern and/or the staff psychologist. Urinalysis and other procedures to detect substance abuse are conducted on a regular basis with the patients throughout both the inpatient and follow-up phases of treatment.

Following the one week orientation period to the program each patient is required to obtain and maintain regular and verifiable employment and/or vocational-educational training. An employment counselor is available to assist them in endeavors of this sort. VRS stipulates a minimum of six months inpatient treatment for successful completion of the program. Most patients who are successfully terminated form the inpatient phase of the program, complete it in eight to ten months, then begin an outpatient follow-up program which lasts for an additional four to six months. Only a small percentage of the patients who enter the program successfully complete it. A large percentage leave the program in violation of their court orders or are revoked by the court for continuing drug usage.

Sample

The sample utilized in this study consisted of all of the patients participating in the VITA Residential Services Drug Treatment Program during a three month period in the spring of 1981 who were capable of completing the research instrument battery. Not included were patients who were illiterate or withdrew from treatment prior to completion of all the instruments.
All of the subjects were mandated into treatment through some facet of the criminal justice system. The majority of them have stipulated, as a condition of either their probation, parole or furlough, successful completion of an inpatient drug treatment program. Each of the subjects was deemed drug dependent on the basis of an intake interview with a social worker, and subsequently diagnosed as such by a licensed psychologist. All of them can be considered as poly-drug abusers since their histories indicate illegal use of multiple substances.

The subjects were both male and female adults. Their ages ranged from 18 to over 35 years of age. Both black and white patients from a wide range of socio-economic backgrounds comprised the sample, although the lower to middle socio-economic classes were disproportionately represented.

The educational level attained by the subjects ranged from sixth grade to several years of college. All of the subjects were unemployed at the time they entered the program.

A more detailed description of the sample is presented in the following chapter.

Procedures

The voluntary consent for participation in this study was solicited and received from each subject by the investigator. Patients entering the VRS program are generally tested with a standard psychometric battery consisting of the Shipley Institute of Living Scale (Shipley), Tennessee Self Concept Scale (TSCS) and Minnesota Multiphasic Personality Inventory (MMPI) during their orientation to the program.
If drug toxicity is suspected, testing is delayed until such time as withdrawal and stabilization has occurred. For the purpose of this study, the *Fundamental Interpersonal Relations Orientation-Behavior* (FIRO-B) and *Embedded Figures Test* (EFT) were also administered to each patient within a short period following the administration of the standard battery.

All psychological testing was conducted by psychology interns possessing at least one year's experience in standardized and projective testing within this setting. All of the testing was conducted under the supervision of a licensed psychologist.

**Instruments**

*Embedded Figures Test: Short Form*—The short form of Witkin's *Embedded Figures Test* consists of 12 matched pairs of cards, each imprinted with a geometric figure. It is an individually administered test, in which the subject is first presented a card imprinted with a complex, colored, geometric figure imprinted upon it. The subject is asked to describe the figure while it is presented for 15 seconds. Following the withdrawal of this card, the subject is then presented the paired card which is imprinted with an achromatic, simple geometric figure. The subject is instructed that he is to locate this simple figure within the more complex one. The simple figure is replaced with the more complex figure after 10 seconds, and the subject is timed on how long it requires for him to find the simple embedded figure. The maximum time allowed per card is 3 minutes. Provisions for allowing the subject to reexamine the simple figure are made, however, the subject is not permitted to view both figures simultaneously. The
score is reported in the mean number of seconds required by the subject to locate the complex figure within each of the 12 pairs.

The short form of this test has consistently demonstrated correlations in the high .90's with the longer version, which consists of 24 pairs of figures (Jackson, 1956). Test-retest reliabilities for the EFT in college samples have consistently ranged over .80 with one study reporting test-retest correlations of over .88 following a 3 year interval, in college age males (Witkin et al., 1971).

The EFT has shown consistency in correlating significantly and generally quite highly with the scores of tests based on body orientation such as the BAT and RFT. In critiquing the EFT for Personality Tests and Reviews (Buros, 1970), Gough has stated that "the importance of the innovative trend exemplified by Witkin's test cannot be overemphasized" (p. 1015). He goes on to note, however, that the instrument is somewhat "unwieldy," and that adequate norms are lacking. Use of the EFT in similar research studies is reported in the review of the literature presented in Chapter II.

Tennessee Self Concept Scale: Clinical and Research Form--The TSCS is a self-administering instrument comprised of 100 self report statements. The client is requested to respond to each item on a five point scale: "mostly true," "partly true," "partly false," "mostly false," or "completely false." Ninety of these items were classified into the various scales by ratings of clinical psychologists, on the basis of their content. The remaining ten items comprise the self-criticism scale, and were taken from the L-scale of the MMPI.

The self-criticism score is a measure of defensiveness, with high scores seemingly indicative of openness and low scores of defensiveness.
The remainder of the TSCS consists of the Total P score or Total Self Concept, three scales to measure internal frame of reference and five categories designed to measure external frame of reference. Additional measurements include conflict scores, distribution of response indicators, a variability of subscale indices, and six empirical scales.

The overall self concept on the TSCS is indicated by the total P which is a general measure of the individual's level of self-esteem. The total P is obtained from a 3 X 5 matrix of subscales which Hamner and Fitts (1968, p. 2-3) describe as follows:

The rows are concerned with how the individual describes himself from an internal frame of reference. Row 1 represents his basic Identity or "what he is," as he perceives himself at the most basic level. Row 2 gives a measure of Self-Satisfaction or how the individual accepts himself. Row 3 deals with the subject's perception of his own behavior. The three rows then may be seen focusing on: 1) "What he is," 2) "How he feels about himself," 3) "What he does."

The five columns deal with the external frame of reference the individual uses to describe himself:

Column A: Physical Self - The physical attributes or functioning, sexuality, stage of health or appearance.

Column B: Moral-Ethical Self - Moral, ethical and religious aspects of the self.

Column C: Personal Self - Personal worth or adequacy, self-respect, and self-confidence.

Column D: Family Self - The individual's relationship with his primary group (family and close friends) and his sense of adequacy as a family member.

Column E: Social Self - The individual's sense of adequacy or worth in relationships with people or society in general.

(Fitts, et al., 1971)
The following scales provide information on the individual's manner of approach to the instrument and their correlates:

**True-False Ratio** - the ratio of true to false responses, suggest response sets, extremes in either direction indicate deviancy in self-description which may be related to behavioral deviancy.

**Net Conflict** - indicates emphasis upon affirmation of positive qualities vs. denial of negative qualities.

**Total Conflict** - indicates internal consistency of self perceptions.

**Variability** - provides measure of inconsistency from one area of self-perception (subscale) to another.

**Distribution** - indicates distribution of responses to categories from "completely true" to "completely false," an indicator of the level of differentiation in the self concept.

In addition to the scales mentioned above, the TSCS also provides six empirical scales. These scales were derived from the 100 test items and are stated by Fitts (1969) to differentiate between groups found in clinical populations. Gill (1978) has defined these scales as follows:

**Defensive Positive Scale (DP)** - This scale consists of 29 items which differentiated psychiatric patients having Total P Scores above the norm group mean from the other patient groups and from the norm group. It is thought to represent a more subtle measure of defensiveness than the Self Criticism Score.

