# PERSONALITY AND LIFE HISTORY DIFFERENCES OF HEROIN ADDICTS ACCEPTED TO A DRUG FREE PROGRAM AND A METHADONE MAINTENANCE PROGRAM

by

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## Chapter 1

## INTRODUCTION

The extensive literature on drug addiction has focused primarily on the personalities of addicts and the evaluation of treatment programs, particularly the percentage of patients successfully rehabilitated. Little work has been done in ascertaining the suitability of addicts for different treatment programs.

Drug free programs were developed following World War II and continue to proliferate. Methadone maintenance was introduced in 1965 (Dole and Nyswander, 1965) as an alternative form of treatment for drug addiction when efforts in drug free programs seemed futile. Methadone maintenance became the treatment of choice for those addicts who were unsuccessful at achieving and maintaining a drug free state despite multiple treatment attempts. As a function of present federal regulations specifying the dangers and drawbacks of methadone, caution has arisen in its dispensation, limiting the use of this narcotic to failures of other programs. Addicts are first directed to drug free programs with methadone as the last resort.

Admission criteria in treatment programs are often idiosyncratic to the particular program - save for the consistency of federal regulations. Acceptance to a program is usually the joint decision of staff and patient. The implicit assumption underlying the use of methadone maintenance seems to be that

this treatment is appropriate for addicts who cannot control their addiction without a chemical aid. Brown et al (1972) found that staff and patients in treatment programs interpret this basic assumption similarly. When asked to describe an individual on methadone and one who is drug free, both staff and patients in methadone and drug free programs assumed that the drug free individual functions more maturely than the methadone maintained person. This finding suggests that the apparent level of maturity of the individual at the time he seeks treatment in large part determines the modality of treatment to which he will be directed. This study is an attempt to ascertain if criteria concerning rehabilitation potential affect admission procedures.

It is hypothesized that successful rehabilitation necessitates the existence of internal controls of behavior and that addicts differ in the extent to which such controls are available, with implication for course of treatment. Outcome studies have pointed to the importance of variables reflecting the existence of impulse control in determining successful rehabilitation. It is assumed that addicts accepted to drug free programs need better internal controls for successful abstinence than methadone maintenance candidates. This study proposes to assess whether addicts admitted to methadone and drug free programs do indeed differ in behavioral controls, as ascertained by projective and personality tests, motoric behavior, and historical data. It is hypothesized that if a consideration of rehabilitation potential is an integral part of admission procedures, then addicts admitted

to drug free programs should manifest a better capability to control their behavior than addicts accepted to methadone maintenance programs.

## HYPOTHESES

1. It is hypothesized that addicts in the drug free program are better able to control their behavior than addicts in the methadone maintenance program:

   a) It is hypothesized that addicts in the drug free program will have better impulse control than addicts in the methadone maintenance program as manifested by lower scores on MMPI scales 9, 4, Me, and a > 1.00 internalisation ratio (IR)[1]. While MMPI studies have traditionally shown addicts to score highly on scales 4 and 9, Monroe and Astin (1961), and Leibowitz (1967) found differences in the ability of addicts to remain abstinent, and to handle stress as a function of the extent of their identification with the antisocial drug culture.

   b) It is hypothesized that addicts in the drug free program will have longer prospective time spans in their TAT

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[1] Scale 4 reflects the extent of an individual's psychopathic orientation. The Me scale is an indicator of identification with heroin addicts who act out behaviorally with the use of heroin. Scale 9 manifests a person's energy level which can be used in the service of antisocial behavior. The IR ratio assesses impulsivity. High scores on the scales reveal tendencies toward impulsivity.

stories than addicts in the methadone maintenance program. Prospective time span has been shown to be related to the ability to defer gratification for future rewards (see page 21). Levine and Spivack (1959) have demonstrated that delinquent boys who displayed some ability to control behavior for future gratification had longer time spans than the group which did not manifest this delay ability.

e) It is hypothesized that addicts in the drug free program will have longer inhibition times on the motor inhibition test than addicts in the methadone maintenance program. Motoric control has been shown to be related to control of other behaviors (see pages 18-19). Erickson and Roberts (1971) found that a group of adolescent delinquents who evinced an ability to defer gratification were less impulsive on a motor task than the adolescents who could not postpone gratification.

d) It is hypothesized that addicts in the drug free program have maintained stable employment for longer periods of time than methadone maintained addicts. The ability to maintain employment for a period of time requires the necessity of tolerating present frustrations in view of future goals. The addicts who evince such a frustration tolerance have been found to have a greater probability of successful abstinence than those who cannot tolerate the frustrations inherent in daily employment (see page 27).

e) It is hypothesized that addicts in the drug free program have completed more years of education than methadone maintained addicts. The pursuance of scholastic achievements requires an ability to tolerate present frustrations in view of future rewards. Addicts who are able to remain in school for longer periods of time have been found to be successfully abstinent more often than the addicts who leave school prematurely (see page 27).

A confirmation of these hypotheses would make existing admission criteria more explicit and delineate more clearly the basis of current assumptions concerning the treatment of drug addiction.

## HEROIN AND METHADONE

Heroin is an addicting drug. It is a narcotic analgesic which was introduced into this country in 1898 as a nonaddicting cure for the opium habit (O'Donnell and Ball, 1966). Within a decade, the fallacy of this belief became evident. The likelihood of addiction depends on the dose, route of administration, frequency, and duration of use. Heroin is a short-acting drug which results in withdrawal symptoms of lacrimation, rhinorrhea, yawning, and symptoms reflecting a general irritability of the central nervous system if continued administration of the drug is prevented. The symptoms appear relatively quickly (8 - 12 hours), become intense in a short period of time (48 - 72 hours), and decline rapidly (7 - 10 days), (Jaffe, 1970). The repeated administration of the same dose causes a declining effect of the drug resulting in the need for an increase in dosage to obtain the original degree of effect.

Heroin is used by drug addicts to obtain central nervous system effects. It lessens anxiety, inhibits sex and hunger needs and relieves pain. The most desirable effect is the much lauded "high", a euphoric state described in terms of an orgasm in the abdominal region during which all problems are forgotten. "It is in the main, an enjoyment of a nirvana like state unprecedented and unenriched by the pleasure of getting there," (Chein et al, 1964, p. 232). The experience of euphoria is appreciated by the addict but only by a minority of experimental "normal" subjects (Chein et al, 1964; Felsinger, Lasagna, and Beecher, 1955).

Heroin is not an inherently attractive drug. The first experience is not necessarily pleasurable. The danger of addiction resides in the person, not in the drug (Chein et al, 1964; Jaffe, 1970; Felsinger, Lasagna, and Beecher, 1955; Zimmering et al, 1951).

Methadone, a synthetic analgesic developed in Germany during World War II is also an addicting drug which was introduced by Vincent P. Dole and Marie Nyswander in 1965 as a cure for the ravages of heroin addiction in view of its cross tolerance effects. Methadone can also be taken via several routes of administration but it is most effective as a treatment modality when ingested orally. It is a long-acting drug with a 24 hour duration of action which prevents the onset of withdrawal symptoms for longer periods of time than heroin. Withdrawal is less severe than heroin and developes more slowly beginning on the third day and increasing in intensity until the sixth or ninth day. The symptoms decline gradually and disappear within two weeks. Functionally, methadone is used to prevent heroin withdrawal, prevent "drug hunger," and block the euphoric effect of heroin. At lower doses of 50 mg or less, the latter effect is not achieved (Ford Foundation, 1972). The success rates for addicts in low dosage and high dosage programs are the same for those remaining in treatment for more than six months (Ford Foundation, 1972). While pharmacologically, the withdrawal syndrome as depicted by authorities is less painful than heroin withdrawal, in reality, withdrawal from methadone is a very stressful experience due to the dilution of heroin obtained in the streets in comparison

with the purity of methadone in treatment programs (observation on a methadone maintenance ward). In view of the dangers inherent in the use of methadone underlined in federal regulations, it would appear that a drug free state would be the goal of choice for drug addicts.

## TREATMENT PROGRAMS

The two major types of treatment programs available to heroin addicts are drug free and methadone maintenance programs.

### Drug Free Programs

Drug free programs were established following World War II when the addiction problem became conspicuous. Inpatients are accepted on the basis of a voluntary decision (Gamso, 1962) or compulsory committment (Hunt and Odoroff, 1962; Vaillant, 1966). Admission criteria are usually specific to the program and often subjective. Such programs range from a duration of two to six months with follow-up arrangements (Freedman et al, 1963; Gamso, 1962; Knight and Prout, 1951; Lewis and Osberg, 1958; St. Pierre, 1969). In community based settings, the programs offer up to two years of inpatient treatment (Yablonsky, 1965). Most drug free programs consist of an initial methadone detoxification period of one to two weeks, some form of psychological treatment, occupational therapy, ward meetings, social casework, and graduated home visits especially at the termination of treatment.

Therapeutic communities usually have three phases: a testing for admission during which the patient must display motivation for change; a treatment phase comprising of a rigid system of rewards and punishments whereby the patient begins at the bottom with little freedom or privilege and acquires a higher status through change; and a reentry phase during which the resident begins to practice his newly incorporated behaviors in the community (Ford Foundation, 1972; Yablonsky, 1965). The focus is on pointing out to the addict his immaturity and need to learn responsible and stable behavior. As a resident reaches the final stage, he is often incorporated into the structure as a leader vested with authority and prestige.

The program from which subjects in this study have been selected is essentially similar to the therapeutic communities. Acceptance is restricted to veterans who have no bailable felony charge pending. Patients are admitted voluntarily or under a court injunction. The program is available for drug abusers of a variety of drugs including barbiturates, amphetamines, and heroin. Psychotic individuals are also accepted although their capacity for change may be more limited. Admission is also determined by self-selection on the part of the patients.

The program consists of two stages: a ten day detoxification period on a locked ward following which the addict is interviewed for acceptance to the unlocked therapeutic community or is referred elsewhere. The screening procedure assesses the addict's motivation to stop using drugs, his capacity for change, and his willingness to invest himself emotionally in the community. During

the detoxification period, psychological consultation and "rap" sessions with senior members of the community are available. The community is a hierarchical organization with much responsibility and authority vested in the patients. Peer pressure is an important lever to eventuate change. The focus is on developing mature and responsible behavior with the help of a structured environment, group, individual, family therapy, and task oriented planning sessions. The progress of the patient is closely observed. The duration of the program is approximately three months with follow-up services available on an outpatient basis.

Evaluation of drug free programs is equivocal. Some programs purport to have as high as 75% success with those who remain in treatment. The dropout rate in the first two months is about 50% (Ford Foundation, 1972). Others state that over 90% of discharged patients relapse at least once (Duvall, Locke, and Brill, 1963; Hunt and Odoroff, 1962; Vaillant, 1966). Rosenberg, Davidson, and Patch (1972) report that when their patients were offered detoxification as the goal, the dropout rate increased to about 40% per month as opposed to 10% when methadone maintenance was the treatment. Thus, fewer addicts seem to be able to tolerate the demands of a drug free state.

## Methadone Maintenance Programs

Methadone maintenance was introduced by Dole and Nyswander (1965) on the assumption that the use of narcotics resulted in a metabolic alteration in the body which precludes an eventual drug

free state. Inpatient methadone programs are usually comprised of a six week hospital stay during which stabilization on methadone is achieved (Dole and Nyswander, 1965; Perkins and Bloch, 1970). During this period, a social history is taken, consultations with various medical, psychological, and vocational services are arranged, and urine specimens are obtained. Most programs provide follow-up services on an outpatient basis. Admission procedures vary within the flexibility allowed by federal regulations which state that a candidate for methadone must be 18 years of age, must have a minimum heroin addiction history of two years, and must have had two prior unsuccessful attempts at detoxification. The maximum dose allowed is 100 mg/day. After two years of maintenance on methadone, the progress of each addict must be evaluated.

The methadone program from which subjects in this study were selected differs in several respects from other programs. It consists of a locked ward and provides inpatient treatment for 6 - 8 weeks. Veterans are accepted on a voluntary basis or under a court injunction. During the first week of treatment, patients are evaluated and a decision is made whether to accept the patient or refer him elsewhere. The patient is kept on a low dose of methadone pending this assessment. Care is taken to screen psychotic patients and multiple drug abusers who are poor candidates for methadone treatment. Admission is also determined by self-selection on the part of the patients. Stabilization on methadone is achieved during a 4 - 6 week period. For purposes of this study, patients

will receive increases of methadone during the first week and will be maintained on this stable dose for ten days until testing can be accomplished. Throughout their stay, patients participate in daily activities and therapeutic groups similar to those of other programs as a means to learn and rehearse more mature behavior. Follow-up services are available on an outpatient basis.

Reported success rates for active patients in methadone programs are high, from 66-85% based on employment rates, arrest records, and use of opiates (Brill, 1968; Dole and Nyswander, 1966; Gearing, 1970). Gearing (1970) found that for men, the probability of remaining on a methadone maintenance program for twelve months was 86% and for twenty-four months, it was 75%. Rosenberg, Davidson, and Patch (1972) however point out that under more liberal admission policies, success rates are lower. Adherents of such programs compare their rate of success with the high drop-out rate and failure record of drug free communities.

## Conclusion

No one treatment modality is a panacea for drug addiction. Methadone maintenance has important drawbacks recognized by the federal government. Guidelines have been established limiting the duration, dosage, and age requirements for the induction on methadone (Federal Register, 1972). Among the stipulations are two unsuccessful detoxification attempts. Increasingly, incidents of multiple abuse of drugs while on methadone have been reported (Bazell, 1973; Brill, 1968; Dobbs, 1971) in contrast to the flawless

record originally noted by Dole and Nyswander (1965). Drug free communities also face considerable challenges, especially the charge that reintegration of their successful graduates is not into the community but into the therapeutic program as a leader and model for other addicts.

Both types of programs for drug addicts have their successes and failures reflecting diverse responses to treatment. Recognition of the need for differential treatment modalities to accomodate different addicts has been voiced by several researchers. Brill (1968) believes that addicts differ in the problems which they have and in their readiness for help. Freedman (1966) emphasizes the variability among addicts in terms of social, economic, and educational levels and in their personality and character structures which necessitates disparate forms of treatment. Leibowitz (1967) found differences in addicts in terms of impulse control, and in their responses to stress, a finding which should be considered in determining the appropriateness of treatment. Brill (1968) suggests that criteria could be established to determine the appropriate modality of treatment based on individual, social, psychological, and addiction history. The delineation and validation of such criteria is the critical and difficult task. The variability in success rates in programs may be partly due to indiscriminate admission procedures. Blachly (1961) emphasized the need for objective criteria in his study which showed that the physician's predictions of relapse and recovery of patients had no relation to the actual outcome. The order of priority thus

demands that appropriate criteria be outlined for determining which addict can best profit from a particular type of program. It is believed that criteria for programs should consider the addict's ability to deal with the requirements of the program, and its goals. The drug free program provides stressful frustrations for the addict to deal with, followed by the requirement that the addict remain abstinent using his own resources. The methadone maintenance program provides the addict with a chemical support with the requirement that the abuse of this drug should not occur. It is evident that the task facing the drug free individual is more difficult. It is assumed that to master such a task without chemical aids, the addict needs to have more stable ego controls over behavior available among his resources than the methadone maintenance candidate. This study seeks to determine if such an assumption is verified, by ascertaining the admission criteria in two drug programs.