**General Maladjustment Scale (GM)** - This scale comprises 24 items which distinguish psychiatric patients from non-patients, but do not distinguish between psychiatric classifications.

**Psychosis Scale (Psy)** - Twenty-three items make up this scale—items which best differentiate psychotic patients from the other groups.
Personality Disorder Scale (PO) - This scale is composed of 27 items which distinguish this psychiatric classification from the norm, psychotic, neurotic, personality integration and defensive positive groups.

Neurosis Scale (N) - This scale is also composed of 27 items which distinguish neurotic patients from the other group. Like the Gm and PD Scales, it is an inverse one. Low raw scores on these scales result in high T-scores.

Personality Integration (PI) - Twenty-five items are included in this scale, representing a group of subjects adjudged, by outside criteria, to have a better than average level of adjustment.

The TSCS was normed on a sample of 626 persons of varying age, sex, race and socio-economic status. It should be noted that this normative group did not reflect the distribution of the previously noted variables in the general population. Retest reliability, while varying for individuals, is in the high .80's (Fitts, 1969).

In his critique of the TSCS for Personality Tests and Reviews (Buros, 1970), Swinn has stated that "... the TSCS ranks among the better measures combining group discrimination with self concept information" (p. 586). He concludes that "In all, the TSCS offers great potential as a promising clinical instrument" (p. 586).

The TSCS has seen widespread use in drug studies and drug treatment programs across the country (Robinson, 1973). Selected studies in which the TSCS was utilized, which pertain to this research, are reviewed in Chapter II.

Fundamental Interpersonal Relations Orientation - Behavior—The FIRO-B is a self-report questionnaire which takes approximately 5-12 minutes to administer and about the same amount of time to score. It measures two aspects of self-perceived interpersonal behavior, those
expressed by the self and those wanted from others towards the self, along three dimensions: inclusion, or the need for association and interactions with others; control, or the need for dominance in relations with others; and affection, or the need to establish relationships of love and intimacy towards others. The FIRO-B consists of 6 Guttman scales of 9 items each, totaling 54 items. It was developed by Schutz in 1958 and has been utilized rather extensively in human relations training and research.

For Guttman scales the chief measure of reliability is reproducibility, which for all six of the FIRO-B scales is .93 or over (Schutz, 1966). The manual (Schutz, 1967) reports one month test-retest correlations on all scales to be over .70. If one accepts the theory underlying Guttman scales, the content validity would be a property of all such instruments. Limited data is available on construct and criterion related validity.

An individual's score on each scale of the FIRO-B can range from 0-9. The score reflects both the quality of the behavior of that given subscale, how it will be expressed, and the intensity of its expression.

Ryan (1971) has noted that scores at either extreme (i.e., 0, 1, 8, 9) indicate that the behavior may have a compulsive quality to it while more moderate scores may be indicative of tendencies relative to their strength and direction.

In addition to the standard six scales, other scores may also be computed. Schutz (1966) has identified these as follows, with the manner of computation for each indicated:

Activity Level (AL): sum of all "expressed" scores - reflective of the level of behavior expressed towards others.
Need Level (NL): sum of all "wanted" scores - reflective of the individual's need for interpersonal contact.

Importance of People (IOP): sum of "inclusion" scores - reflects the importance of other people to the client.

Assuming Responsibility (AR): sum of "control" scores - reflects the extent to which the client becomes involved in task relations assuming responsibility.

Importance of Affection (IOA): sum of "affection" scores - reflects the extent to which the client values intimate, close relations with people.

Social Interaction Index (SII): grand total of scale scores - reflects the extent to which the client desires and is willing to get involved with people.

Finally, Smith (1963) has suggested that the difference between the "expressed" and "wanted" scores (e-w) on each dimension may reflect the tendency of the client to originate behavior in a particular domain more than to receive it. This provides three additional scores for consideration in interpreting results of the FIRO-B.

While no data is available on the validity of the additional scores which have been identified beyond the six original scales, it must be assumed that these measures would fall short, in all cases, from that described for the main scores, from which they are theoretically-logically derived.

Selected studies utilizing the FIRO-B with similar populations are reviewed in Chapter Two.

The Shipley Institute of Living Scale--The Shipley was developed in 1940 by the research department of The Institute of Living in Hartford, Connecticut. It has received wide use, not only as a screening device for intellectual impairment, for which it was developed, but also as a quick and reasonably valid
indicator of intelligence. It is a "pencil and paper" test with an average administration time of 10-20 minutes. The Shipley provides four separate scores: Verbal, Abstraction, Total, and Conceptual Quotient (C.Q.).

The Verbal score reflects the correct number of best synonyms, selected from four options, to a list of 40 words.

The Abstraction score reflects the number of correct solutions obtained to 20, fill-in-the-blank type, abstract reasoning problems, multiplied by 2.

The Total score reflects the additive totals of the Verbal and Abstraction subtest scores. It is this score which is generally utilized as an indicator of overall I.Q.

The Conceptual Quotient is an index of impairment. It reflects the ratio of the subject's abstraction-age equivalent score to that of the "normal" person receiving the same Verbal score. The score is multiplied by 100 to eliminate decimals. This index is based upon the clinical-experimental observation that in mild degrees of mental deterioration, as in other conditions involving intellectual impairment, vocabulary is relatively unaffected, but the capacity for abstract (conceptual) thinking declines rapidly. Thus, the lower the score falls below 100, the greater the probability of impairment.

The manual (Institute of Living, 1940, p. 3) suggests the following interpretive ranges for the C.Q.:

- above 90 ....................... normal
- 85-90 .......................... slightly suspicious
- 80-85 ........................... moderately suspicious
75-80 ..................... quite suspicious
70-75 ..................... very suspicious
below 70 .................... probably pathological

Studies using the Shipley in a similar manner as this study, among similar populations, are cited in the review of the literature in Chapter Two.

**Minnesota Multiphasic Personality Inventory (MMPI)**--The MMPI is a rather complex instrument which has seen extensive use by both clinicians and researchers. Because of these considerations, and the fact that most persons interested in this study likely possess familiarity with the instrument, this description shall be kept brief. Persons desiring an in-depth description of this instrument, its interpretation, and applications, are referred to any of the following authors: Dahlstrom et al., 1975; Marks et al., 1974; Hathaway and Meehl, 1951; Webb and McNamara, 1968; and Lachar, 1974.

The MMPI is a 550 item objective test in which the subject is asked to assess each item as either "true" or "false." It is generally presented in a booklet form, with the subject transferring their answers to a separate answer sheet. It can also be administered by separate item cards or tape recorded. Normal administration time ranges from 60 to 75 minutes. Only the first 399 items are scored for the standard 13 scales, the rest of the items serving special scales and research purposes. The MMPI was designed to distinguish pathological individuals from normals. It is generally used with adolescent to adult age range persons.

The items comprising eight of the standard clinical scales were statistically derived based on their ability to differentiate a
pathological group from a sample of around 700 normals. The former
were patients at the University of Minnesota Hospitals whose group
sized varied, but averaged around 50. The normal sample was comprised
of visitors to the aforementioned hospitals. The items comprising
the other two clinical scales: scale 5 and scale 0, were derived in
a similar fashion, at a later date, though not with necessarily
pathological groups. Three other scales which are routinely scored are
validity scales. These scales were also statistically developed to
provide meaningful data and adjustments for response sets, malingering,
and defensiveness.

Scores obtained on the scales are typically plotted on a profile
sheet. The profile sheet is based on the norms of the original control
sample. Each scale has a mean equal to 50 with a standard deviation
of 10. Scores of 65-70 or above, that is falling 1.5-2 SD above the
mean, are typically considered to be of clinically significant
elevation.

A brief description follows the presentation of each of the
standard thirteen scales below:

L(Lie) - this scale is based on a group of items that make the
examinees appear in a favorable light, but are unlikely to be
truthfully answered in the favorable direction. Elevations
are generally interpreted as reflecting naive or rigid
defensiveness.

F(Validity) - this scale is based on a group of items that
were very infrequently answered in the scored direction by
the normalization group. Although they reflect undesirable
behavior, they do not cohere in any pattern of abnormality.
A high F score may indicate carelessness in responding,
gross eccentricity, or deliberate malingering.

K(Correction) - this scale utilizes still another combination
of specially chosen items to provide a measure of test-
taking attitude. The items are believed to be a subtle
measure of the subject's level of defensiveness. This score is used to statistically correct select clinical scales for such defensiveness.

1(Hypochondriasis) - a fairly transparent scale developed to distinguish hypochondriacs from normals. Elevations are indicative of numerous physical complaints and concern with bodily functions.

2(Depression) - developed to distinguish depressed patients from normals. Elevations are associated with the presence of depression, feelings of hopelessness, etc.

3(Hysteria) - this scale was developed to distinguish persons suffering from conversion hysteria from normals. Elevations are more commonly associated with somatization of less spectacular sorts, repression and denial of emotions.

4(Psychopathic Deviant) - developed to differentiate normals from anti-social personalities. Elevations on this scale are associated with characterological difficulties, rebelliousness, acting-out, impulsivity, and avoidance of personal responsibilities.

5(Masculine-Feminine) - this scale was originally developed to distinguish homo-erotic persons from heterosexuals. No longer felt to be a necessary or effective scale for this purpose, elevations are generally interpreted to indicate a lack of identification with traditionally defined sex roles and interests.

6(Paranoia) - developed to identify individuals displaying one of the paranoid type disorders. This is a very transparent scale in item content. Elevations are associated with suspicion, mistrust, hypervigilance, and other related symptomatology ranging to delusions and hallucinations of a persecutory nature.

7(Psychasthenia) - this scale is generally interpreted to relate to one's level of anxiety. Elevations may indicate excessive doubts, fears, rumination, and the presence of phobias in addition to anxiety and agitation.

8(Schizophrenia) - originally developed to distinguish schizophrenics from normals, elevations are seldom interpreted in such a narrow fashion today. Elevations are generally associated with the presence of some type of reality contact disturbance. Extreme elevations (over 80) are almost always associated with either malingering or a disorder of psychotic proportions.
9(Hypomania) - this scale was developed to differentiate persons suffering from manic type disorders from normals. Elevations are generally associated with high energy level, distractability, a high need for excitement and stimulation, and hyperactivity.

0(Social introversion) - developed and normed on college females, this scale was designed to distinguish introverted individuals from extroverts. It is usually interpreted as being reflective of not only a person's need and desire for social contact, but also as a relatively strong indication of social skill level, with elevations indicating less of all these attributes.

The discriminative validity of each of these scales differs, but is generally quite high. Likewise the retest reliability of each scale differs, but ranges from the +.50's to the low +.90's among both normals and clinical samples. It should be noted, however, that several of the scales aim to assess behavior that is extremely variable over time. Scale 2 (Depression) might exemplify this point.

Perhaps the strongest argument for the utility of the MMPI, in both clinical work and research, is the fact that it is far and ahead the most widely used psychometric instrument. To date over 3500 references have been published about this test. Some of these studies which pertain directly to this research are cited in the review of the literature in Chapter Two.

**Analysis of the Data**

The initial statistical analysis consisted of the calculation and examination of the frequencies, means and standard deviations of the demographic data on the sample under study. Following this, the distribution of scores and mean profiles obtained by the sample on each of the respective psychometric variables was considered. The computer program *Statistical Package for the Social Sciences* (SPSS)
was utilized for these procedures as well as all correlation and one-way analysis of variance computations.

One-way analysis of variance procedures were then performed to statistically examine differences observed between the sample under study in this work and other selected research samples on EFT scores. Likewise, differences between addicts categorized by primary drug of abuse type on EFT scores were tested. The Scheffe technique was utilized for post hoc comparisons. A $p > .05$ was required for consideration of statistical significance in all analyses, unless otherwise noted.

The Pearson Product Moment Correlations between the EFT score and the scales of the other psychometric variables under consideration in this study, among the addict sample, were then calculated and examined. Select variables were then included in a MANOVA, conducted to explore the differences among addicts categorized as higher and lower level differentiators. The addicts were categorized on the basis of their respective position to the sample mean on the EFT.

Selected for inclusion in the MANOVA were: the clinical scales of the MMPI, the scales of the Shipley, the Total Positive Scale of the TSCS, and the Social Interaction Index of the FIRO-B. The latter two variables were selected, from all of the possible variables represented by the respective instruments, because it was felt that they best represented the major consideration of each, and because these scales offered better reliability than subscale scores.

Additional analyses comparing the addict's mean scores on the TSCS with those of the normative sample, the FIRO-B mean profiles obtained by this addict sample with that obtained by a methadone
treatment sample, and calculating the intercorrelations of the variables included in the aforementioned MANOVA, were then performed and presented in table form in Appendix B.

This chapter presented the methodology used in the present study. Chapter IV presents the results of the statistical analyses conducted on the data.
Chapter Four

Results

Introduction

This chapter presents the results of the statistical analyses addressing the research questions posed in Chapter One. It is divided into three major sections. Section one presents the demographic data gathered on the sample population and addresses the secondary research question through presentation of the mean sample profiles obtained on the respective research instruments utilized in the study. Section two directly addresses the primary research questions through presentation of the results of statistical analysis conducted on the data obtained from this sample and the results of statistical analysis comparing this sample with other normative and research populations. Section three summarizes the findings presented in this chapter.

Demographic Data

Data were collected from 42 patients at the VITA Residential Drug Treatment Program. Males comprised 32 (76.6 percent) of the subjects, females 10 (23.8 percent). The mean age of the male subjects was 23.56 years with a standard deviation (SD) of 3.92 years. The mean age of the female subjects was 27.30 years with a SD equal to 8.26 years. The differences in age between male and female subjects was not significant.
The sample was comprised of 36 (85.7 percent) white patients and 6 (14.3 percent) blacks. A total of 32 (76.2 percent) of the subjects were currently on probation, 2 (4.8 percent) were on parole, and 8 (19 percent) were on furlough from state institutions. Criminal charges against all of these subjects either stemmed directly from, or were related to, illicit substance involvement/use.

Embedded Figures Test (EFT)

Figure 1 presents the frequency distribution of EFT scores obtained from the addict sample under study. Visual examination of Figure 1 reveals a slight positive skew to the distribution of scores across all possible ranges. The overall mean for the group was 79.35 with a median score equal to 70.54 and a SD equal to 40.92.