## PERSONALITY OF THE ADDICT

Addicts have been described in the psychoanalytic literature as individuals whose psychosexual development has been arrested or has regressed to the oral stage (Fenichel, 1945; Isbell, 1955; Wikler and Rasor, 1953). They are considered "childishly immature, full of demands, empty of offering," (Mills, 1965, p. 22). MMPI profiles reflect psychopathic like personalities similar to those of delinquents, people motivated by immature drives for immediate goals, and inclined toward impulsive action to reach them (Gilbert

and Lombardi, 1967; Lombardi, O'Brien and Isele, 1968; Hill, Haertzen and Blaser, 1960). Writers depict addicts as people who want immediate gratification and who are unable to act in terms of long range goals which might conjure up visions of future gratifications. They are described as living in the present with little conception of possibilities in the future (Nyswander, 1956; St. Pierre, 1969; Wakefield, 1963). The ordinary delays and stresses of living are said to be intolerable to addicts. To wait or to postpone appears to be beyond the realm of their capabilities (Freedman and Sharoff, 1965; Raskin et al, 1957). Experience with addicts has shown them to have a low frustration tolerance, to be intolerant of anxiety, and to avoid anxiety and tension through impulsive action (Chein et al, 1964; St. Pierre, 1969; Vaillant, 1966).

The family configuration which produces this serious arrest in development in male addicts has been described as consisting of an inconsistently overindulgent and rejecting mother concommitant with a passive or absent father (Gerard and Kornetsky, 1954; Sabbath, 1964; Zimmering et al, 1951). The incidence of broken homes is high (Chein et al, 1964; Vaillant, 1966). In such an environment, psychoanalytic theory postulates that the child never learns that all of his wishes cannot be fulfilled in reality and regards others in terms of self-gratification. Oral cravings become paramount. The child is infantalised (Wikler and Rasor, 1953). In view of the stress on maternal overprotection in the literature, it is interesting that Vaillant (1966) found a

predominance of youngest sons in his sample of 100 addicts from Lexington Hospital, significant at the p = .01 level. He also found that 72% lived with their mother at the age of 22 and that 47% continued to live with a female relative after the age of 30. Chein et al (1964) hypothesized and found that development within such a family structure is conducive to weak ego functioning. Reality testing, delay, acceptance of frustration, and future planning fail to emerge. Torda (1968) found that addicts in her sample were even fed before they were hungry thus discouraging activity or the need to develop skills in the child. With such a developmental history, it is not surprising that the addict is unable to maintain consistent functioning in any area of life since he has never learned to master the normal accompanying stresses.

Psychoanalytic formulations concerning drug addicts are primarily based on case study material which is difficult to evaluate empirically. Similar descriptions of the characteristics of drug addicts have been reported based on experience with drug addict patients and observation of their behavior. Whether the developmental psychoanalytic concept of drug addiction is correct or not is speculative. Several comparisons of drug addicts and non-addict controls point to significant differences in developmental and family history between the two groups which clarify the evolution of the observed characteristics of drug addicts (Chein et al, 1964; Gerard and Kornetsky, 1955; Torda, 1968; Zimmering et al, 1951). The lack of stringent controls in most empirical studies of

drug addicts however is salient.

## IMPULSE CONTROL

### Development of Impulse Control

Impulse control is a developmental process enforced by reality demands. As a result of normal frustrations, the infant's tendency to respond with a motor discharge to immediate stimuli is transformed and converted into action based on a consideration of reality (Friedlander, 1949; Grossbard, 1962; Singer, 1955). In psychoanalytic terminology, the change is due to the development of the secondary process which is central to the delay of gratification. Freud (1953) conceptualized that the delay of gratification consists of motor inhibition which is closely related to thinking. He stated, "Restraint upon motor discharge (upon action), which then became necessary, was provided by means of the process of thinking which was developed from the presentation of ideas. Thinking was endowed with characteristics which made it possible for the mental apparatus to tolerate an increased tension of stimulus while the process of discharge was postponed. It is essentially an experimental kind of acting, accompanied by displacement of relatively small quantities of cathexis together with less expenditure (discharge of them)" (Freud, 1953, p. 221). Rappaport (1953) further expanded Freud's theory that the advent of the secondary process is crucial in supporting increased delay of gratification. He postulated that the secondary process consists of experimental action in thought whereby alternatives to

action are considered. With increasing age, ideational and symbolical controls are developed becoming partial substitutes for direct impulsive action and serving as a means of discharging tension (Grossbard, 1962). The development of these ego controls progresses by the internalization of parental controls and identification with parental figures. Developmental psychologists have demonstrated experimentally that thought involves the gradual interiorization of motor responses or speech which are inhibited due to social restraints (Singer, 1955). The type of people available for identification are important in determining whether a child will be able to internalize controls (Hartmann, 1964; Singer, 1955). Overindulgent or inconsistent parenting seriously impairs future ability to defer gratification in the light of reality requirements (Chein et al, 1964; Redl and Wineman, 1951). Chein et al (1964) found that in over 70% of families of juvenile addicts, the standards of conduct of the parents were vague and inconsistent fostering defective ego functioning.

## Motor Inhibition

When cognitive mechanisms such as language, thought and fantasy which provide means of binding increasing tension are unavailable, an individual acts out his impulses and is unable to delay discharge reflecting deficits in ego development (Chein et al, 1964; Grossbard, 1962). Experimental evidence supports the theoretical assumption that motor inhibition develops with age and that developmentally regressed and disturbed individuals

are less able to inhibit motor reactions. On a drawing task, Davids (1969) found that 11 year olds can better inhibit motor reactions than 7 or 9 year olds. He also found that normal children have significantly better motoric control than emotionally disturbed children of the same age. In a comparison of delinquent and nondelinquent adolescent boys, Doctor and Winder (1954) found that nondelinquent individuals are better able to inhibit motor responses than their delinquent counterparts. In a group of adolescent delinquents, Erickson and Roberts (1971) showed that those who behaviorally manifested an ability to defer gratification were also less impulsive on a motor task.

The effect of intelligence on motor inhibition and cognitive processes is unclear. In a factor analytic study using schizophrenic males, Singer, Wilensky and McCraven (1956) found no relationship between IQ and fantasy tendencies or motor inhibition. However, Levine et al (1959) found that IQ significantly differentiated good motor inhibitors from poor ones within a sample of emotionally disturbed adolescents. Using a larger sample of similar subjects, Spivak, Levine and Sprigle (1959) found significant correlations between IQ and fantasy tendencies as measured by the Rorschach Human Movement response.

The Rorschach Human Movement response (M) has been investigated to examine Freud's (1953) postulated relationship between thought and motor inhibition. Singer and Herman (1954) cite a number of studies which relate the M response to fantasy processes and to motor inhibition. Singer and Spohn (1954) found

that male schizophrenics who had more than one M response in their Rorschach protocol showed significantly greater motor inhibition on a writing task than those with one or less M response. Those with a greater ability to inhibit motor responses also manifested an M sum C profile reflecting introspective rather than acting out tendencies. In their study, Singer and Herman (1954) replicated previous results of a positive relationship between M and motor inhibition and also found significant correlations between these two measures and a measure of fantasy tendency, the transcendence index developed by Weisskopf (1950). Addicts and individuals who react euphorically to the initial introduction of heroin have been found to have M < sum C profiles with generally few M responses manifesting a shallow fantasy life, and a tendency to be demanding, impatient of delay, and desirous of immediate gratification (Gerard and Kornetsky, 1955; Felsinger, Lasagna, and Beecher, 1955).

## Temporal Experience

The ability to postpone immediate gratification substituting the reality principle for pleasures of the moment is closely related to an ability to transcend immediate spatial and temporal boundaries so that the consequences of immediate gratification and possibilities of future rewards can be considered. Frustrations due to the renunciation of immediate pleasure are tolerated by the mature ego by invoking former gratification in the past. When these did not occur or cannot be recalled, there is an

inability to tolerate deprivation which is perceived as a trauma (Redl and Wineman, 1951; Savitt, 1963).

The experience of time is crucial in the development of adequate controls. To delay responses, one must be able to project oneself out of the present to recall past experiences and conjure up future expectations. The addict cannot see into the future. "He cannot take present deprivation in the hope of building toward security in the indefinite future but must continually bolster his self-esteem with immediate proof of success" (Nyswander, 1956).

Disturbances in time perspective have been described in the literature in groups which lack impulse control. Delinquents are invariably cited as unable to perceive themselves in the past or future (Chein et al, 1964; Grossbard, 1962; Redl and Wineman, 1951). Delinquents (Barndt and Johnson, 1955, Davids, Kidder, and Reich, 1962) and prisoners (Siegman, 1961) have also been found to have shorter time spans or consideration of the past and future in stories, than normals of the same age. Adolescent delinquents have been found to have time spans similar to 11 year old normal children and emotionally disturbed adolescents (Davids, Kidder, and Reich, 1962). Levine and Spivack (1959) even demonstrated that a delinquent group of boys who displayed some ability to control behavior for delayed gratification had longer future projections than delinquents who did not evince this delay ability.

It has been suggested and contested that temporal experience is affected by intelligence and social class. Levine et al (1959)

found that IQ differentiates emotionally disturbed adolescents with longer future time extensions from those with shorter projections into the future. With a similar sample, Spivack, Levine, and Sprigle (1959) also found significant correlations of IQ and temporal experience using the measure of time estimation. Goz (1968) found that future time span is not related to intelligence as measured by the Scholastic Aptitude test scores. LeShan (1952) found that social class affects time orientation, however upon replication of this experiment, Greene and Roberts (1961) failed to duplicate these results. Similarly, Brandenberg (1971) and Judson and Tuttle (1966) found no relationship between measures of temporal experience and social class. Controlling for social class, Barndt and Johnson (1955) still found differences in temporal experience.

Several studies using the measure of time span in Thematic Apperception Test (TAT) stories point to the relationship of projections into the future and achievement. Ricks, Umbarger, and Mack (1964) found that delinquent boys who participated in an eleven month vocationally oriented psychotherapy significantly more frequently increased the prospective (future-oriented) time span in their stories after treatment in comparison with untreated controls. Using college students, Goz (1968) found a positive correlation between the length of future time span and academic achievement. Brandenberg (1971) cites studies on academic achievement which report that items regarding attitude toward the future and delay of gratification discriminate between under and over achievers.

Epley and Ricks (1963) found that individuals with long future time spans made definite commitments to clear goals in the future.

The achievement of a goal requires projection into the future. It demands the functional subsidiation of momentary impulses and immediate pleasure in the interest of elected goals in the future. Attainment of future goals involves planning or rehearsal for action (Hartmann, 1964; Rappaport, 1953). An adequate ego functions to insure motor control and directed, purposeful action. Rational action involves the consideration of the future and the correct relating of means and ends to each other (Hartmann, 1964). Hartmann (1964) emphasizes that as long as a person values momentary pleasure more highly than future goals, rational planning of his actions will be inadequate or impossible. In his study of juvenile addicts, Chein et al (1964) found support for Hartmann's conceptualizations. He found that addicts relative to nonusing controls spent their time aimlessly, and were present oriented, feeling that they should get as much fun as they could in the present and let the future take care of itself. This life style and interest pattern was even characteristic of them during the year prior to the onset of their drug use. Only one-third of the addicts had plans to follow a specific occupation and even these plans were vague and dependent on uncontrollable events. Most wanted things in the immediate future. In contrast, the adolescent controls were in school, and had reasonably realistic goals such as short range occupational plans. Among 32 adolescent addicts, Gerard and Kornetsky (1955)

noted that the families of the addicts had high unrealistic aspirations for their children without teaching them planning skills. Chein et al (1964) reports a similar phenomenon. Plans were made in the families of the addicts in his sample with no discussion of realistic means of attaining them.

### Conclusion

Addicts rarely learn the normal adaptations to reality which interfere with the immediate attainment of pleasure but which result in the development of behavioral controls, foresight, and planning skills. Rather, they turn to narcotics to achieve pleasure and a semblance of control. "The magic of narcotic drugs lies in their direct biochemical action on the brain, in their bypassing the prerequisite adaptive effort and performance...the drug's effect...displaces more and more the ordinary pursuits and rewards of normal life. This substitution involves...the ushering in of a delusion which, uprooting the patient's reason, foresight, and judgment, sanctions his craving." (Rado, 1957, p. 167). This level of functioning is seen in other areas of life as well. St. Pierre (1969) found that addicts set high goals for themselves wanting instant success and high paying jobs with little effort expended.

## SIGNIFICANCE OF IMPULSE CONTROL IN ABSTINENCE

The stated lack of internal controls enabling delay of gratification in addicts has led some authorities to advocate the use of external controls in treatment with the ultimate goal of internalization

of controls. "The goal of the New York State Parole Narcotic Program is the internalization of 'external' controls by the parolee-addict...The external controls are merely a crutch which are preemptorily removed at the termination of the sentence. Hopefully, the ego strength developed and strengthened during the supervisory period will have been substantially internalized to sustain the addict in the postparole period" (Diskind and Klonsky, 1964, p. 36).

Outcome studies have supported the efficacy of this form of treatment. A twelve year follow-up study of New York City addicts treated in Lexington Hospital revealed that 67% of cases who had imprisonment and parole resulted in abstinence of one year or more in comparison with 4% of abstinent cases who had imprisonment or voluntary hospitalization. Of those who succeeded on parole, 90% had failed in other programs - 80% after hospitalization and 60% after short or long imprisonment (Vaillant and Rasor, 1966). In a three year follow-up study, Diskind and Klonsky (1964) similarly reported that those addicts who were under supervision the longest had the best abstinence records while those with less supervision were more prone to relapse.