The shape of the EFT score distribution obtained from this sample closely resembles that found among the normal population. The mean and entire distribution, however, appear shifted towards the field dependency pole. This would suggest that the addict sample is less differentiated in their perceptual-cognitive style than the normal population. Statistical analysis addressing this issue are presented in a later section of this chapter.

Tennessee Self Concept Scale (TSCS)

Figure 2 presents the mean TSCS profile obtained by the addict sample. Visual examination of the profile reveals that the addict sample differs considerably from the normative sample utilized by Fitts (1969) to develop the profile sheet. Appendix B, Tables 7 and 8 present the results of multiple one-way ANOVA's statistically.
Figure 1. Frequency distribution of EFT scores obtained from addicts.
Figure 2. Mean TSCS Profile of the Addict Sample.
comparing the mean scores obtained by the addict sample with those of
the normative sample, on each of the respective scales.

The mean profile obtained by the addict sample suggests that, as
a group, they possess a generally low level of self-esteem. The
overall self concept reflected by their Total Positive Score places
them in only the 12th percentile of the normative sample. Comparative
subscale percentile scores obtained were as follows:

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>10th</td>
</tr>
<tr>
<td>Moral-Ethical Self</td>
<td>7.5th</td>
</tr>
<tr>
<td>Self-satisfaction</td>
<td>25th</td>
</tr>
<tr>
<td>Personal Self</td>
<td>22d</td>
</tr>
<tr>
<td>Behavior</td>
<td>8th</td>
</tr>
<tr>
<td>Family Self</td>
<td>10th</td>
</tr>
<tr>
<td>Physical Self</td>
<td>24th</td>
</tr>
<tr>
<td>Social Self</td>
<td>29th</td>
</tr>
</tbody>
</table>

Similar subscale profiles are often observed in individuals who
have incorporated either a societal or family view of themselves as "a
bad person." This is commonly felt to contribute to behavior in such
a way as to create a "self fulfilling prophesy" type of situation.
The relatively high level of self satisfaction suggested is contra-
indicative of motivation for personal change. Finally, the relatively
high physical and social self scores suggest that the addicts' views
of their physical and social attributes/abilities is rather high. This
may indicate that the use of social manipulation, sex and aggression
provide their primary means of obtaining need gratification.

The mean scores obtained on the "manner of approach" scales are
generally unremarkable with the exception of the extremely high T/F
score. This extreme elevation is suggestive of a high level of
impulsivity. In short, it reflects a "yes" response set, for which
the behavioral implications are obvious. In relation to the subjects' 
manner of approach to the task of self definition, it suggests that it
was easier for them to affirm those things which they are, and relatively more difficult to deny those they are not.

The most noteworthy aspect of the profile on the empirical scales is the generally high level of psychopathology which is suggested. The mean scores from the addicts either extend to the uppermost limits, or exceed the normal ranges established for the purposes of individual profile interpretation, on each of the following scales: General Maladaptation, Psychosis, Personality Disorder, and Neurosis. Given the multiple elevations observed, further interpretation of the mean profile would likely be misleading.

Fundamental Interpersonal Relations Orientation—Behavior (FIRO-B)

The mean FIRO-B profile obtained by the addict sample suggested a generally low level of interpersonal interaction between the subjects and their social environments. The mean score observed on all six of the major scales fell within the range of 2.87 to 3.43 (SD range 2.06–3.13). Appendix B, Table 9, presents the means, standard deviations, and results of one-way ANOVA's comparing the mean FIRO-B scores obtained from this addict sample with those researched by Saxon et al. (1978). The findings suggest that both groups of addicts prefer a lifestyle where there is limited interpersonal interaction, with few responsibilities of an interpersonal nature, and where relationships are neither encouraged nor highly valued.

Minnesota Multiphasic Personality Inventory (MMPI)

Due to the complexity in both the construction and interpretation of the MMPI, the presentation and discussion of the simple mean profile
obtained by the addict sample would prove meaningless at best, and misleading at worst. More specific examination of the MMPI scale values and profiles, as they relate to other variables under consideration, is presented in Section Two of this chapter.

**Shipley Institute of Living Scale (Shipley)**

The mean Shipley scores obtained by the addict sample were as follows: Verbal = 24.83 (SD = 6.08), Abstraction = 25.33 (SD = 9.97), Total = 50.05 (SD = 14.12), and CQ = 99.46 (SD = 19.39). These scores suggest that both the level and distribution of intelligence within the sample resembles that found among the general population. The obtained CQ mean score suggests that the addicts, as a group, show no greater likelihood of possessing any cognitive impairment than a normal sampling.

**Comparisons of EFT Scores Between Addicts, Other Samples, and Among Addict Subgroupings**

Table 1 presents the means and SD's on the EFT for the subgroups of male and female addicts, as well as those of a normal college sample obtained by Oltman (unpublished data, 1964) and reported in *The EFT Manual* (Witkin et al., 1971), and that of a sample of young male alcoholics reported in Karp and Konstadt (1965). Visual examination of Table 1 reveals that the young male alcoholic sample demonstrated the lowest level of perceptual differentiation overall. The male and female addict groups followed, with female and male college students scoring lowest on the test respectively.

Table 2 reports the results of a fixed effects, one-way analysis of variance conducted on data presented in Table 1. An obtained
Table 1
Means and Standard Deviations of EFT Scores by Male and Female Addicts, College Studentsa, and Young Male Alcoholicsb

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Addicts</td>
<td>32</td>
<td>70.52</td>
<td>38.97</td>
</tr>
<tr>
<td>Female Addicts</td>
<td>10</td>
<td>98.01</td>
<td>43.49</td>
</tr>
<tr>
<td>College Males</td>
<td>34</td>
<td>48.30</td>
<td>22.40</td>
</tr>
<tr>
<td>College Females</td>
<td>34</td>
<td>69.40</td>
<td>41.00</td>
</tr>
<tr>
<td>Alcoholic Males</td>
<td>20</td>
<td>93.16</td>
<td>49.27</td>
</tr>
</tbody>
</table>

aOltman (Unpublished data, 1964) in Witkin et al. (1971).
bKarp and Kondstadt (1965).

Table 2
Results of ANOVA on EFT Scores of Male and Female Addicts, College Students and Young Male Alcoholics

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>8729.70</td>
<td>7.65*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>125</td>
<td>1141.07</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>129</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .001.
\[ F = 7.65 (p < .001) \] suggested that significant differences existed among these groups. Utilizing the Scheffe technique, all possible post-hoc comparisons were tested. Significant differences \((p < .05)\) were found to exist between the following groups: addict males and college males, alcoholic males and college males, and addict females and college males. The differences observed between alcoholic males and college females closely approached significance \((p = .06)\).

Table 3 presents the means and SD's obtained by the addict sample under study when categorized on the basis of their self-reported primary drug of abuse type. Visual examination of this data reveals that the stimulant users, as a group, appear more highly differentiated than the users of depressants, narcotics and hallucinogens.

Table 4 presents the results of the fixed effects, one-way analysis of variance computed on the data reported in Table 3. The obtained \( F = .86 \) is not suggestive of any statistically significant variance between these groupings of addicts.

Correlations of EFT Scores with TSCS, FIRO-B, Shipley and MMPI Scales

Table 5 presents the Pearson Product Moment Correlations between the EFT scores obtained by the addict subjects and the TSCS, FIRO-B, Shipley and MMPI Scales.

On the TSCS, significant \((p < .05)\) correlations were found to exist between five of the major self-concept subscales and EFT score. Identity, Behavior, Physical Self, Personal Self and Family Self subscales all correlated negatively with EFT score suggesting that lower self-esteem in these areas is associated with a lower level of perceptual differentiation.
Table 3

Means and Standard Deviations of EFT Scores of Addicts Categorized by Primary Drug of Abuse Type

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stimulants</td>
<td>9</td>
<td>59.99</td>
<td>31.34</td>
</tr>
<tr>
<td>Depressants</td>
<td>12</td>
<td>85.26</td>
<td>43.22</td>
</tr>
<tr>
<td>Narcotics</td>
<td>9</td>
<td>81.92</td>
<td>47.05</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>12</td>
<td>86.03</td>
<td>40.65</td>
</tr>
</tbody>
</table>

Table 4

ANOVA on EFT Scores of Addicts Categorized by Primary Drug of Abuse Type

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>1462.52</td>
<td>.86</td>
</tr>
<tr>
<td>Within Groups</td>
<td>38</td>
<td>1691.63</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5
Pearson Correlations of EFT Scores of Addicts with TSCS, FIRO-B, Shipley and MMPI Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>r</th>
<th>Scale</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TSCS</strong></td>
<td></td>
<td><strong>MMPI</strong></td>
<td></td>
</tr>
<tr>
<td>Total Positive</td>
<td>-.13</td>
<td>L</td>
<td>.27*</td>
</tr>
<tr>
<td>Row 1 (Identity)</td>
<td>-.26*</td>
<td>F</td>
<td>.35**</td>
</tr>
<tr>
<td>Row 2 (Self Satisfaction)</td>
<td>-.14</td>
<td>K</td>
<td>-.14</td>
</tr>
<tr>
<td>Row 3 (Behavior)</td>
<td>-.35**</td>
<td>1</td>
<td>.36*</td>
</tr>
<tr>
<td>Column 1 (Physical Self)</td>
<td>-.25*</td>
<td>2</td>
<td>.55**</td>
</tr>
<tr>
<td>Column 2 (Moral-Ethical Self)</td>
<td>-.14</td>
<td>3</td>
<td>.37**</td>
</tr>
<tr>
<td>Column 3 (Personal Self)</td>
<td>-.32*</td>
<td>4</td>
<td>.42**</td>
</tr>
<tr>
<td>Column 4 (Family Self)</td>
<td>-.17</td>
<td>5</td>
<td>.04</td>
</tr>
<tr>
<td>Column 5 (Social Self)</td>
<td>-.27*</td>
<td>6</td>
<td>.35**</td>
</tr>
<tr>
<td>T/F</td>
<td>-.16</td>
<td>7</td>
<td>.52**</td>
</tr>
<tr>
<td>Net Conflict</td>
<td>.04</td>
<td>8</td>
<td>.47**</td>
</tr>
<tr>
<td>Total Conflict</td>
<td>.05</td>
<td>9</td>
<td>-.05</td>
</tr>
<tr>
<td>Row Variance</td>
<td>.00</td>
<td>0</td>
<td>.37**</td>
</tr>
<tr>
<td>Column Variance</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Variance</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distribution</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defensive Positive</td>
<td>-.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Maladaptation</td>
<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychosis</td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personality Disorder</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neurosis</td>
<td>-.25*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personality Integration</td>
<td>-.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Criticism</td>
<td>-.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FIRO-B</strong></td>
<td></td>
<td><strong>Shipley</strong></td>
<td></td>
</tr>
<tr>
<td>Expressed Inclusion</td>
<td>-.23</td>
<td>Verbal</td>
<td>-.43**</td>
</tr>
<tr>
<td>Expressed Control</td>
<td>-.11</td>
<td>Abstraction</td>
<td>-.58**</td>
</tr>
<tr>
<td>Expressed affection</td>
<td>-.10</td>
<td>Total</td>
<td>-.58**</td>
</tr>
<tr>
<td>Wanted Inclusion</td>
<td>-.42**</td>
<td>C.Q.</td>
<td>-.42**</td>
</tr>
<tr>
<td>Wanted Control</td>
<td>-.33*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wanted Affection</td>
<td>-.30*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
** p < .01
Among the "manner of approach" and empirical scales of the TSCS, only the Neurosis Scale was significantly (p < .05) related to EFT score. Because the Neurosis Scale is scored in a negative direction, the negative correlation observed between this score and EFT score suggests that decreased perceptual differentiation is associated with a higher probability of the presence of neurotic symptomatology.

On the FIRO-B, significant (p < .05) correlations were observed between three scales and the EFT score. All of the "wanted" scales, Inclusion, Control and Affection, correlated negatively with EFT score. This would suggest that individuals demonstrating less perceptual differentiation desire less of the interpersonal contact which is initiated by others than more highly differentiating individuals. Less differentiated persons might be characterized as more independent and less accepting of external controls than their more highly differentiated counterparts.

Significant (p < .05) correlations were observed between the EFT score and ten of the standard thirteen scales of the MMPI among the addicts. The positive correlation obtained between EFT score and Scale L is mildly suggestive that less differentiated subjects attempted to present themselves in a more favorable light. Their attempts to do this however may reflect naivete, rigidity, or a lack of insight. Scale F was more highly correlated with EFT score than Scale L. This would indicate that less differentiated subjects tended to endorse much of the rather unusual items comprising this scale. Such endorsements are generally indicative of either rather severe psychopathology or conscience exaggeration of psychic distress to attain some end. Both Scale L and F are considered validity scales.
Consideration shall now be directed towards significant correlations observed between EFT score and the clinical scales.

The positive correlation between EFT score and Scale 1 suggests that less differentiated subjects responded to test items associated with the somatic expression of emotional and psychological distress in the scorable direction more frequently than their more differentiated counterparts. This may also indicate more pronounced tendencies, towards preoccupation with physical complaints and health, among this group.

Scale 2 was the most highly correlated scale of the MMPI with the EFT score. While this correlation would suggest that less differentiated subjects endorsed more MMPI items associated with psychological depression, other explanations warrant consideration. Since the EFT is not a pure measure of simple perceptual differentiation in that it requires a motor response the slower response time observed on the EFT by persons scoring higher on Scale 2 of the MMPI may be an artifact of the motor retardation generally associated with clinical depression.

The correlation observed between EFT score and MMPI Scale 3 suggests that less differentiated individuals may utilize denial, and the conversion of psychic distress into physical symptoms, as psychological defenses more than highly differentiated individuals.

Elevations on Scale 4 of the MMPI tend to be associated with acting-out, impulsivity, lack of insight, anger, and other phenomena commonly observed in individuals suffering from characterological disorders. The positive correlation observed between EFT score and this scale, among the addict sample, suggests that less differentiating
Individuals may be more likely to exhibit the aforementioned symptomatology.

MMPI Scale 6 elevation is generally reflective of suspicion and mistrust of others, extreme sensitivity to criticism, the use of projection as a psychological defense, and possibly overt paranoia. The positive correlation found to exist between this scale and EFT score among the addicts suggests that decreased perceptual differentiation may be associated with the presence of these characteristics.