Outcome studies point to the importance of investigating impulse control in determining rehabilitation potential and its sequel, choice of treatment. Some addicts become abstinent with little treatment (Vaillant, 1966). Some addicts have controlled or limited habits (Chein et al, 1964; Scher, 1966). Support has also been found for Winick's "maturing out of the addiction" hypothesis which

emphasizes the significance of age in addiction and abstinence (Winick, 1962). Vaillant (1966) found that abstinence increases linearly with age, offering the interpretation that "addicts improve when they master their instincts, not when their instincts 'burn out'" (Vaillant, 1966, p. 583). Duvall, Locke, and Brill (1963) and Hunt and Odoroff (1962) found that addicts over 30 years of age become abstinent significantly more often than those under 30 years old. In reviewing Winick's hypothesis, Ball and Snarr (1969) concluded that the maturation hypothesis is true for only about one-third of addicts in comparison with the figure of 66% quoted by Winick (1962). The differential conclusions could be partly due to the smaller and more restricted sample used by Ball and Snarr. Based on a review of other follow-up studies, Ball and Snarr (1969) report the range of abstinent cases as a function of age to be 20-40%.

The factors which have been found to determine abstinence invariably point to the existence of developed controls of behavior. The age of onset of addiction appears to have relevance to abstinence (Bowden and Langenauer, 1972; Chein et al, 1964; Vaillant, 1966; Zahn and Ball, 1972). Those who fail to achieve abstinence begin to use drugs earlier than those who succeed, revealing an early disturbance in ego functioning. The length of addiction before hospitalization was found to be significant by Chambers, Taylor and Moffett (1972) and Zahn and Ball (1972) but insignificant in Vaillant's sample (1966). One can hypothesize that the longer the addict is involved in the drug life, the more resistant he will be to treatment. Monroe and Astin (1961) found that addicts who are highly

identified with the drug subculture have been abusing drugs longer and relapse more readily than low identifiers. The presence of antisocial behavior prior to drug use is similarly a poor prognostic sign (Bess, Janus, and Rifkin, 1972). It is interesting to note the close resemblance in MMPI profiles of addicts and delinquents (Hill, Haertzen, and Glaser, 1960). Criminal involvement has also been cited in distinguishing successes and failures in abstinence, (Chambers, Taylor, and Moffett, 1972; Perkins and Bloch, 1970; Vaillant, 1966; Zahn and Ball, 1972) with a high arrest record pointing to continued drug use. While Vaillant (1966) found that the type of criminal behavior was unimportant, Zahn and Ball (1972) found that it is significant. Chambers, Taylor, and Moffett (1972) report that those who continued criminal involvement while on a methadone maintenance program abused drugs more often than the patients who did not. Unsurprisingly, educational accomplishments (Bowden and Langenauer, 1972; Chein et al, 1964) and employment history (Chambers, Taylor and Moffett, 1972; Perkins and Bloch, 1970; Rosenberg, Davidson and Patch, 1972; Zahn and Ball, 1972) have been found to be of utmost significance in the prediction of successful abstinence. The task of maintaining stable employment or of achieving an educational goal such as a high school diploma requires frustration tolerance, an awareness of the future which makes present tasks tolerable and meaningful, and an ability to postpone gratification in view of a future goal. A tendency to react to immediate needs or momentary whims precludes success in treatment sometimes because the patient leaves treatment before he can even be helped. Raskin, Petty, and Warren (1957) concluded

that voluntary treatment is ineffective because it leads to an early "flight into health" when the addict cannot tolerate the frustrations of confinement or when he feels better and promptly forgets about previous unsolved problems. The duration of treatment has been found to be important by Knight and Prout (1951), Perkins and Bloch (1970), and Vaillant (1966) with longer periods of inpatient treatment being more effective than short hospitalizations.

To ascertain success in treatment, some methadone maintenance programs have used the crude measure of completion of an inpatient program or remaining active on an outpatient program. Knowles, Lahiri, and Anderson (1970) found that age significantly differentiated those who finished the inpatient program as opposed to those who did not, with patients over 25 years of age completing the program more often than those under 25 years old. While not statistically significant, the authors found that race, employment history, and delinquency history discriminated those who completed the program from those who did not. Blacks, patients with a greater than two year employment history, and patients without a delinquency history tended to complete the program more often than whites, patients with less than two years of employment, and patients with delinquent records. Dale and Dale (1973) on the other hand, found that a significantly lower percentage of blacks than whites or Puerto Ricans perceived methadone maintenance as a long term treatment, and that blacks maintained on methadone abused other drugs more often than the other two ethnic groups. Rosenberg, Davidson, and Patch (1972) found that whether a patient is employed at admission

is important in predicting whether he will remain in the program. Age also differentiated patients who were inactive on an out-patient methadone maintenance program after two months in Dale and Dale's (1973) sample of 814 patients with younger patients dropping out of the program more often. Rosenberg, Davidson, and Patch (1972) found that patients who were on a higher dose of methadone tended to remain in the program longer. Jaffe (1970) found a high drop-out rate in both high and low dose groups during the first fourteen weeks of treatment which decreased over time. He found however, that the high dose group abused illegal narcotic drugs less often than the low dose group.

While most of the above research has been done in drug free programs, a few studies done in methadone maintenance programs suggest that some of the same factors may be important in determining success in these programs as in the drug free programs. Addicts maintained on methadone must exercise some control over their addiction. They must be reliable, withstand some of the frustrations of daily methadone pick-up, and cease to abuse other drugs. Their controls however, need not be as well developed as addicts who aim for abstinence without the aid of a chemical agent, a task which demands greater resources of the addict.

## CONCLUSION

Every addict needs some support and control when he is beginning treatment for his addiction, especially in providing alternative sources of gratification to narcotics. In determining

the medium in which such a goal is to be accomplished, the capability of the addict to master stress, the extent to which controls over his behavior are available to him must be assessed. Where these controls are lacking or are minimal, chemotherapy is necessary until they can be attained. When the controls exist, drug free treatment is appropriate.

Outcome studies, implicit assumptions underlying guidelines for methadone dispensation, and staff-patient interpretations of these assumptions (Brown et al, 1972) suggest that a recognition of the importance of impulse control in determining the choice of treatment exists. The relation between this realization and actual admission procedures is another focus of this study.

# Chapter 2

## METHOD

### Subjects

Sixty male drug addicts with heroin as the main drug of addiction who were inpatients at the East Orange Veterans Administration Hospital Drug Dependency Ward (methadone maintenance), and at the Drug Abuse Treatment Program in the Veterans Administration Hospital in Coatesville, Pennsylvania (drug free) served as subjects for this study. Thirty subjects were tested in each program in the order of their admission beginning approximately July 15, 1973, and until the maximum of 30 subjects in each facility was reached. No restriction was made in terms of age, social class, IQ, or ethnic background, however this information was collected in order to control for any effect which these variables may have on the variables involving impulse control. The only requirement was that heroin be the main drug of abuse. Although the samples were unselected except for the timing of admission, none of the subjects was overtly psychotic.

### Procedure

The data were collected in two hour to hour and a half sessions during the week comprising the 11th to 18th day of the subject's hospital stay. During the first seven days of treatment, subjects in the drug free center routinely undergo detoxification from

heroin and then are given three more days in which to adjust to their drug free state. In order to equalise the treatment procedure in this study, subjects on the methadone ward were stabilised on a low dose of methadone during the first seven days also and held on that dose for ten days until testing could be accomplished. During the three days following stabilization, the patients were given the time to adjust to their methadone dose. The three day period is usually ample time to achieve the feeling of physical normality in both groups of patients. The week following the ten day drug treatment was chosen for testing to minimise the effects on the testing results of the treatment, and effects due to increases or decreases of drugs in the body.

The subjects in each program were advised that this study is concerned with individual differences among addicts and that their cooperation is appreciated. Participation in the study was voluntary. Despite the fact that the author was a staff member on the methadone maintenance ward, subjects in this program were less cooperative in general than the patients in the drug free community. This may be due to the presence of other on-going research in the drug free facility so that another request to participate in testing is simply considered a customary occurrence. Also, residents in the drug free community are taught to obey in silence, which is not the case in the methadone maintenance program.

The subjects in the drug free community were assiduous in completing the instructions. In the methadone maintenance program, a few patients manifested at least initial resistance to participation

in the study but often became involved when the nature of the tests was described. Two patients in the methadone program, one white and one black, refused to participate altogether.

The author administered all of the tests herself except for the Shipley Institute of Living Scale and the MMPI for the drug free group since these tests are administered routinely in the Coatesville Hospital during the first week following the ten day detoxification period. Due to scheduling difficulties, the tests could not be administered on the same days of the week for all of the patients. Therefore, the days of the testing sessions and order in which the two testing batteries were given were randomized as much as possible, some patients receiving the Shipley and MMPI tests first and others beginning with the TAT, Motor Inhibition test, and the Questionnaire. The randomization of the days for testing was determined solely by the availability of both tester and subject to meet for a testing session.

The content of the two testing sessions is given below. The tests were administered in the order in which they are presented:

Testing Battery 1

1. Thematic Apperception Test (TAT)

The TAT test was chosen for this study to include a projective technique which had previously been used in assessing delaying capacity. Cards 1, 2, 4, 6BM, 7BM, and 13MF were selected partly because they had previously been used in a study assessing the ability to transcend the present and look toward the future (Singer,

Wilensky, and McCraven, 1956), and partly because they are relevant to the subjects of this study in terms of providing meaningful stimuli to ascertain their dreams, thoughts, and interpersonal relations with family, men, and women. The cards were administered with the following standard directions: "I am going to show you some pictures, one at a time, and your task is to make up a story about each one using your imagination. Write down what led up to the event shown in the picture, what happened before; describe what is happening at the moment, what the people are doing, feeling, and thinking; and then what will the outcome be, the ending, what is going to happen. Take no more than about 5 minutes for each picture." While the five minute time limit was not adhered to rigidly, most subjects did not require additional time. The prospective time spans of the two subjects who noticeably spent an excessive amount of time on each story (approximately 20 minutes per picture) did not differ from the time span scores of subjects who followed the instructions ($\bar{x}$ = 3.9 and 4.8 for the long stories (subjects 2 and 12, respectively); and 4.0 and 5.2 for the short stories (subjects 1 and 51, respectively)). Six subjects, three from each group, narrated the stories to the author because of difficulties in writing. Qualitatively, the stories ranged from ungrammatical, poorly constructed stories to well-organized, literate ones. The TAT time span measure however, was not correlated significantly with either educational level or IQ. The first two stories were checked to insure that the subject was following the instructions. On the basis of each story, a measure of prospective

time span was obtained, and an average TAT prospective time span was computed over all of the subject's scorable stories.

a) Time Span:

The prospective time span is the length of time from the present, usually the event in the picture to the end. The time span measure was obtained using the scoring system developed by Epley and Ricks (1963) and further validated by Goz (1968), (see Appendix). Following Epley and Ricks (1963) "a story was scored for time span only if it portrayed a hero or group who performed realistic acts...stories in which the hero planned or fantasied some extended action were scored for the time of the action contemplated...the scoring depended in part on specifically indicated periods of time and in part on common knowledge of the time usually taken for actions. Fairy tale ends, e.g. 'they lived happily ever after' were not scored for prospection since they indicated no differentiated and realistic awareness of the future" (Epley and Ricks, 1963, p. 52).

All stories were scored independently by two judges in order to establish the reliability of scoring. The judges hold graduate degrees in non-related areas to preclude any knowledge of the test or measures involved. Both judges were unaware of the content or purpose of the study. With 23 Harvard college students as subjects, Epley and Ricks (1963) found rank order correlations between the two judges to be .66. With 25 college students, Goz (1968) found the scorer reliability to range from .58 to .92 with a median of .84. Test-retest reliability with a one year interval was .46 for

prospective time span in Epley and Ricks (1963). This low reliability was believed to support the stability of time span of individuals since it was obtained one year apart, by different examiners, and with two disparate sets of pictures. Over a two week interval with two samples of N = 21, Gos (1968) found the reliability coefficient to be .68 and .82.

While the test-retest reliabilities reported with this measure have been low, albeit significant, statistically significant differences in time perspective among individuals varying in impulse control ability found in the literature has prompted the author to use this measure with full awareness of the lack of sound reliability data proving that this measure is stable over time.

2. Motor Inhibition Test

This technique originally derived from the Downey-Will Temperament Scale has been used in previous studies of impulse control (Davids, 1969; Siegman, 1961). The subject is asked to write the phrase "New Jersey Chamber of Commerce" as slowly as possible without stopping the movement of the pencil. He first writes the phrase at his normal speed to establish his habitual speed of writing. The measure used was the difference in time in seconds between the original trial at normal tempo and the experimental trial. A content analysis was also done by looking at how many letters the subject wrote during the first 15 seconds.

An 8½ by 11 lined paper was used to control for the differences in the size of writing.

The split half reliability for this test was found to be .907

with N = 189.

3. Questionnaire

The following questions were posed to each subject. Reliability measures for the subjects' reports were obtained whenever possible from medical and social history records based on interviews by staff of either the patient or the patient and his family, employer, probation officer etc...

a) age; ethnic category, coded 1 = white, 0 = black; and socioeconomic class based on place of residence, occupation, and education of the head of household scored according to Hollingshead and Redlich (1958). The socioeconomic measure has five categories, 1 = upper class to 5 = lower class (see Appendix).

b) Drug History
age of onset of drug use; age of onset of heroin use; duration of heroin habit (in years); use of other drugs including alcohol, coded 1 = yes, 0 = no; use of other opiates, coded 1 = yes, 0 = no.

c) Treatment history
voluntary or involuntary admission, coded 1 = voluntary, 0 = involuntary; number of treatment attempts; longest period of voluntary abstinence (in weeks).

d) Delinquency history
Presence or absence of delinquent behavior prior to drug use, ex: truancy, stealing, fighting, coded 1 = yes, 0 = no.

e) Criminal history
Number of arrests, drug-related and non-drug related; age at first arrest.

f) Work history
salable skill (specify), coded 1 = yes, 0 = no; longest period on one job (in months).

g) Education history
amount of education, specify if has HS diploma.

h) Completed course of treatment, coded 1 = yes, 0 = no.

## Testing Battery 2

### 1. Shipley Institute of Living Scale

This scale was included in the testing battery to control for the IQ since research has shown that intelligence may affect some of the measures used. The score obtained with this short scale has been shown to be a fair estimate of the subject's intelligence (Manual - Shipley Institute of Living Scale, 1946; Sines, 1958).

The scale was developed for the detection of mild degrees of intellectual impairment. It consists of a vocabulary test and an abstraction test yielding a score called the Conceptual Quotient or CQ. For the purposes of this study, the total raw score for the vocabulary and abstraction tests will be used since this is the score which is comparable to the IQ score as measured by the Wechsler Bellevue Intelligence Test (Sines, 1958).

Reliability coefficients with N = 322 were .87 for the vocabulary part, .89 for the abstraction test, and .92 for the two tests combined.

The test was given to each subject individually with the request to read and follow instructions. The test was considered invalid for one subject in the methadone group since intense anxiety about his performance prevented him from completing it.

### 2. Minnesota Multiphasic Personality Inventory (MMPI)

This test consists of 566 statements which the subject is asked to sort into three catagories, "True," "False," and "Cannot

Say." The responses are evaluated to yield scores on four validity and nine main clinical scales. Since its development, additional scales have been derived.

The original normative data was derived from a sample of over 700 people visiting Minnesota hospitals who were compared to patients from the neuropsychiatric division of the University of Minnesota Hospitals. The criterion for each scale was the valid prediction of clinical cases against the staff diagnosis. A high score on a scale has been found to predict the diagnosis of a patient in more than 60% of the cases (Hathaway and McKinley, 1951). Hathaway and McKinley (1951) point out that although the scales were developed to predict abnormal diagnoses, they have been shown to have meaning within the normal group.

To provide a standard of comparison with the original clinical scales for new scales which have been developed, Hathaway and Briggs (1957) standardized the new scales using a normative sample of 541 persons similar to the sample used in developing the original scale. For these scales, norm parameters were obtained providing standard T scores comparable to those for the usual scales of the test (Hathaway and Briggs, 1957).

The booklet Form R was administered to all of the subjects in this study individually. This is a computerized form which yields scale scores (T) for all of the scales for comparative purposes.

The hypothesis which has been posited concerning the MMPI test is restricted to scales 4 and 9 which are directly relevant

to delay and planning ability, the Heroin scale which is specific to this population, and the IR ratio which particularly concerns the handling of impulses. Other relevant scales are included such as scales O, Es, A, R, the FT index, and the validity scales, as interesting additional data to consider in assessing differences between the two groups of addicts.

a) Scale 4 - Psychopathic Deviate

This 50 item scale was developed using a criterion group of 100 subjects of both sexes, aged 16 - 22, all of whom had histories of delinquency. The major features of this personality pattern include a repeated disregard for social customs, superficial relationships with others, and an inability to profit from experience and to plan ahead. The antisocial behavior includes stealing, lying, and alcohol and drug addiction. Astin (1959) found impulse control to be one factor comprising this scale.

High scorers are described as adventurous, aggressive, immature, irritable, tense, and liking to drink (Dahlstrom, Welsh, and Dahlstrom, 1972). Low scorers have been found to be conforming, good-tempered, reliable, and persistent in working toward goals (Dahlstrom, Welsh, and Dahlstrom, 1972).

Test-retest reliabilities using this scale were found to range from .80 and .71 for normal populations and .52 for psychiatric subjects (Hathaway and McKinley, 1951).

b) Scale 9 - Hypomania

This 46 item scale measures personality characteristics involving overproduction in thought and action. High scorers

tend to be restless, impulsive, impatient, full of ideas which may be inadequately worked out and seldom executed (Good and Brantner, 1961). They have also been described as liking to drink (Dahlstrom, Welsh, and Dahlstrom, 1972). Scores above 70 on this scale suggest the presence of hyperactivity, irritability, and insufficient inhibitory capacity (Butcher, 1969). Low scorers have been described as reliable, practical, balanced, and mature, showing responsibility, good judgment, and common sense (Dahlstrom, Welsh, and Dahlstrom, 1972).

The scale has been found to have test-retest reliability coefficients ranging from .83 and .76 with normals and .59 with a sample of psychiatric patients (Hathaway and McKinley, 1951). The scale identifies about 60% of diagnosed cases and yields scores of 60 - 70 for the remainder. For scores in the 70 range, the direction of the overactivity should be considered.

c) Heroin Scale (He)

This scale was developed to differentiate incarcerated heroin addicts from non-user prisoners (Cavior, Kurtzberg, and Lipton, 1967). The scale was found to correctly identify 83% of addicts and 81% of nonaddicts in the adult group, and 81% of addicts and 70% of nonaddicts in the adolescent sample, using N = 160 in both adult groups and N = 63 and 56 for the adolescent samples. In a one year follow-up study of a sample of ten adolescent addicts, four of six who were incorrectly identified as addicts had begun to use heroin. A cutoff score of 36 yielded the greatest dichotomy in the validation studies (Cavior,

Kurtzberg, and Lipton, 1967).

Performance on this scale is affected by the tendency to act out with the use of heroin and by ethnic group. Puerto Ricans tend to score lower than whites or blacks. Reliability measures have not been reported for this scale.

d) Scale 0 - Social Introversion-Extroversion

Scale 0 is a scale of social introversion-extroversion. This 70 item scale was developed by contrasting groups of students in a guidance program who scored above the 65th centile rank and below the 35th centile rank on the subscale for social introversion-extroversion in the Minnesota T-S-E Inventory (Dahlstrom, Welsh, and Dahlstrom, 1972). High scorers are described as overly controlled and inhibited, and vacillating in decision making. Low scorers are described as persuasive seeing things opportunistically, emphasizing oral pleasure in a self-indulgent way, unable to delay gratification, and often acting with insufficient thought and deliberation (Dahlstrom, Welsh, and Dahlstrom, 1972).

With a normal sample of 100, the test-retest reliability was found to be .93 (Hathaway and McKinley, 1951).

e) Internalization ratio (IR)

This ratio was developed by Welsh (1952) to differentiate people who internalize conflicts from those who act them out. The following formula is used to determine the ratio:

$$IR = \frac{Hs + D + Pt}{Hy + Pd + Ma}$$

Internalizers have a $>$ 1.00 ratio.

Those who act out conflicts have a $<$ 1.00 ratio.

f) Frustration Tolerance Index (FT)

This index was listed in Dahlstrom, Welsh, and Dahlstrom (1972) as developed by Beall and Panton (1957) in an unpublished study. An FT ratio of > 1.00 reflects low frustration tolerance. FT < 1.00 signifies a better capability to withstand frustration.

g) Ego Strength Scale (Es)

This 68 item scale was developed to significantly differentiate psychoneurotics who improve in psychotherapy from those who do not (Barron, 1953). Improvement in psychotherapy was determined by two judges who were thoroughly acquainted with the course of therapy. Agreement between the judges on the degree of improvement was high (r = .91). High scorers tend to have vitality, resourcefulness, and self-direction. Low scorers are inhibited, and affected.

Barron (1953) reports that the scale correlated highly with the variable "vitality" defined as "general energy level," and with "drive" defined as "persistence, resolution, perserverence, and directed energy." He states that "the scale may serve as a predictor in any situation in which an estimate of person adaptability and resourcefulness is called for," (Barron, 1953, p.333). Good and Brantner (1961) state that a T = 50 score has been used as a cutting point for predicting response to psychotherapy but that it is not always effective.

The test-retest reliability after three months was found to be .72. The odd-even reliability was .76 (Barron, 1953).

h) Welsh R and A scales

Factor analysis of the MMPI items has led to the derivation by Welsh of the R and A scales which form common factors underlying the basic scales of the MMPI (Dahlstrom, Welsh, and Dahlstrom, 1972). Wiggins (in Butcher, 1969) reports that the Welsh R factor is loaded by items suggestive of impulsivity at one pole and control or overcontrol at the other extreme.

High scorers on the R scale are described as submissive, and thorough. Low scorers are described as energetic, aggressive, dominant, impulsive, self-seeking, and self-indulgent (Dahlstrom, Welsh, and Dahlstrom, 1972).

High scorers on the A scale are described as passive, inhibited and overcontrolled. Low scorers are described as ebullient, ostentatious, immature, unable to delay gratification, and often acting without sufficient thought and deliberation (Dahlstrom, Welsh, and Dahlstrom, 1972).

i) F scale

This validity scale consists of 64 items which rarely occur in the scored direction among normal subjects. Elevations may represent carelessness, an attempt to present oneself in a bad light or plead for help, psychosis, or acting out patterns. Scores below a T score of 70 or 80 are usually accepted as valid representations of conforming individuals with problems in specific areas.

Conservative estimates of test-retest reliability obtained with normals and with psychiatric patients are respectively $r = .75$,

N = 100 and $r$ = .93, N = 30 (Hathaway and McKinley, 1951).

j) K scale

This 22 item validity scale developed to tap subtle evidence of invalidity was derived by comparing 50 profiles found to be normal in people with characterological and behavioral problems as evaluated by psychiatrists with profiles of normals. High scores reflect defensiveness against admitting psychological weakness and an attempt to maintain an appearance of adequacy. Low scores reflect candidness, self-criticism, and an exaggeration of one's own problems. It has been suggested that people open to change have a low or average K scale score while those resistant to change have a K score $\geq$ 65 (Good and Brantner, 1961).

The test-retest reliability coefficient obtained with a normal sample of 100 was .76 (Hathaway and McKinley, 1951).

k) L scale

This validity scale consists of 15 items concerned with minor but nearly universal faults. A high score suggests a naive attempt to present oneself in a favorable light. Low scores may represent attempts to present a pathological picture of oneself.

With a sample of 100 normals, the test-retest reliability coefficient obtained was .46. With a psychiatric sample of 30, a .85 test-retest reliability was obtained (Hathaway and McKinley, 1951).

# Chapter 3

## RESULTS

The basic premise of this research study is that variables reflecting control over one's behavior differentiate addicts accepted to a drug free program and those admitted to a methadone maintenance program.

Statistical analyses were performed on the variables investigated by the hypotheses, and on the information obtained during interviews with the subjects. The sample will first be described demographically. Then, results concerning the hypotheses will be presented followed by findings based on the interview material, and additional MMPI scale data. Finally, a minimal posthoc analysis using the drug free sample will be reported to look at the differences between patients who completed the drug free program and those who did not.

### Demographic Data

Demographic information was collected to allow for a comparison of this sample with others in the literature and to control for the effect that these variables may have on variables denoting inhibitory capacity.

Basic statistics were computed for this data which was also analyzed with other variables in a multiple correlation matrix to determine if these variables are related to membership in a program.

Table 1

Demographic Characteristics (Age, Ethnic Group, Social Class and IQ) of the Methadone Maintenance and Drug Free Groups as Represented by the Mean and Standard Deviation from the Mean

| Variable | N | Mean | S.D. | r |
|---|---|---|---|---|
| Age | | | | |
| Meth. Maint. | 30 | 30.03 | 7.73 | .226 |
| Drug Free | 30 | 26.93 | 5.44 | |
| Ethnic Group* | | | | |
| Meth. Maint. | 30 | .40 | .49 | .069 |
| Drug Free | 30 | .33 | .47 | |
| Social Class | | | | |
| Meth. Maint. | 30 | 3.97 | .71 | .095 |
| Drug Free | 30 | 3.83 | .69 | |
| IQ** | | | | |
| Meth. Maint. | 30 | 105.66 | 12.38 | -.105 |
| Drug Free | 30 | 107.90 | 14.90 | |

There are no significant differences using (r) correlation between variable and group membership. All differences exceed the .05 level of probability.

*Ethnic Group was coded 1 = white, 0 = black

**IQ is the intelligence equivalent obtained with the Shipley Institute of Living Scale.

The results on Table 1 reveal that none of the demographic variables significantly differentiate the two groups although the methadone maintenance group is a little older, $p > .05 < .10$.

Impulse Control

The results of the statistical analysis of the variables under investigation are presented in Table 2. *t*-tests of the differences between the means were performed on each variable.

1. Hypothesis 1a stated that addicts in the drug free program will have lower scores on MMPI scales 4, 9, and a > 1.00 internalization ratio than methadone maintenance patients. This hypothesis was not supported. Only scale 9 differentiated the two groups at *p* under .001, however, the drug free group scored significantly higher on this scale.

2. Hypothesis 1b predicted a longer prospective time span for addicts in the drug free program than for methadone maintained addicts.

Before presenting the findings for this hypothesis, results of an interscorer reliability study will be reported. Since reliabilities for the scoring system for prospective time span developed by Epley and Ricks (1963) have previously been done with small numbers of subjects (see p. 35), it was considered imperative to duplicate the previous findings with this sample of 60 subjects. Results are given in Table 3. The interscorer reliability coefficient ranged from .78 to .96 with a median of .85, a similar degree of agreement between the judges to that

Table 2

Impulse Control

| Variable | N | Mean | S.D. | t | p |
|---|---|---|---|---|---|
| TAT | | | | | |
| Meth. Maint. | 30 | 4.32 | 1.88 | .988 | <.328 |
| Drug Free | 30 | 3.83 | 1.92 | | |
| Motor Inhibition | | | | | |
| Meth. Maint. | 30 | 13.46 | 2.79 | .776 | <.442 |
| Drug Free | 30 | 10.68 | 3.47 | | |
| Education | | | | | |
| Meth. Maint. | 30 | 11.03 | 1.70 | -.361 | over .500 |
| Drug Free | 30 | 11.20 | 1.82 | | |
| Employment | | | | | |
| Meth. Maint. | 30 | 22.33 | 2.96 | 1.931 | <.059 |
| Drug Free | 30 | 12.81 | 3.02 | | |
| Scale 4 | | | | | |
| Meth. Maint. | 30 | 76.12 | 9.98 | .686 | <.496 |
| Drug Free | 30 | 74.33 | 10.37 | | |
| Scale 9 | | | | | |
| Meth. Maint. | 30 | 65.77 | 8.14 | -3.493 | under .001 |
| Drug Free | 30 | 74.27 | 10.27 | | |
| He Scale | | | | | |
| Meth. Maint. | 30 | 36.93 | 4.98 | -.390 | over .500 |
| Drug Free | 30 | 37.43 | 4.79 | | |
| IR ratio | | | | | |
| Meth. Maint. | 30 | .983 | .137 | .440 | over..500 |
| Drug Free | 30 | .967 | .134 | | |

Table 3

Interscorer Reliability Coefficients (TAT time span measure).

| | N | $r_1$ | $r_2$ |
|---|---|---|---|
| Story 1 | 51 | .96 | .96 |
| Story 2 | 57 | .84 | .85 |
| Story 3 | 59 | .81 | .82 |
| Story 4 | 58 | .78 | .78 |
| Story 5 | 56 | .90 | .90 |
| Story 6 | 51 | .81 | .81 |
| Mean/six stories | 60 | .93 | .94 |
| Median | | .84 | .85 |

N is less than 60 when one or both scorers scored a story given by a subject vague or unscorable.

$r_1$ - reliability coefficient unadjusted for the systematic bias of the judges.

$r_2$ - reliability coefficient adjusted for the systematic bias of the judges.

previously found by Goz (1968) with an N = 25.

Hypothesis 1b was also not supported. There is no difference between the groups on the TAT time span measure.

3. Hypothesis 1c predicted that drug free patients will have longer inhibition times on the motor inhibition test than methadone maintenance patients. This was not found to be true. There is no difference between the two groups. Content analysis of the number of letters written in fifteen seconds revealed that it is highly correlated with the motor inhibition measure, $r$ = -.878, $p \leq .001$.

4. Hypothesis 1d suggested that addicts in the drug free program have been able to maintain stable employment for a longer period of time compared with addicts on methadone maintenance. This hypothesis was not supported. While not statistically significant, it was found that the addicts on methadone had histories of longer employment, a finding which approaches significance ($p = .059$). It is probable that the difference in length of employment is due to the higher age of the methadone maintenance sample. Employment and age are significantly correlated at $p \leq .001$ level ($r = .567$).