The correlation observed between EFT score and scale 7 of the MMPI, among the sample, suggests that less differentiated subjects likely experience higher levels of anxiety than their more differentiated counterparts. The causal nature of this relationship between anxiety and decreased performance on the EFT, from a theoretical standpoint, could proceed in either direction. While less effective psychological defense structures may result from deficits in differentiation ability, and result in higher levels of anxiety within the individual, the presence of anxiety in the person would also be likely to inhibit EFT performance.

Elevations on Scale 8 of the MMPI tend to be associated with serious psychological disturbances of a rather diverse nature. The correlation observed between this scale and EFT score among the addicts could be interpreted in several ways. To say that this suggests that decreased levels of perceptual differentiation are likely associated with disturbances in thought processes and reality contact, would probably be most accurate.

The correlation found to exist between Scale 0 of the MMPI and EFT score among the sample suggests that lower levels of perceptual
differentiation are associated with social withdrawal and introversion.

All of the scales of the Shipley were negatively correlated with EFT score among the addicts. The abstraction score was more strongly associated with level of differentiation than the Verbal score; however, it appears that increased differentiation is associated with generally higher levels of intellectual ability of both the verbal and abstract reasoning sort. The negative correlation between EFT score and the Conceptual Quotient may suggest that lower levels of perceptual differentiation are associated with a higher probability of some types of cognitive impairment.

**Multivariate Analysis Comparing Higher and Lower Level Differentiating Addicts**

Table 6 presents the means, standard deviations, and results of univariate F test on selected variables by addicts categorized as higher and lower level differentiators. The addicts were categorized as higher and lower level differentiators based on their respective position to the mean EFT score of the sample. Multivariate analysis using the Wilks Lambda Criterion indicated significance between these two groupings at p < .002 (15 df hyp., 26 df err.). Variables between on which the higher and lower differentiating groups were found to differ significantly (p < .05) included the Shipley Abstraction and CQ Scales and MMPI Scale 1, Scale 2, Scale 3, Scale 4, Scale 7 and Scale 8. Significant differences were not observed on TSCS Total Positive Scale, FIRO-B Social Interaction Index, Shipley Verbal Scale, and MMPI Scale 5, Scale 6, Scale 9 and Scale 0.
Table 6

Means, Standard Deviations and Results of Univariate F Tests on Select Variables by Addicts Categorized as Higher and Lower Level Differentiators

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>p less than</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCS Total P</td>
<td>High</td>
<td>22</td>
<td>315.86</td>
<td>34.77</td>
<td>.719</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>311.00</td>
<td>51.25</td>
<td></td>
</tr>
<tr>
<td>FIRO-B SII</td>
<td>High</td>
<td>22</td>
<td>20.68</td>
<td>7.74</td>
<td>.117</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>16.80</td>
<td>7.93</td>
<td></td>
</tr>
<tr>
<td>Shipley Verbal</td>
<td>High</td>
<td>22</td>
<td>26.50</td>
<td>5.68</td>
<td>.062</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>23.00</td>
<td>6.11</td>
<td></td>
</tr>
<tr>
<td>Shipley Abstraction</td>
<td>High</td>
<td>22</td>
<td>30.27</td>
<td>7.23</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>19.90</td>
<td>9.87</td>
<td></td>
</tr>
<tr>
<td>Shipley CQ</td>
<td>High</td>
<td>22</td>
<td>106.77</td>
<td>16.56</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>91.30</td>
<td>19.40</td>
<td></td>
</tr>
<tr>
<td>MMPI Scale 1</td>
<td>High</td>
<td>22</td>
<td>11.95</td>
<td>3.89</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>15.90</td>
<td>5.50</td>
<td></td>
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<tr>
<td>MMPI Scale 2</td>
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<td>22</td>
<td>18.22</td>
<td>4.58</td>
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<td></td>
<td>Low</td>
<td>20</td>
<td>25.20</td>
<td>6.32</td>
<td></td>
</tr>
<tr>
<td>MMPI Scale 3</td>
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<td>19.68</td>
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<td>Low</td>
<td>20</td>
<td>23.00</td>
<td>5.96</td>
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<tr>
<td>MMPI Scale 4</td>
<td>High</td>
<td>22</td>
<td>28.59</td>
<td>3.96</td>
<td>.013</td>
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<td>Low</td>
<td>20</td>
<td>31.85</td>
<td>4.18</td>
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<tr>
<td>MMPI Scale 5</td>
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<td>22</td>
<td>27.54</td>
<td>6.49</td>
<td>.924</td>
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<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>27.75</td>
<td>7.35</td>
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<tr>
<td>MMPI Scale 6</td>
<td>High</td>
<td>22</td>
<td>11.23</td>
<td>2.94</td>
<td>.153</td>
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<td>Low</td>
<td>20</td>
<td>13.05</td>
<td>5.00</td>
<td></td>
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<tr>
<td>MMPI Scale 7</td>
<td>High</td>
<td>22</td>
<td>28.41</td>
<td>5.14</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>35.35</td>
<td>7.36</td>
<td></td>
</tr>
<tr>
<td>MMPI Scale 8</td>
<td>High</td>
<td>22</td>
<td>28.04</td>
<td>3.99</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>36.90</td>
<td>11.92</td>
<td></td>
</tr>
<tr>
<td>MMPI Scale 9</td>
<td>High</td>
<td>22</td>
<td>25.14</td>
<td>4.06</td>
<td>.540</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>24.35</td>
<td>4.17</td>
<td></td>
</tr>
<tr>
<td>MMPI Scale 0</td>
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<td>22</td>
<td>27.00</td>
<td>11.08</td>
<td>.062</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20</td>
<td>33.25</td>
<td>9.90</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B, Table 10 presents the intercorrelation matrix for the variables included in the MANOVA. Examination of these intercorrelations reveals that, as expected, some rather high correlations exist between some of the MMPI scales. Additionally, the TSCS Total Positive, FIRO-B Social Interaction Index, and all of the Shipley Scales all correlate negatively with virtually all of the MMPI clinical scales. Many of these correlations are of statistically significant strength ($p < .05$).

Figure 3 visually depicts the differences observed between the higher and lower level differentiating addicts through presentation of their respective mean MMPI profiles. While both profiles are suggestive of the presence of rather severe psychopathology, the differences between them indicates that marked differences in the clinical symptoms presented may exist. The mean profile of the higher level differentiating group presents a configuration which is commonly attributed to individuals diagnosed as pure Anti-social Personalities. The mean profile obtained by the lower level differentiating group suggests a much more complex mixture of pathological indicators.

**Summary of the Findings**

The results of statistical analyses presented in this chapter indicated that the samples of substance addicted males differed significantly in their level of perceptual differentiation from the non-addicted comparison group of college men. This finding held for both young alcoholic males researched by Kondstadt and Karp (1965) and the poly-drug abusing sample obtained for this study. Differences observed in level of perceptual differentiation between the
Figure 3. Mean MMPI profiles of lower and higher level differentiating addicts.
female substance addicted sample and college females failed to achieve significance by a narrow margin (p = .06).

There were no significant differences observed in level of perceptual differentiation between addict subgroups categorized by primary drug of abuse type. This would suggest that the level of perceptual differentiation demonstrated by addicted individuals is independent of the type of substance chosen for abuse, and vice versa.