5. Hypothesis 1e proposed that addicts in the drug free program have completed more years of education than their counterparts on methadone. This hypothesis was not supported. In both groups, on the average, addicts did not pursue education further than the 11th grade.

The apriori predictions thus were not supported in this sample.

Impulse Control : Total Sample

While the two groups of addicts do not differ in behavioral controls, an examination of the sample as one group reveals that many addicts display the existence of some ego controls (see Table 4). While the average educational level in each group is 11 years, 47% of the addicts have a high school diploma or higher education. 69% of the addicts have maintained one job for at least one year. 68.3% of the addicts have a skill which usually requires training. 40% of the group have an IR ratio $\geq$ 1.00 denoting a tendency to internalize conflicts. Some ability to control motor behavior is evinced by 49% of the total sample. The same percentage of addicts manifest the ability to consider events in the near future. 49% of the addicts display the potential to profit from treatment.

Questionnaire Data

In the course of interviewing and testing, data were obtained and analyzed statistically in order not to lose any information which might account for the variance in the criterion, membership in a treatment group.

Reliability of Information from Questionnaire

Since most of the data from the questionnaire were obtained during interviews, it is reasonable to assume that the reliability of this information can be challenged. A reliability study of the subjects' responses was thus done by comparing, in as many cases

Table 4

Presence of Controls: Total Sample

| Variable | Mean | Range | % Manifesting Control |
|---|---|---|---|
| Education | 11.1 years | 7 - 16 years | 47% ≧ H.S. diploma |
| Employment | 16.9 months | 1 - 168 months | 69% ≧ 1 year |
| Skill* | .683 | -- | 68.3% have a skill |
| IR ratio | .975 | .73 - 1.29 | 40% ≧ 1.00 |
| Motor Inhib. | 12.0 sec. | 0 - 693 sec. | 49% ≧ 10 sec. |
| TAT | 4.1 | 1.1 - 8.0 | 49% ≧ 4.0 |
| Es scale | 48.4 | 14 - 67 | 49% ≧ 51 |

*Skill was coded 1 = presence of skill; 0 = no skill present.

as possible, the information given to the interviewer with information gleaned from medical, social, and psychiatric histories, some of which was also obtained from the subject by other interviewers, and some of which was corroborated by external sources such as family, police, probation officer, etc. The results are highly encouraging (see Table 5). In the drug free group, only 1 response out of 175 or 0.6% (N = 26) was erroneous. In the methadone maintenance group, 10 of 206 or 20.6% of the responses were incorrect (N = 29). Similarly high levels of veracity of the patients' responses were found by Stephens (1972) who compared information about patients' behaviors as reported by the patients and their counselors and families. In his sample, the mean percentage of agreement with the counselor was 89% (N = 17). When a response was found to be unreliable by one source, another source was sought. It was usually possible to obtain two sources which confirmed each other. In these cases, this information was assumed to be the correct one. If additional sources were unavailable for an unreliable response, the response was retained as veridical.

## Analysis of All Variables: Correlation Matrix

All of the thirty-three variables comprising demographic data, variables hypothesized to manifest control over behavior, drug and criminal history, MMPI scales, and the criterion, membership in a program were intercorrelated to determine which variables are correlated with the criterion, and the relationships

Table 5

Reliability of Patients' Responses

| Group | N | No. Responses Verified | % Reliable |
|---|---|---|---|
| Meth. Maint. | 29 | 206 | 79.4% |
| Drug Free | 26 | 175 | 99.4% |

among the variables. Data on completion of the program were not included because this variable was not valid for the methadone maintenance program in which completion was usually unrelated to the subject's performance. The question of voluntary vs. involuntary admission was also eliminated because of the lack of variance among the responses. Three variables, employment, longest period of abstinence, and moter inhibition time were transformed into their logarithmic equivalents to reduce the skewness of their frequency distributions. All dichotomous variables were coded 1 = yes, 0 = no, and the criterion variable was coded 1 for the methadone maintenance group and 0 for membership in the drug free group.

The correlational analysis was chosen with full awareness that some of the correlations may be spuriously significant because of the large number of variables in relation to the small number of subjects. This part of the study however, is treated in an exploratory fashion with the need of cross-validation in mind. The interest lies in determining where some of the relationships among the variables exist.

The correlation matrix (Table 6) reveals that eight variables are significantly correlated with group membership: Scale 9, $r = -.417$, $p \leq .001$; presence of delinquent behavior prior to drug use, $r = -.400$, $p \leq .01$; presence of the use of other drugs, $r = -.358$, $p \leq .01$; presence of the use of other opitates, $r = -.336$, $p \leq .01$; age of first arrest, $r = .311$, $p \leq .05$; number of non-drug related arrests, $r = -.306$, $p \leq .05$; the F scale

Table 6: Correlation Matrix

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | | -361b | 312c | -359b | -137 | -068 | 567a | -192 | 018 | -226 | 263c |
| 2. Ethnic Group | | | -138 | 231 | 155 | 060 | -048 | -188 | 347b | -045 | -098 |
| 3. Social Class | | | | -263c | -268c | 046 | 391b | -099 | 036 | 019 | 205 |
| 4. IQ | | | | | -083 | 073 | -109 | 296c | 130 | -038 | -295c |
| 5. TAT | | | | | | 150 | -032 | -139 | -173 | -169 | -045 |
| 6. Motor Inhibition | | | | | | | -109 | -438a | 087 | -242 | 204 |
| 7. Employment | | | | | | | | -046 | 062 | -275c | 118 |
| 8. Education | | | | | | | | | -131 | 134 | -051 |
| 9. Scale 4 | | | | | | | | | | 168 | 134 |
| 10. Scale 9 | | | | | | | | | | | -223 |
| 11. IR ratio | | | | | | | | | | | |
| 12. Ho scale | | | | | | | | | | | |
| 13. F scale | | | | | | | | | | | |
| 14. K scale | | | | | | | | | | | |
| 15. L scale | | | | | | | | | | | |
| 16. Si scale | | | | | | | | | | | |
| 17. FT ratio | | | | | | | | | | | |
| 18. A scale | | | | | | | | | | | |
| 19. R scale | | | | | | | | | | | |
| 20. Es scale | | | | | | | | | | | |
| 21. Onset of Drug Use (age) | | | | | | | | | | | |
| 22. Onset of Heroin Use (age) | | | | | | | | | | | |
| 23. Duration Habit (years) | | | | | | | | | | | |
| 24. Presence of Opiate Use | | | | | | | | | | | |
| 25. Presence of Use of Other Drugs | | | | | | | | | | | |
| 26. Longest Period of Abstinence | | | | | | | | | | | |
| 27. No. Previous Treatments | | | | | | | | | | | |
| 28. Presence Delinquent Behavior | | | | | | | | | | | |
| 29. No. Drug Arrests | | | | | | | | | | | |
| 30. No. Non-drug Arrests | | | | | | | | | | | |
| 31. Age of First Arrest | | | | | | | | | | | |
| 32. No. Letters in 15 Sec. | | | | | | | | | | | |
| 33. Presence of Skill | | | | | | | | | | | |
| 34. Drug Group (1 = MM; 0 = DF) | | | | | | | | | | | |

a = $p \leq .001$; b = $p \leq .01$; c = $p \leq .05$

Table 6: Correlation Matrix - continued

| Variable | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | -174 | -004 | 348b | 261c | 071 | -381b | -184 | 501a | 041 | 450a | 541a |
| 2. Ethnic Group | 198 | -077 | 015 | -097 | -042 | 114 | 068 | -247 | -002 | -140 | -381b |
| 3. Social Class | 127 | 086 | 145 | 150 | -044 | -142 | 049 | 162 | -103 | 083 | 058 |
| 4. IQ | 160 | -284c | -121 | -097 | -185 | 252 | 093 | -361b | 060 | -130 | -069 |
| 5. TAT | -177 | -247 | -061 | 032 | -068 | 043 | -079 | -133 | 061 | -219 | -266c |
| 6. Motor Inhibition | 215 | -218 | 076 | -209 | -063 | -044 | 125 | -181 | 065 | -102 | -106 |
| 7. Employment | -110 | -063 | 422a | 428a | -156 | -291c | -247 | 395b | 164 | 221 | 287c |
| 8. Education | -165 | 175 | -155 | 086 | -093 | -021 | 043 | -059 | -080 | -011 | 238 |
| 9. Scale 4 | 169 | 367b | 175 | -081 | 293c | 036 | 291c | 082 | -293c | 010 | -066 |
| 10. Scale 9 | -021 | 497a | -196 | -069 | 014 | 450a | 185 | -255c | -320c | -281c | -196 |
| 11. IR ratio | 047 | 350b | -040 | 008 | 528a | -803a | 558a | 328c | -568a | 214 | 197 |
| 12. Ho scale | | -102 | -312c | -365b | 306c | 130 | 387b | -309c | 065 | -029 | -106 |
| 13. F scale | | | -164 | 147 | 409b | -108 | 320c | 179 | -594a | -064 | 116 |
| 14. K scale | | | | 496a | -428a | -124 | -622a | 518a | 387b | 106 | 212 |
| 15. L scale | | | | | -179 | -122 | -413b | 377b | 075 | 147 | 355b |
| 16. Si scale | | | | | | -314c | 667a | 149 | -530a | 195 | 053 |
| 17. FT ratio | | | | | | | -241 | -548a | 308c | -216 | -253 |
| 18. A scale | | | | | | | | -251 | -717a | 035 | -121 |
| 19. R scale | | | | | | | | | 022 | 117 | 316c |
| 20. Es scale | | | | | | | | | | -028 | 052 |
| 21. Onset of Drug Use (age) | | | | | | | | | | | 653a |
| 22. Onset of Heroin Use (age) | | | | | | | | | | | |
| 23. Duration Habit (years) | | | | | | | | | | | |
| 24. Presence of Opiate Use | | | | | | | | | | | |
| 25. Presence of Use of Other Drugs | | | | | | | | | | | |
| 26. Longest Period of Abstinence | | | | | | | | | | | |
| 27. No. Previous Treatments | | | | | | | | | | | |
| 28. Presence Delinquent Behavior | | | | | | | | | | | |
| 29. No. Drug Arrests | | | | | | | | | | | |
| 30. No. Non-Drug Arrests | | | | | | | | | | | |
| 31. Age of First Arrest | | | | | | | | | | | |
| 32. No. Letters in 15 Sec. | | | | | | | | | | | |
| 33. Presence of Skill | | | | | | | | | | | |
| 34. Drug Group (1 = MM; 0 = DF) | | | | | | | | | | | |

a = $p \leq .001$; b = $p \leq .01$; c = $p \leq .05$

Table 6: Correlation Matrix - continued

| Variable | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | 785a | -120 | -288c | 237 | -044 | -119 | 053 | -196 | 539a | -011 | 236 | 226 |
| 2. Ethnic Group | -207 | -102 | 155 | 015 | 247 | 138 | 156 | 142 | -248 | 081 | -002 | 069 |
| 3. Social Class | 299c | 115 | -128 | 139 | -220 | 048 | -037 | 280c | 079 | -097 | 261c | 095 |
| 4. IQ | -304c | 063 | 126 | -136 | 147 | 0 | -073 | -160 | -070 | 025 | -031 | -105 |
| 5. TAT | -021 | -160 | 089 | 084 | 283c | -160 | 081 | -076 | -003 | -154 | -039 | 129 |
| 6. Motor Inhibition | -052 | 284c | -172 | -008 | 292c | -020 | 199 | 163 | -132 | -878a | -073 | 101 |
| 7. Employment | 390b | -068 | -203 | 244 | 013 | -078 | -050 | 019 | 316c | 103 | 299c | 246 |
| 8. Education | -356b | -095 | 055 | -284c | -362b | -199 | -294c | -212 | 108 | 433a | 086 | -047 |
| 9. Scale 4 | 057 | 094 | 112 | 078 | 084 | -015 | 081 | 125 | 031 | -112 | -197 | 090 |
| 10. Scale 9 | -078 | 275c | 124 | -042 | -031 | 234 | 085 | 287c | -311c | 216 | -108 | -417a |
| 11. IR ratio | 091 | -073 | -052 | 012 | -073 | -183 | 058 | -070 | 137 | -148 | 129 | 058 |
| 12. Ho scale | -112 | 136 | -011 | 014 | -062 | 085 | -034 | 017 | -123 | -179 | -136 | -051 |
| 13. F scale | -124 | 171 | 063 | -103 | -067 | 192 | 301c | 270c | -286c | 214 | 015 | -281c |
| 14. K scale | 209 | -073 | 110 | 047 | 086 | 012 | 107 | 102 | 116 | -134 | -058 | 151 |
| 15. L scale | 028 | -098 | 171 | 032 | -057 | 049 | 180 | 008 | 053 | 207 | 231 | -091 |
| 16. Si scale | 105 | -109 | -063 | 064 | 016 | -175 | -057 | -079 | 073 | 016 | -020 | 031 |
| 17. FT ratio | -169 | 192 | -023 | -064 | 084 | 244 | 136 | 161 | -311c | -016 | -273c | -144 |
| 18. A scale | -138 | -025 | 010 | -019 | -062 | -077 | -144 | -110 | 026 | -065 | -030 | -110 |
| 19. R scale | 306c | -206 | 139 | 148 | -048 | -097 | 040 | -070 | 313c | 064 | 229 | 046 |
| 20. Es scale | 035 | 037 | -062 | 112 | -040 | -011 | 018 | 068 | 135 | -138 | -026 | 096 |
| 21. Onset Drug Use (age) | 138 | -165 | -256c | -064 | -190 | -238 | -237 | -243 | 361b | 059 | 043 | 238 |
| 22. Onset Heroin Use | 024 | -048 | -210 | 031 | -276c | -136 | -076 | -145 | 251 | 048 | 181 | -048 |
| 23. Duration Habit (years) | | -083 | -284c | 240 | 095 | -009 | 089 | -095 | 419b | -044 | 141 | 274c |
| 24. Presence of Opiate Use | | | -030 | -039 | 078 | 135 | 186 | 375b | -405b | -224 | -089 | -336b |
| 25. Presence Use Other Drugs | | | | 023 | 147 | 089 | -054 | 083 | -140 | 120 | -016 | -358b |
| 26. Longest Period Abstinence | | | | | -027 | -116 | 035 | 048 | 211 | -037 | 074 | -005 |
| 27. No. Previous Treatments | | | | | | 125 | 264c | 165 | -246 | 284c | -066 | -005 |
| 28. Presence Delinquent Behavior | | | | | | | 209 | 413b | -507a | -017 | -107 | -400b |
| 29. No. Drug Arrests | | | | | | | | 175 | -292c | -080 | 036 | 024 |
| 30. No. Non-Drug Arrests | | | | | | | | | -543a | -191 | -029 | -306c |
| 31. Age of First Arrest | | | | | | | | | | 051 | 250 | 311c |
| 32. No. Letters in 15 Sec. | | | | | | | | | | | 108 | -031 |
| 33. Presence of Skill | | | | | | | | | | | | -036 |
| 34. Drug Group (1 = MM; 0 = DF) | | | | | | | | | | | | |

a = $p \leq .001$; b = $p \leq .01$; c = $p \leq .05$

$r = -.281$, $p \leq .05$; and the duration of the heroin habit, $r = .274$, $p \leq .05$.

Multiple Regression Analysis of the Data

Sets of variables were regressed onto the criterion to determine the best set of predictor variables (as per Cohen, 1968). As a group, the eight variables which are correlated with the criterion account for 46% of the variance, significant at p under .001. The four variables whose correlations with the criterion are significant at the level of $p \leq .01$ or $p \leq .001$ account for 41% of the variance, p under .001. When the drug, criminal history, and scale 9 are considered as a set, 53% of the variance is accounted for, p under .001. This set however includes ten variables which, based on the data of 60 subjects must be interpreted with caution.

Of the MMPI measures, only scale 9 significantly predicts the criterion, accounting for 17.5% of the variance, $p = .001$.

Amplification of Results Using Intercorrelation Relationships

An expanded description of the patients accepted into each program can be derived from the observation of the intercorrelations of the eight variables which correlated with the criterion with other variables in the correlation matrix (Table 6). Table 7 presents these intercorrelations exclusively.

Scale 9 is correlated with scales F, R, Es, and the FT ratio of the MMPI test ($r = .497$, $p \leq .001$; $r = -.255$, $p \leq .05$;

Table 7

Intercorrelations of Variables Correlating Significantly with Criterion with Other Variables

| Variable | Ma Scale | F Scale | Dur. Habit | Opiate Use | Drug Use | Delinq. Beh. | Arrest Nondrg | Arrest Age |
|---|---|---|---|---|---|---|---|---|
| 1. Age | | | 785a | | -288c | | | 539a |
| 2. Social Class | | | 299c | | | | 280c | |
| 3. IQ | | -284c | -304c | | | | | |
| 4. Motor Inhibition | | | | 284c | | | | |
| 5. Employment | -275c | | 390b | | | | | 316c |
| 6. Education | | | -356b | | | | | |
| 7. Scale 4 | | 367b | | | | | | |
| 8. Scale 9 | | 497a | | 275c | | | 287c | -311c |
| 9. IR ratio | | 350b | | | | | | |
| 10. F Scale | 497a | | | | | | 270c | -286c |
| 11. Si Scale | | 409b | | | | | | |
| 12. FT ratio | 450a | | | | | | | -311c |
| 13. A scale | | 320c | | | | | | |
| 14. R scale | -255c | | 306c | | | | | 313c |
| 15. Es scale | -320c | -594a | | | | | | |
| 16. Onset of Drug Use | -281c | | | | -256c | | | 361b |
| 17. Duration of Habit | | | | | -284c | | | 419b |
| 18. Use of Other Opiates | 275c | | | | | | 375b | -405b |
| 19. Use of Other Drugs | | | -284c | | | | | |
| 20. Delinquent Behavior | | | | | | | 413b | -507a |
| 21. Drug Related Arrests | | | 301c | | | | | -292c |
| 22. Non-Drug Related Arrests | 287c | 270c | | 375b | | 413b | | -543a |
| 23. Age of First Arrest | -311c | -286c | 419b | -405b | | -507a | -543a | |

a = p ≤ .001
b = p ≤ .01
c = p ≤ .05

$r = -.320$, $p \leq .05$; and $r = .450$, $p \leq .001$ respectively). When the energy level is high, employment is of shorter duration ($r = -.275$, $p \leq .05$). The higher the energy level, the more tendency to use other opiates ($r = .275$, $p \leq .05$), the lower the age of onset of drug ($r = -.281$, $p \leq .05$), the lower the age of first arrest ($r = -.311$, $p \leq .05$), and the higher the number of non-drug related arrests ($r = .287$, $p \leq .05$).

When delinquent behavior is present prior to drug use, the number of non-drug related arrests tends to be higher ($r = .413$, $p \leq .001$), and the age of first arrest tends to be lower ($r = -.507$, $p \leq .001$).

Addicts who have used drugs other than opiates tend to be younger ($r = -.288$, $p \leq .05$), have begun to use drugs at a younger age ($r = -.256$, $p \leq .05$), and have used heroin for a shorter period of time ($r = -.284$, $p \leq .05$).

The presence of the use of opiates other than heroin correlates with scale 9 ($r = .275$, $p \leq .05$). Those who use other opiates have more non-drug related arrests ($r = .375$, $p \leq .01$), have been arrested at a younger age for the first time ($r = -.405$, $p \leq .01$), and can control motoric behavior better on the motor inhibition test ($r = .284$, $p \leq .05$).

The older addicts have been arrested later in life for the first time ($r = .539$, $p \leq .001$). The higher the age of first arrest, the lower the number of non-drug related arrests ($r = -.543$, $p \leq .001$), drug related arrests ($r = -.292$, $p \leq .05$), and the higher the age of onset of drug use ($r = .361$, $p \leq .01$). When the age of first arrest is higher, employment is of longer duration ($r = .316$, $p \leq .05$) and

the heroin habit is more longterm ($r$ = .419, $p \leq .01$). The age of first arrest correlates with MMPI scales F, R, and the FT ratio ($r$ = -.286, $p \leq .05$; $r$ = .313, $p \leq .05$; and $r$ = -.311, $p \leq .05$ respectively).

Addicts who have been arrested for non-drug related crimes more often come from a higher socioeconomic class ($r$ = .280, $p \leq .05$).

The higher the F scale score, the lower the ego strength of the addict ($r$ = -.594, $p \leq .001$), and the lower the IQ ($r$ = -.284, $p \leq .05$). When the F scale is high, psychopathic tendencies and an inhibitory tendency are also increased (Pd: $r$ = .367, $p \leq .01$; Si: $r$ = .409, $p \leq .01$; A: $r$ = .320, $p \leq .05$; IR ratio: $r$ = .350, $p \leq .05$). The greater the F scale score, the higher the number of drug related arrests ($r$ = .301, $p \leq .05$), and non-drug related arrests ($r$ = .270, $p \leq .05$).

The older addicts have used heroin for a longer period of time ($r$ = .785, $p \leq .001$). Those who have used heroin longer have a lower IQ ($r$ = -.304, $p \leq .05$), and a lower educational level ($r$ = -.356, $p \leq .01$). They come from a better socioeconomic background ($r$ = .299, $p \leq .05$). They tend to be persistant and thorough ($r$ with R scale = .306, $p \leq .05$) and have maintained employment on one job for a longer period of time ($r$ = .390, $p \leq .01$). The longer the heroin habit, the less tendency to indulge in other drugs ($r$ = -.284, $p \leq .05$).

MMPI Profiles

The total MMPI test was administered to each subject. While specific scales relevant to delay capacity were compared statistically in the correlation matrix, a pictorial comparison of group profiles can

illustrate the differences between the two groups more vividly. Table 8 presents the group profiles of each drug group superimposed on one another. Descriptively, the two groups differ appreciably on three scales, F, scale 8 and scale 9, with the drug free group having higher mean T scores on each scale. Statistically, the differences between the two groups are significant at the $p = .05$ level for the F scale, the $p = .059$ level for scale 8, and $p = .001$ level for scale 9. The drug free group admits to more problems, manifests more disturbed thinking, and has a higher energy level than the methadone maintenance group.

## The "Typical" Patient

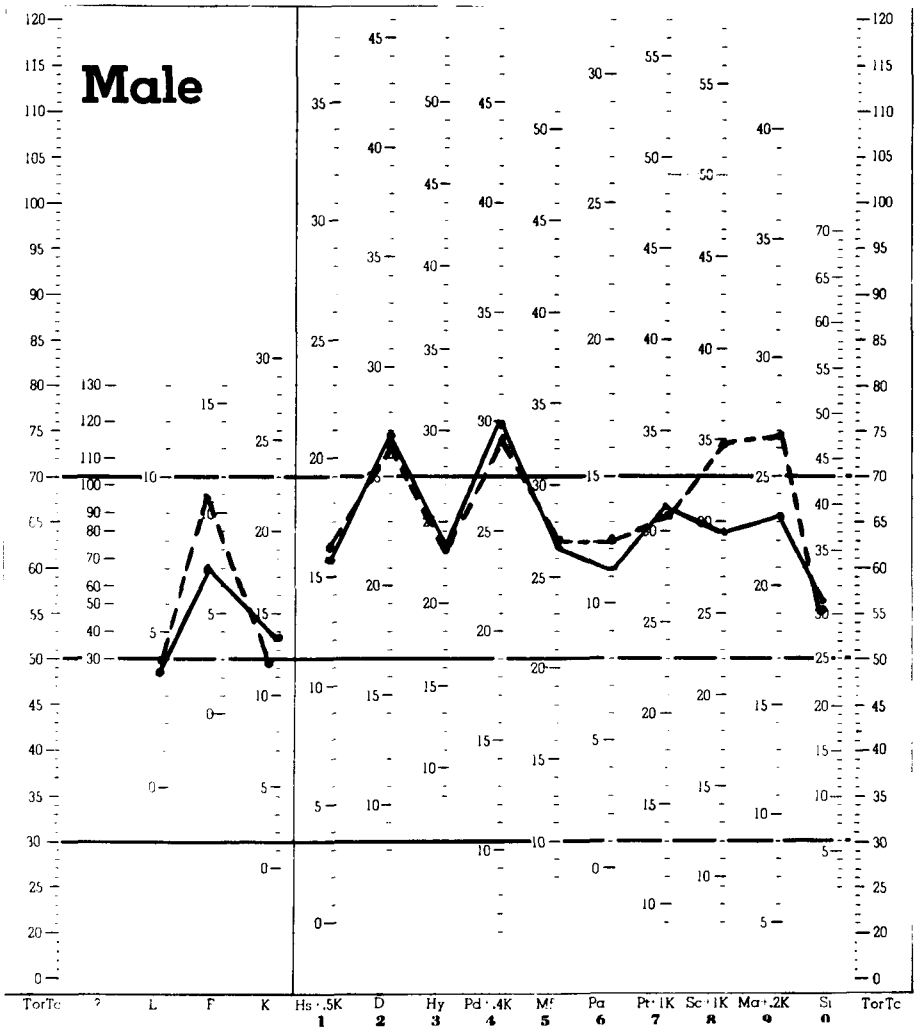
While restrictions on privileged information precludes the inclusion of anecdotal material to illustrate patients in each program, a description of a "typical" patient in each program will be given to fulfill this function.

## Methadone Maintenance Candidate

The representative patient accepted to the methadone maintenance program is 30 years old, black, has an IQ equivalent of 106 and comes from a lower middle class home. At the time of admission, he has completed 11 years of education, has a skill, and has worked 22.3 months on one job. This typical patient began to use drugs at the age of 17.6 and heroin at the age of 20 years. He has been using heroin for about 8.3 years suggesting intermittant use at least part of the time. He tends not to abuse other opiates but uses some non-opiate drugs. By

## Table 8

### Comparison of MMPI Group Profiles of the Patients from the Two Drug Programs




**Broken Line - drug free group**

**Solid Line - methadone maintenance group**

the time he arrives for this treatment, he has already tried 3.2 treatment programs and has been able to remain voluntarily abstinent up to 8.2 weeks. Prior to the onset of drug use, the methadone candidate has not engaged in delinquent activities. His criminal history is comprised of 4.5 drug related arrests and .8 non-drug related arrests. He was first arrested at the age of 22.4 years.

On the MMPI test, the methadone patient projects himself honestly. He is depressed and has an antisocial orientation. On the Herein scale, he is identified with the herein user. He has a relatively low frustration tolerance but can delay gratification for a period of time. His interest revolves around the near future.

Drug Free Candidate

The typical drug free candidate is a little younger than his counterpart in the methadone program. He is 26.9 years old, black, has an IQ equivalent of 108 and comes from a lower middle class home. He has finished 11.2 years of education, tends to have a skill and has maintained one job for 12.8 months. The drug free patient began to use drugs at the age of 15.9 and herein at the age of 20.4 years. He has been using herein for 5.3 years. He tends to abuse both other opiates and other drugs. Prior to this treatment endeavor, he has attempted 3.3 other programs. He can be expected to leave the community without completing the program. He has been able to remain voluntarily abstinent for 8.3 weeks.

Prior to the onset of drug use, he engaged in delinquent behavior. He has been arrested 4.3 times for drug related charges, and 2.5 times for crimes unrelated to drugs. His first arrest occurred at the age of 18.8 years.

On the MMPI test, this patient appears depressed, admits to many problems, and manifests disturbed thought patterns. He scores high on scales 4 and 9 suggesting acting out anti-social tendencies, and is correctly identified as a herein addict on the Herein scale. He has a low tolerance for frustration but can delay gratification for a period of time in view of rewards within the near future.

Comparison of the "Typical" Patients

The methadone maintenance patient is a little elder than the drug free resident. Both are black, have a lower middle class background, and are of average intelligence. Both candidates have completed about 11 years of school, and tend to have a skill which requires some training. The methadone maintenance patient has worked on the average about 10 months longer on one job than the drug free patient, however he is also elder.

The drug free resident began to use drugs at an earlier age but both patients state that the onset of herein occurred at age 20. The candidate on methadone has abused herein longer, probably because of his age. While both patients have used non-opiate drugs, the drug free person has abused other drugs

to a greater extent. The methadone maintenance patient does not indulge in other opiates. The drug free person abuses all drugs. The maximum period of voluntary abstinence from drugs for both patients has been about 8 weeks. Both have attempted 3 other treatment programs prior to entering the present facility.

For the person on methadone, antisocial activities ensued following the onset of drug use. The drug free individual has engaged in delinquent activities even prior to the use of drugs. While both have been arrested for drug related crimes, the drug free patient has been arrested more often for non-drug related criminal activities. He was arrested for the first time at a younger age.

On the MMPI test, the drug free individual projects himself as a person with many problems, is depressed, restless, and manifests bizarre thinking. The methadone maintenance patient appears more normal but is also depressed. Both individuals have antisocial orientations and identify with the heroin user, however, the drug free person tends to act out these inclinations. Both individuals have a relatively low frustration tolerance but can delay gratification for a period of time for rewards in the near future.

## Posthoc Analysis

All of the residents in the drug free program did not complete the three month program. Those who did not complete

the program often left against medical advice. Some left because of family problems. Of 30 patients who were subjects for this study, 11 completed the program and 19 did not. Having these data available, the author decided to explore whether differences exist between these two groups.