Examination of the correlations between EFT scores of the addicts and other variables under consideration revealed multiple significant (p < .05) relationships. Among the significant correlations observed with EFT scores were all of the "wanted" scales of the FIRO-B, the Shipley scales, several of the self-concept subscales of the TSCS, and all but 3 of the standard 13 scales of the MMPI. These correlations suggest that the level of perceptual differentiation observed in addicted individuals is related to their interpersonal orientation, intellectual ability, certain aspects of their self-concept, and the types of psychopathology they display respectively.

Results of a MANOVA conducted on select variables, between groups of addicts divided by the samples mean EFT score, confirmed that significant differences exist between higher and lower level differentiating groups of addicts. These groups were found to differ in abstraction ability and probability of impairment as indicated by the Shipley scales. They were also found to differ significantly on MMPI clinical Scale 1, Scale 2, Scale 3, Scale 4, Scale 7, and Scale 8. Differences between these two addict groupings on their overall self-concept, as measured by the Total Positive Scale of the TSCS, amount of social interaction, as measured by the Social Interaction Index of
the FIRO-B, and verbal intelligence, as measured by the Total Verbal score of the Shipley, proved nonsignificant. Differences observed on MMPI Scale 5, Scale 6, Scale 9, and Scale 0 likewise proved non-significant.

Chapter Five presents a summary of this study, conclusions, and recommendations for future research.
Chapter Five
Summary, Conclusions and Recommendations

Introduction

This chapter is divided into three major sections. The first section presents a summary of the study. The second offers conclusions based on the findings of this research. Finally, recommendations for future research are presented.

Summary of the Study

This study was undertaken to examine the level of perceptual differentiation and its relations with other personality variables among a drug dependent population.

Both theory and research have related the cognitive-perceptual style of persons, specifically their level of perceptual differentiation, to psycho-social-physical-behavioral disorders commonly felt to be rooted in dependency conflicts. Likewise, it has been reported that an individual's level of perceptual differentiation is related to his self concept, interpersonal orientation, intelligence, and other personality characteristics.

In addition to examining the level of perceptual differentiation among the drug addicted sample utilized for this study, their self-concepts, interpersonal relations orientations, level of intellectual
functioning, other personality characteristics, and the interrelationships between these variables were explored.

The major limitation of the study was the restricted sample size which was available for this research. While this did not affect the validity of the findings, it did impose limitations on the types of statistical analyses which could be conducted on the data.

A review of research literature pertaining to the subject of perceptual differentiation and dependency rooted disorders and the relationship between perceptual differentiation, drug dependency, and other personality variables under consideration in this study was conducted. It was concluded from the review that populations exhibiting problems rooted in dependency conflicts, particularly substance dependent samples, consistently demonstrate less perceptual differentiation than normals. It was further suggested that both the self-concept and interpersonal relations orientation of addicted persons as a group are severely disturbed. Addict samples have also been consistent in demonstrating an abnormally high incidence of psychopathology.

The literature was not as clear in pointing to suspected relationships between individuals' levels of perceptual differentiation and their self-concept, interpersonal relations orientation, level of intelligence, and general personality characteristics. It was concluded, however, that cognitive impairment of organic origins is associated with decreased perceptual differentiation, and that females consistently demonstrate lower levels of differentiation for unknown reasons.
The specific sample selected for this research was comprised of 42 inpatient poly-drug abusing addicts in treatment at the VITA Residential Services Drug Treatment Program in Columbus, Ohio. All of the subjects were court mandated into treatment and voluntarily consented to participate in the study.

The variables under study, level of perceptual differentiation, self-concept, interpersonal relations orientation, intellectual ability, and other personality characteristics were operationally defined by the following respective psychometric instruments: the Embedded Figures Test (EFT), Tennessee Self Concept Scales (TSCS), Fundamental Interpersonal Relations Orientation—Behavior (FIRO-B), Shipley Institute of Living Scale, and the Minnesota Multiphasic Personality Inventory (MMPI). Each of the subjects was administered all of the research instruments by a doctoral level psychology intern under the supervision of a licensed psychologist.

The data were analyzed using one-way analysis of variance, correlational and multivariate techniques. A \( p < .05 \) was required for consideration of statistical significance.

The results of statistical analyses confirmed that significant differences exist between substance dependent males and their normal counterparts on level of perceptual differentiation. The differences observed between female addicts and normals came close, but failed to achieve statistical significance. The differences observed between addicts, grouped according to their primary drug of abuse type, on level of perceptual differentiation were not significant.

Examination of the mean profiles obtained by the addict sample on the research instruments indicated that, as a group, they possessed
a very low level of self-esteem. Their mean TSCS differed in the negative direction from that of the normative sample on virtually every scale. Their mean FIRO-B profiles suggested that, like methadone patients, the subjects in this sample prefer a lifestyle where interpersonal relationships are neither highly valued nor sought. It was indicated that they prefer rather solitary existences and seek to avoid interpersonal responsibilities. The Shipley suggested that the addict sample closely approximated the normal population in level of intellectual ability, in distribution of said ability, and similarly in terms of the likelihood of cognitive impairment being present. The mean MMPI profile obtained by the sample indicated that a considerable amount of psychopathology was likely present among the subjects.

Significant correlations were observed between addict EFT scores and numerous scales of the other research instruments. On the TSCS, five of the major subscales correlated significantly with the EFT: Identity, Behavior, Physical Self, Personal Self, and Family Self. Significant negative correlations were observed between EFT score and all of the "wanted" scales of the FIRO-B. All of the Shipley scales significantly correlated in a negative direction with EFT score, as did MMPI Scale F, Scale 1, Scale 2, Scale 3, Scale 4, Scale 6, Scale 7, Scale 8 and Scale 0.

These correlations suggest that the level of perceptual differentiation observed among individuals is related to their self-concept, interpersonal orientation, level of intelligence, and other personality variables. Specifically, higher levels of differentiation are associated with higher levels of self-esteem, a more outgoing social orientation, higher intelligence and a lower probability of cognitive
Impairment, and generally decreased levels of psychopathology. Lower levels of perceptual differentiation are associated with the counterparts of these attributes.

Multivariate analysis conducted on select variables between addicts grouped as higher and lower level differentiators confirmed that significant differences exist between these groups. While the groups did not differ significantly on the Total Positive Scale of the TSCS, the Social Interaction Index of the FIRO-B, or the Verbal Scale of the Shipley, they demonstrated significant differences on the Abstraction and CQ scales of the Shipley, and MMPI Scale 1, Scale 2, Scale 3, Scale 4, Scale 7 and Scale 8. All of these differences were in the directions which would be anticipated based on the correlations mentioned previously.

**Conclusions**

Since the mean level of perceptual differentiation exhibited by substance dependent males was significantly lower than that observed among their normal counterparts, and similar differences closely approaching significance were observed among females, it can be concluded that drug dependent persons are significantly less perceptually differentiating than normals. This finding that addicted persons tend to experience their world in a less articulated fashion might suggest that their response to counseling may differ from that of more perceptually articulated individuals, and that different approaches may prove more effective with them.