## Multiple Regression Analysis

Stepwise Multiple Regression analyses were performed on groups of variables separately. The criterion was coded 1 = completed program and 0 = did not complete program. No assumptions were made concerning the reliability of any results obtained because of the small number of subjects relative to the extremely large number of variables.

## MMPI Scales

Of the MMPI scales, only the F scale differentiates the two groups accounting for 16% of the variance in the criterion, ($p = .028$) (see Table 9). The group which completes the program has a higher F score than those who leave the program prior to completion.

## Drug and Criminal History

The number of drug related arrests discriminates the two groups accounting for 14% of the variance in the criterion, ($p = .046$) (see Table 9). Patients who complete the program have a more extensive drug related arrest record than those who

Table 9

Drug Free Program: Variables Discriminating the Patients Who Completed vs. Those Who Did Not Complete the Program

| Variable | N | Mean | S.D. | r | $r^2$ | p |
|---|---|---|---|---|---|---|
| F scale | | | | | | |
| Completed | 11 | 76.5 | 18.6 | .402 | .162 | .028 |
| Did Not Complete | 19 | 62.9 | 12.4 | | | |
| Drug Related Arrests | | | | | | |
| Completed | 11 | 6.8 | 6.8 | .367 | .135 | .046 |
| Did Not Complete | 19 | 2.8 | 3.2 | | | |

r = correlation of variables with criterion

$r^2$ = variance accounted for in criterion

do not complete the program.

Demographic Variables

None of the demographic variables were significantly different in the two groups.

TAT and Motor Inhibition Measures

The TAT prospective time span and motor inhibition measures did not differentiate the two groups.

F Scale and the Number of Drug Related Arrests

When the two variables which discriminate between the patients who complete and do not complete the program are added, the resulting variance accounted for is not significant (19% variance, $p > .05$). The number of drug related arrests shares its variance with the F scale. When added to the F scale, it does not add any unique variance.

# Chapter 4

## DISCUSSION

The similarities and differences found between the addicts in the methadone maintenance and the drug free programs will be discussed with reference to the significance and implications of such findings.

### Demographic Characteristics

Demographically, the two groups are similar except for the slightly higher age of the addicts in the methadone maintenance program. The difference in mean ages in these two programs is comparable to the difference in ages reported for the methadone maintenance and drug free programs in the literature. The mean age range reported for methadone programs is 26 - 33 (Brill, 1968; Gearing, 1970; Knowles, Lahiri, and Anderson, 1970; Rosenberg, Davidson, and Patch, 1972). For drug free communities, the reported mean age ranges from 18 - 29 (Hekemian and Gershon, 1968; St. Pierre, 1969; Vaillant, 1966). The samples do not differ in IQ, social class or ethnic background. Approximately two-thirds of each group is black and half have lower middle class backgrounds. The Ford Foundation (1972) reported that as of December, 1971, 60 - 70% of addicts were Black or Puerto Rican. The social class range disputes the traditional view of the addict as coming from the most deprived and disadvantaged homes (Chein et al, 1964; Preble and Casey,

1969). The sample composition thus does not differ descriptively from others in the literature.

Impulse Control

None of the hypotheses about levels of impulse control were supported. In fact, the one highly significant difference was contrary to the apriori prediction. Corroboration of the depiction of addicts as psychopathic and identified with heroin users was obtained but the extent of acting out this antisocial orientation was found to vary in the two groups.

As a group, this sample of addicts is not as impulsive as may be expected from previous reported sources (p. 15 - 16). The internalization ratio score and performance on the TAT and motor inhibition tests reveal the existence of some controls over behavior. The mean internalization ratio scores in both groups are more similar to the scores of normals than delinquents (Welsh, 1952). Performance on the motor inhibition and TAT evinces some inhibitory capacity and an ability to consider events in the future if only within the next week or month which symbolizes greater foresight than the heroin addict's planning and scheming for the next day's "fix." The existence of some control is further evidenced by the employment histories which revealed the persistence to maintain a job for at least 12 and 22 months respectively for the two groups. The data on education reveals the tendency to drop out of high school prior to obtaining a high school diploma

which was probably due to the interference of drug use with regular school attendance. Many of the addicts however, subsequently obtained high school equivalency diplomas which were not considered equivalent to the high school degree in this study.

The manifestation of some behavioral controls in the addicts may be a reflection of their background and experiences. 73% of the patients were 25 years old or older suggesting that opportunities to develop controls through experience could have occurred in their life in view of their age. Most have held several jobs. Some have married and established families which necessitates some consideration of the future. Most of these addicts have had prior treatments where control has been stressed. The addicts' ability to look into the future may also be a reflection of their status as individuals who have come for treatment. The decision to seek treatment requires the abandonment of immediate gratification for some consideration of the future whether it be the fear of going to jail or a genuine desire for help. The fact that all of the subjects were inpatients in the hospital for at least ten days prior to testing could also have influenced the findings, especially on the TAT and motor inhibition measures, since mature, controlled behavior, planning, and foresight are stressed in both facilities. The TAT measure has been shown to change as a result of experience (Ricks, Umbarger, and Mack, 1964). With the motor inhibition measure, Erickson and Roberts (1971) found differences

in impulse control among acting out delinquents between those who showed some ability to control behavior and the delinquents who could not.

Locus of Disparity Between the Two Groups of Addicts

The hypotheses proposed at the inception of this research study evolved from assumptions underlying the use of methadone maintenance and the conception about rehabilitation potential of addicts indicated by staff and patients in treatment programs. Outcome studies upheld the legitimacy of considering levels of control over behavior in determining rehabilitation potential (see p. 24-29). Based on the results of this study, it is apparent that the implication that the methadone maintenance candidate has fewer resources for rehabilitation and thus needs a "crutch" may be more attitudinal than realistic. The results suggest that it is the methadone candidate who is more likely to become successfully rehabilitated because his problems are more circumscribed. The failure of the measures to differentiate the two groups in the predicted direction is due to the fact that control is not the important discriminating factor. Most of the addicts have some controls developed. The differentiating factors involve the extent of pathology which the addict has as reflected by drug and criminal activities in which he has engaged and by MMPI personality assessment. In a 1971 study, Berzins, Ross and Monroe (1971) showed that contrary to the addicts of the 1950's and 1960's the modern addicts'

problems do not consist of a lack of control but are comprised of a general maladjustment in the social and sexual sphere. In an MMPI assessment of 490 males which has recently been promulgated, Callis and Ludenia (1972) found that severe psychopathology, sexual conflicts and/or lack of sex role identification characterized the drug addict subjects. These drug addicts were users of a variety of drugs. The results of this study imply that when the addict's main problem is restricted to heroin addiction, he is accepted for methadone maintenance. When multiple problems exist among which heroin addiction is only one facet, he is admitted to the drug free program.

Patients in Each Program: a Description

The addiction of patients in the methadone maintenance program tends to be restricted to heroin but is of a longer duration than in the drug free program. Criminal activity unrelated to drugs is less frequent and delinquency prior to the onset of drug use occurs less often. The first arrest occurs later in life.

The drug free group has a higher level of energy available for behavior than the methadone group. This hyperactivity is expressed in antisocial acting out both in the area of drug and delinquent activities prior to the use of drugs. Extensive criminal activities bring these addicts into contact with the law at an early age. The addicts tend to be multiple drug users which may partly account for their shorter duration of

heroin use than patients in the methadone program. The drug free patients feel that they have many problems.

## Patients in Each Program: Expanded Descriptions

Statistically significant intercorrelations of the variables correlating significantly with membership in a program, with other variables used in the analysis amplify the delineation of the type of addict which one can expect to find in each treatment facility. A comparison of the group MMPI profiles of each drug group further expands the description.

## Methadone Maintenance Program

The patients in the methadone program are older. They tend to have less education but more years of employment than drug free patients. On the MMPI scale, they are depressed, antisocial, less impulsive, manifest more frustration tolerance and greater ego strength. Antisocial acting out is limited to the use of heroin. The high price of heroin compels these addicts to engage in illegal activities which are proportional to the need for the narcotic drug. Despite their longer use of heroin, these patients began to use drugs at a later age in life than drug free patients. They seem to have resources for rehabilitation which is hampered by the heroin addiction.

## Drug Free Program

The patients in the drug free program are younger. They

have been employed for a shorter period of time but tend to have more education. On the MMPI scale, they tend to be restless, depressed, more impulsive, less tolerant of frustration and psychopathic in orientation. They exhibit bizarre thinking processes. Some inhibitory trends, and tendencies to internalize conflicts are evident which are associated with their proclivity for admitting problems. The extensive psychopathic identification in the drug free patients is expressed in both drug and non-drug related criminal activities. Experience with drugs is relatively early, beginning with nonopiates and quickly extending to all available drugs. The ego strength in these patients is strained by their myriad problems.

## Admission Criteria

The above description of patients in each program highlights differences between the two groups which imply the existence of specific admission criteria.

## Methadone Maintenance Program

Admission criteria can be inferred with relative facility for the methadone maintenance program. The program seems to restrict admission to older addicts with a major problem limited to heroin addiction and with few tendencies to act out in other directions. The expectation is that when the heroin addiction is controlled, the addict can mobilize his energies to the development of constructive behaviors which usually require

auxilliary services.

The admission requirements of the original methadone program to which some facilities have adhered parallel the findings in this study (Dole and Nyswander, 1966). In her evaluation of the Dole and Nyswander program, Gearing (1970) also stressed the necessity of screening out multiple addicts and alcoholics. Criteria inferred from the characteristics of patients found in other programs appear to be similar to the screening process of the program under investigation. Knowles, Lahiri, and Anderson (1970) describe their typical patient as male, Negro, 33 years old, not having a high school diploma, being without a delinquency history, and beginning the use of opiates at about age 17. A similar description defines the sample of patients reported by Perkins and Bloch (1970).

Drug Free Program

The drug free program seems to be available to addicts with histories of severe pathology involving a plethora of problems with a focus on antisocial activities. If the increasing incidence of multiple drug addiction among addicts is considered (Chambers, Taylor, and Moffett, 1972; Ford Foundation, 1972), it would appear that the majority of addicts would be found in drug free programs rather than on methadone maintenance.

Admission criteria in drug free programs are often nonexistent. In therapeutic communities, the first phase of treatment, replete with frustrations and obstacles, is used to weed

out the motivated from the unmotivated addicts. In the program used in this study, "screening procedures have been designed to choose residents who have hit 'absolute bottom' as drug addicts," (Druley, 1971). The implication seems to be that when the addict has no other alternatives, he is motivated for treatment and thus is a good prospect for the drug free community.

## Evaluation of Admission Criteria

The purpose of this study was to ascertain if conceptions concerning rehabilitation potential affect admission procedures. Rehabilitation potential must be assessed as capability to meet the requirements of and profit from the program, and potential for success upon discharge.

## Methadone Maintenance Program

> Methadone maintenance provides a <u>setting condition</u> for behavioral change, but in and of itself does not insure the occurrence of behavioral change... the most predictable behavioral effect as a function of methadone maintenance is cessation of heroin use, but not necessarily other drug use as the blocking effect of methadone is specific to opiate derivatives.
> Cessation of heroin use may in turn serve as a setting condition for further changes in behavior. For example, to the extent that an individual's criminal activity was specific to supporting his addiction, such activity would be expected to stop with the cessation of heroin use. To the extent that an individual's drug related behavior was the causal factor in his poor work history, stability in job performance would increase as drug related behaviors cease... It is possible to further extend this chain to encompass a vast range of behaviors. (Levine, 1973, p. 1).

Methadone is a dangerous dependency fostering drug of high abuse potential designed to treat addiction to heroin. It is a symptom relieving treatment. When the admission criteria select individuals who can be predicted to use it as a therapeutic tool rather than a drug of abuse, the probability of success is high. The guidelines for methadone dispensation are security measures against abuse and unnecessary addiction to methadone.

Basic criteria which have been used to determine success on methadone maintenance confirm the validity of the inferred admission criteria of this particular program. Fundamental discriminators of success which have been used previously have been the non-abuse of drugs, the absence of delinquent or criminal behavior, and remaining active on the program, usually, a function of the first two measures (Chambers, Taylor, and Moffett, 1972; Dale and Dale, 1973; Knowles, Lahiri, and Anderson, 1970). Dole's interpretation of the causal factors of the lack of social rehabilitation of some addicts on methadone was the continued use of alcohol, and other drugs, and the uninterrupted involvement in non-drug related criminal activities and delinquent behaviors (Press Conference, 1970). When such behaviors have been absent prior or during the addiction, it may be assumed that they will not occur when the addiction is controlled. Addicts are then able to engage in more productive behaviors. It is a well documented phenomenon that among successful methadone patients, employment increases and

incidents of arrest decrease as a function of time (Dale and Dale, 1973; Gearing, 1970). The higher success rates in methadone maintenance relative to drug free programs may be interpreted in terms of the existence of less pathology in the patients which results in a speedier and more predictable rehabilitation, and not due to the availability of a "crutch" for the methadone patients. It has been shown that when screening procedures are less selective, success rates are diminished (Rosenberg, Davidson, and Patch, 1972).

Whether symptom relief alone results in successful rehabilitation is questionable. Traditionally, success in methadone programs has been measured by employment, arrest, and extent of continued drug use. An exploratory finding reported by Connor and Kremen (1971) introduces a neglected dimension in methadone maintenance treatment. Based on interviews with 16 patients, the authors found that the major change which occurred in the patients on methadone maintenance was freedom from drugs, but that significantly smaller changes occurred in the areas of work, social, and affective functioning. The major complaint of the patients was their continued feeling of alienation from society. This is a significant finding in view of the author's finding in this study that depression and an identification with unconventional norms are problems which addicts accepted for methadone treatment must deal with. Willett (1973) also found that methadone alone does not produce changes in interpersonal behavior. If the purpose of the methadone program is to produce

functioning and contributing members of society, then the criteria of success must be re-examined and amplified to include the patient's feelings, attitudes, and problems in social adjustment to a different style of life. Gearing's (1970) finding that with increased participation on the methadone maintenance program the percentage of discharges due to arrest declined but that the discharges resulting from drug and alcohol abuse increased points to the continued existence of unresolved and neglected problems. The need for the re-evaluation of success criteria is further evidenced by the fact that those who continue to abuse drugs often concommitantly make gains in the sphere of employment reflecting ostensible rehabilitation but masking unresolved problems. The need for auxilliary services in methadone programs to respond to these problems is great. Further, if methadone maintenance is perceived as a transitional stage to eventual abstinence, then the role of ancilliary services looms in even greater importance.

Drug Free Program

> No man here stands alone. We together are one but many. Aware of failings and frailties of one's self. We now move toward the ancient concepts of honesty and love.
>
> To relate as human beings first and to project our favorable attributes and to draw from these attributes that which when cultivated will contribute most to our common goal - that of creating a new man unto himself (Jim Hess in Druley and Hughes, 1971, p. 2).

The goal of the drug free community is a total reorganization of standards and behaviors. The adjustment to such demands requires ego strength and some controls. Such a holistic approach appears more applicable to the treatment of global problems than a symptom relieving treatment.

When the admission criteria are evaluated from the vantage point of successful abstinence upon discharge, the screening process in this particular program seems to be undiscriminating. The patients who are admitted evince many behaviors which have been found to be prognosticators of an unsuccessful treatment outcome (see p. 25 - 27). Perhaps the minuscule percentage of successful patients in drug free programs is due to the acceptance of patients with a wide range of problems which cannot be effectively treated within a short period of time with one treatment approach.

Many patients leave the program even prior to completion. Since the probability of success is greater the longer a person remains in a program (Ford Foundation, 1972), completion of a program is sometimes used as a crude measure of success. In this group, the patients who completed the program admitted to more problems than those who did not complete the program. The former group also had a more extensive record of drug-related arrests. The credo of this drug free community is that "the veteran must be out front with his feelings and behaviors or he won't make it. Secretiveness, holding in, and keeping to himself insures failure," (Druley and Hughes, 1971, p. 1). It appears that the addicts

who can conform to this philosophy are the addicts who complete the program. Detailed data on the reasons for leaving the program prematurely was unavailable. However, it may be that the addicts who did not complete the program did not feel that they really needed help and were not willing to conform to the rigorous requirements of the community.

One plausible rationale for the admission of patients with histories of severe maladjustment at an early age to a drug free program is the view that treatment is a cumulative process which increases in efficacy with longer sojourns and multiple treatment attempts. The road to successful abstinence can thus be perceived as a gradual process requiring many setbacks and relapses (Alksne, Lieberman, and Brill, 1967). In fact, this drug free program defines addiction as "a chronic relapsing medical disease of unknown etiology," (Druley and Hughes, 1971, p. 2). Research data reported by Martin (1970) suggests that the chronic administration of narcotics creates a physiological disorder which persists many months after the narcotic has been withdrawn, which may be associated with an increased responsivity to stress, and which may be associated with relapse. If such reports are validated, then the expectation of prolonged abstinence will incontrovertibly have to assume the probability of relapses, expecially in view of the wide range of problems which must be treated.

## Conclusion

Drug addiction is a complex problem requiring longterm treatment. The function of methadone has been to shorten the addiction period and to pave the way for the pursuance of other goals. Not every addict however, is an appropriate candidate. Some addicts may have the potential to become abstinent within a short period of time without becoming enmeshed in the addiction cycle of methadone. Others must opt for the longer and perhaps more arduous process of drug free rehabilitation with many relapses.

Success in a treatment program is not only dependent on the characteristics of the patients who are admitted. Eventual success is the result of the interaction of many variables including the content of the program, the demands made upon the patients, the extent of involvement and supervision provided following discharge, and the attitudes of the patients about their rehabilitation. The drug free program places many demands on the patients to conform and to prove their motivation during inpatient treatment. The methadone patients on the other hand, are coerced to maintain some involvement with the outpatient clinic on which they are dependent for their methadone while the drug free patients are essentially on their own following hospitalization. Hart (1973) has found that addicts in a residential treatment facility perceive the addict as a weak-willed person who cannot control the use of drugs, and are ambivalent about prognosis for recovery, beliefs which can be detrimental

to rehabilitation. Such confounding variables make it difficult to predict success on the basis of patient characteristics. The variety of responses of patients to different types of treatment makes prominant the need for a variety of treatment programs which can be tailored to fit the need of the patient at the particular time in his addiction and life history. Some authors have found empirical differences among addicts which have implications for treatment (Berzins, Ross, and Monroe, 1971; English and Monroe, 1972). Coghlan et al (1973) have developed a program based on a combination of behavioral and psychodynamic approaches. In a select number of facilities, the trend has been toward the establishment of multimodal treatment programs (Jaffe, Zaks, and Washington, 1969; Jaffe, 1970).

Attitudinal Obstacles

One impediment toward greater flexibility and resourcefulness in providing appropriate programs for addicts is the perception of the addicts as a "type" and thus treatable by one mode of therapy. This may be one reason for the low success rate in drug free programs and the extensive abuse on methadone maintenance. Another equally important obstacle is the set of attitudes that patients and sometimes staff in a program have about their own and other programs. In the drug free program which was investigated, the denigration of methadone as a treatment modality is rewarded and supported by the members and authority figures, partly as a result of ignorance of its

purpose and efficacy when used therapeutically, and partly as propaganda to enhance the faith in their own program (observation by author). Such an attitude prevents good potential methadone candidates from being referred to a methadone program. In the methadone maintenance program used in this study, the problem involves the significance which methadone acquires for the patients. With increased inpatient hospitalization, methadone becomes a reward, and referral to a drug free community is experienced as a punishment (observation on methadone ward). This prejudiced view often results in failure to follow-up or remain in a drug free community when the referral is made.

The influence of attitudes cannot be underestimated. They are powerful in determining rationality and flexibility in considering treatment.

## Limitations of Study

This research study does not pretend to generalizability. The number of subjects was small, and the subject makeup was limited to male veterans from two distinct geographic areas. Differences in the performance of women addicts have been shown (Gearing, 1970). Veterans are a unique group with specific experiences and attitudes toward treatment within the Veterans Administration system. The addicts were primarily from urban areas. Generalization is also precluded by the variability in official and unofficial admission procedures and policies in programs which make any comparisons highly questionable.

A replication of this study is necessary using other programs to ascertain how universal the findings in this study are.

While most of the results in this study are based on weak relationships, they are comprehensible when compared to findings in the literature. Most of the variance accounted for in the criterion was due to variables encompassing drug and criminal history. Perhaps more variance would have been accounted for if measures of pathology in other areas of personality and development had been included in the study.

The question of suitability of the addict in each program is speculative. To validate the efficacy of the admission criteria which were distinguished, a follow-up of the patients would be requisite to determine if the predictions would be supported.

## Suggestions for Further Research

The range of problems which addicts display is extensive. The traditional therapeutic approach with addicts has been group therapy. It may be that some addicts would profit more from individual psychotherapy.

1. In drug free communities, the major therapeutic technique is confrontation with the goal of tailoring the addict's behavior to socially accepted standards. Complete obedience to peer authority is mandatory. To circumscribe treatment to this modality necessarily results in ignoring addicts whose problems do not involve the lack of socially acceptable behaviors.

One interesting research study would be to compare results of treatment in a group of addicts displaying appropriate social behaviors, one-half of which obtains treatment in a drug free community, while the other half participates in psychoanalytically oriented psychotherapy.

2. Adjustment to a "straight" society is an arduous task for the addict. Genuine desire and movement toward a more conventional life are sometimes hindered and threatened by the realization on the part of the addict that the life to which he has aspired is a routine, somewhat mechanized, and predictable one which is not comparable to the excitement and unpredictability of the life of the addict. Preble and Casey (1969) have written on the meaning that the busy, energetic, and goal-directed existence offers addicts. The ensuing depression and resurgence of drug thoughts have been observed in patients on methadone maintenance (observation by author and colleagues). It would be illuminating to investigate the universality and development of this reaction in order to evolve techniques to treat this problem.

SCORING SYSTEM FOR PROSPECTIVE TIME SPAN (EPLEY AND RICKS, 1963)

I. When to Score

A. Do not score stories containing 1) irreal beings, plants, and animals; 2) impossible actions and events.

Some examples of (1) are: legendary figures, (vampires, dragons, witches, devils, classical gods, and assorted monsters); theriomorphic beings (half-man half-fish, a woman who turns into a panther, animals with human intelligence); personified plant life (flowers that eat human flesh, drink blood); ghosts or ghostly, bodiless voices or limbs, (bodiless hands, huge saucer-like eyes in the sea; ghostly clouds or storms); science fiction, flying saucers, space-travel and paraphernalia (beings from outer space, radio messages from other planets, travel to other planets).

Some examples of (2) are: otherwise realistic persons who defy limitations of space and time by: possessing or being possessed by supernatural powers (allowing them to fly, live under water, pass through walls, control another's will, prophecy the future); by returning from the dead; by an unusual growth process (reversed growth, quick growth, aging without awareness (Rip Van Winkle); by supernatural speed (in work, achievement, translocation).

These stories manifest a quality of the dream and often occur in the story as a dream from which the protagonist awakes at the climax.

B. Do not score vague plots.

A plot is often vague when the person actually describes details of the picture without really composing a plot, or when he discusses the feelings and thoughts of the principal figures without weaving them into plot, or when he interprets the picture as symbolizing something else (man's struggle against nature, against himself). Sometimes, even when there is a plot, the span of the actions described may be so open to conjecture as to defy any reasonable classification.

C. Do score stories containing 1) realistic beings, plants and animals; 2) possible actions and events.

The range of the possible is limitless, but while there are innumerable ways for a person to manifest any length of span, a few general classes seem to describe the most frequent ones. Passing from the short to the long:

1) All of the action may take place either before or after mention of the situation depicted in the card. That is, the entire story may occur exclusively in retrospect or in prospect.

   1a) The plot may be laid in the past with the present in the story (defined as description of the picture) as the climax; or,

   1b) It may end as a horrible impasse, an unresolved conflict, or statement of uncertainty and impending choice between several alternatives. (In such cases, the neglected zone is scored as absent ("0") for that story.)

2) The main plot of the story may be a simple proceeding performed by the protagonist alone (he paces the hall of a maternity ward, strolls along a street, chops down a tree); or the protagonist may do something alone (practices his violin) and then go to join others (runs off to play ball).

   2a) The central plot may be a transaction between two or more people (the hero asks for the assistance and receives it or is rebuffed; he tells his mother about a nightmare and receives consolation; he presents a law case to a court and is successful; he loses his job and asks for it back; he is wounded in battle, he commits suicide, or murders another person).

3) The story may center about a prolonged translocation or transportation (a voyage, a quest, an expedition).

4) The main plot of the story may concern a serial process (series of proceedings) of degeneration, decomposition, and regressive, destructive change (dissolution of a promising career; decomposition of a marriage and family; gradual loss of virility; gradual physical decomposition through disease, especially syphilis; a process of mental deterioration leading to insanity).

5) The story may concern a serial endeavor or a continuous process of growth, development, and progressive, constructive change (development of a career; the hero undertakes and successfully performs work of increasing difficulty and importance; deepening of a relationship; mutual understanding and love in a friendship or marriage through long association and many crises; raising of children; growth of a business; continuous, competitive struggle for status, prestige, success and material symbols; scientific experimentation and research; spiritual and intellectual development of a people over a life-span; a lifetime of devotion

to a cause: fighting against the spread of communism, a struggle to subdue nature; organizing a beneficent government bureau; building a machine or a violin; writing a novel.

II. How to Score

Unless the criteria for a realistic story are met, other kinds of time are involved, so do not look for time span. When the criteria do apply, however, use the following scale:

1. span less than hour
2. span greater than hour, less than day
3. span greater than day, less than week
4. span greater than week, less than month
5. span greater than month, less than half-year
6. span greater than half-year, less than year
7. span greater than year, less than four years
8. span greater than four years, less than decade
9. span greater than decade, less than life (career)
10. life span

The variable which will be scored with this scale is <u>prospective</u> span, the span from the present to the end of the action in the story. The present is the description of the picture. When the average for each set of stories is taken, unscorable stories are not taken into account.

III. General Comments

1. We are oriented, in the main, toward the actions and interactions of a protagonist; however, it seems quite permissible

to score a story that deals primarily with a relationship between two people or groups of people, or with the growth or destruction of a people.

2. It is important to distinguish between the setting, situation, or temporal location of the story as described, and the actions that take place within the setting. For example, a story may be located in Sophocles's Greece, in the Germany of World War II, in Orwell's 1984, in a Communist Utopia. But we are principally concerned with the actions of the central figures in relation to their time and place, and not to the time and place of telling the story; so that, instead of scoring a span of 2500 years in the first case, if the person described the rise to prominence of a Greek acrobat, only his career would be scored.

3. The time-span a person receives for any particular story depends half on what he has put there, and half on the extent to which the scorer's knowledge approximates his. This is to say that to assign a score, the scorer must share with the person a common knowledge of socially-fixed spans. For example; the college span is four years, and graduate school is between four and ten years; for a draftee, the army is either six months or two years; a professional career in business or in the academic world is ordinarily between twenty-five and forty years; a battle may last between a few hours and a few days, a campaign six months to a year, a war from a year to four years. It takes a few minutes to stroll around the block; a day to cross the continent by plane, four days by train; a murderous act may be over in a few seconds; and so forth.

4. For the sake of consistency in scoring among a group of persons, it is a good idea to set an arbitrary span for some types of vague or idiomatic statements. For example: score #7 (4 years) for a "few years," and #8 (10 years) for "quite a few years"; if doubtful from the context, score #4 (a month) for "soon after"; and also score #4 for the span of "getting over" a refusal, death, or failure; and stick to these arbitrarily unless they blatantly contradict one's intuition.

5. Stories with fairy-tale endings ("and they lived happily ever after," "they parted and never saw one another again") do not indicate prospection, but just the opposite: a disregard for the reality of outcomes. When these occur, score the action up to that point and then quit.

SOCIAL CLASS SCALE (HOLLINGSHEAD AND REDLICH, 1958)

Class Status = (Residence x 6) + (Occupation x 9) + (Education x 5)

1. Residential Scale (residence of addict as a child)
    1. single family houses - expensive
    2. apartment in a "good" area
    3. 5-6 room single family house in an area where the houses are close to the street. Not so well-landscaped as #2
    4. multiple family home
    5. old tenement areas
    6. slum neighborhood
2. Occupational Scale (occupation of head of household - parent)
    1. executives and proprietors of large concerns and major professionals
    2. managers and proprietors of medium sized businesses and lesser professionals
    3. administrative personnel of large concerns, owners of small independent businesses, and semiprofessionals
    4. owners of little businesses, clerical and sales workers and technicians
    5. skilled workers
    6. semiskilled workers
    7. unskilled workers
3. Educational Scale (education of head of household - parent)
    1. graduate professional training - completion of recognized professional course which led to receipt of graduate degree
    2. university graduation - BA
    3. partial college training, at least one year but not completion
    4. H. S. graduation

5. partial H. S. - completion of 10th or 11th grade
6. Junior H. S. - completion of 7th to 9th grade
7. less than 7 years of school

| Class | Range of Scores |
|---|---|
| I | 20-31 |
| II | 32-55 |
| III | 56-86 |
| IV | 87-115 |
| V | 115-134 |

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