Since no significant differences were observed, in level of perceptual differentiation between addicts grouped by primary drug of
abuse type, it can be concluded that the type of substance chosen for abuse does not relate to this aspect of one's cognitive-perceptual functioning. This construct shows promise then, as comprising a component of the "dependent personality" for which researchers have been searching for so long.

It is concluded that while addicts consistently demonstrate poorer self-concepts than comparative normal samples, these differences are only marginally related to their level of perceptual differentiation. The manner of approach to the task of self-definition among addicts is not related to this aspect of their perceptual-cognitive style. These findings suggest that the search for the basis of this lack of self-esteem among addicts should pursue other directions, that less articulated perception/cognition does not necessarily result in decreased self-esteem.

It is concluded that the interpersonal relations orientation of poly-drug abusers in inpatient treatment is generally the same as that encountered among outpatient methadone treatment addicts, both being rather disturbed by conventional standards. The level of perceptual differentiation among addicts is only marginally related to their level of perceptual differentiation. These findings suggest that while disturbed relationships are common among addict subgroups, the cognitive-perceptual style of addicts is not sufficient to explain the basis of this problem. Research needs to be directed towards other aspects of addicts' personalities and behaviors in search for a better explanation for these observations.

It is concluded that higher levels of perceptual differentiation are associated with increased abstract reasoning ability. This
relationship may extend to other more diverse aspects of intelligence as well. Consistent with this, decreased perceptual differentiation is associated with cognitive impairment. These findings indicate that perceptual differentiation is not as free from the influence of intellectual ability as originally theorized, and thus might more accurately be considered an ability as opposed to a style.

Finally, it is concluded that a lower level of perceptual differentiation is associated with higher levels of psychopathology among addicts. The types of pathology referred to includes those associated with elevation of MMPI Scale 1, Scale 2, Scale 3, Scale 4, Scale 6, Scale 7, Scale 8 and Scale 0. Since the level of perceptual differentiation has been shown to be a stable personality variable, it may reflect a causal factor and/or predisposing factor in the development of certain psychological problems. Recognition and attendance to this aspect of client's psychological functioning by treatment personnel is thus warranted.

Recommendations for Future Research

It is recommended that research be conducted to explore the nature of the relationship between perceptual differentiation and other personality variables. Such variables should be selected on the basis of their potential for explaining the observed relationship between perceptual dependency and other psycho-social-physiological dependency based disorders.

It is recommended that longitudinal design studies be initiated in an effort to clarify the directional nature of the relationship which exists between perceptual and other dependencies. This is
especially important where interactions between personality and chemically/organically induced impairment may exist.

It is recommended that further research into the relationship between perceptual differentiation and responses to various forms of treatment be conducted.

Finally, it is recommended that research be undertaken to evaluate the reliability and validity of abbreviated forms of the EFT. If abbreviated forms of the EFT with acceptable psychometric qualities cannot be developed, research should be pursued with the portable rod-and-frame apparatus. The information obtained in the length of time required for administration, as well as the monotony of administering the present short form, for both the subject and the examiner, does not render it efficient for either clinical or research applications.
APPENDIX A
22. I am a moral failure

24. I am a morally weak person

38. I have a lot of self-control

40. I am a hateful person

42. I am losing my mind

56. I am an important person to my friends and family

58. I am not loved by my family

60. I feel that my family doesn’t trust me

74. I am popular with women

76. I am mad at the whole world

78. I am hard to be friendly with

92. Once in a while I think of things too bad to talk about

94. Sometimes, when I am not feeling well, I am cross

Responses:

Completely false

Mostly false

Partly false and partly true

Mostly true

Completely true

1

2

3

4

5
For each statement below, decide which of the following answers best applies to you. Place the number of the answer in the box at the left of the statement. Please be as honest as you can.

1. never  2. rarely  3. occasionally  4. sometimes  5. often  6. usually

☐ 1. I try to be with people.
☐ 2. I let other people decide what to do.
☐ 3. I join social groups.
☐ 4. I try to have close relationships with people.
☐ 5. I tend to join social organizations when I have an opportunity.
☐ 6. I let other people strongly influence my actions.
☐ 7. I try to be included in informal social activities.
☐ 8. I try to have close, personal relationships with people.

For each of the next group of statements, choose one of the following answers:

1. nobody  2. one or two  3. a few  4. some  5. many  6. most

people  people  people  people  people  people

☐ 17. I try to be friendly to people.
☐ 18. I let other people decide what to do.
☐ 19. My personal relations with people are cool and distant.
☐ 20. I let other people take charge of things.
☐ 21. I try to have close relationships with people.
☐ 22. I let other people strongly influence my actions.

☐ 23. I try to get close and personal with people.
☐ 24. I let other people control my actions.
☐ 25. I act cool and distant with people.
☐ 26. I am easily led by people.
☐ 27. I try to have close, personal relationships with people.
### Vocabulary

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<th>(12) FASCINATE</th>
<th>(13) INDICATE</th>
<th>(14) IGNORANT</th>
<th>(15) FORTIFY</th>
<th>(16) RENOWN</th>
<th>(17) NARRATE</th>
<th>(18) MASSIVE</th>
<th>(19) HILARITY</th>
<th>(20) SMIRCHED</th>
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### Abstraction

(14) Scotland landscape scapegoat __ __ __
(15) surgeon 1234567 snore 17835 rogue __ __
(16) tam tan rib rid rat raw hip __ __
(17) tar pitch throw saloon bar rod fee tip end plank __ __ __
(18) 3124 82 73 154 46 13 __
(19) lag leg pen pin big bog rob __ __
(20) two w four r one o three __
Sample MMPI Items

193. I do not have spells of hay fever or asthma. ........................................................
194. I have had attacks in which I could not control my movements or speech but in which I knew what was going on around me. ........................................................
195. I do not like everyone I know. .............................................................................
196. I like to visit places where I have never been before. ........................................
197. Someone has been trying to rob me. .................................................................
198. I daydream very little. .........................................................................................
199. Children should be taught all the main facts of sex. ........................................
200. There are persons who are trying to steal my thoughts and ideas. ....................
201. I wish I were not so shy. ......................................................................................
202. I believe I am a condemned person. ...................................................................
203. If I were a reporter I would very much like to report news of the theater. ....
204. I would like to be a journalist. ...........................................................................
205. At times it has been impossible for me to keep from stealing or shoplifting something. ........................................................
206. I am very religious (more than most people). .................................................
207. I enjoy many different kinds of play and recreation. ........................................
208. I like to flirt. ........................................................................................................
209. I believe my sins are unpardonable. .................................................................
210. Everything tastes the same. ..............................................................................
Table 7
Means, Standard Deviations, and Results of ANOVA's Comparing Addicts and Normals\textsuperscript{a} on the Self Concept Scales of the TSCS

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\textsuperscript{a}Fitts (1969).
*p < .01.
**p < .001.
Table 8
Means, Standard Deviations, and Results of ANOVA's Comparing Addicts and Normals on the Empirical Scales of the TSCS

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*p < .001.
### Table 9

Means, Standard Deviations, and Results of ANOVA's Comparing FIRO-B Scores of Inpatient (I.P.) and Methadone (Meth.) Drug Treatment Patients

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*Saxon et al. (1978).*
Table 10

Pearson Correlation Coefficients of Select Variables
Included in Table 3 MANOVA

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