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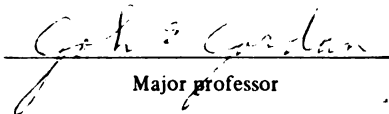
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An Investigation of
Selected Non-intellectual and
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ABSTRACT

AN INVESTIGATION OF SELECTED NON-INTELLECTUAL AND CERTAIN PERSONALITY VARIABLES, AND THEIR RELATIONSHIP TO HEROIN ADDICTION

by

Jerome Jay Gallagher

It was the purpose of this study to investigate selected non-intellectual and certain personality variables, and to further investigate the relationship of these variables to heroin addiction. The study was conducted at the Ingham County Jail, Mason, Michigan, with a sample of 64 incarcerated, male subjects.

The design of the study used the 16 Personality Factor Questionnaire to measure the personality variables for the subjects, and a Demographic Data Composite was composed to assess the non-intellectual variables for the subjects.

The subjects were composed of two groups, one of which had a history of addiction to heroin for a minimum of six

months, and the other group which did not.

An analysis of variance was performed for differences between the two groups. This consisted of a total of 30 analyses of variance, 16 being performed for the 16PF variables, and 14 for the Demographic Data Composite. An inter-correlational matrix was also constructed for each of the groups to determine the strength of the relationships among the variables within each group.

The statistical analysis revealed a significant difference between the two groups on five of the 16 personality factors of the 16PF. These five factors were:

<u>16PF Item Number</u>	<u>Name of Variable</u>	
2	Dull vs Bright	F = 32.260, $p < .05$
3	Easily Upset vs Calm, Stable	F = 19.831, $p < .05$
10	Practical vs Imaginative	F = 35.380, $p < .05$
11	Forthright vs Shrewd	F = 5.192, $p < .05$
12	Self-Assured vs Apprehensive	F = 15.474, $p < .05$

On variable 2, the addicted group demonstrated a significantly lower score than did the non-addicted group, indicating that the addicted group was duller and less capable of abstract reasoning. On variable 3, the addicted group produced a significantly lower score than did the non-addicted individuals, suggesting a less stable, more emotionally changeable characteristic. On variable 10,

the addicted group was again lower than the non-addicted group, indicating that the addicted individuals appeared more practical and "down-to-earth" than were the non-addicts. On variable 11, the addicted group possessed a higher score than did the non-addict, which indicates that he was more astute and worldly and less forthright and unpretentious. On variable 12, the addicted group was higher than the non-addicted group, demonstrating a higher incidence of troubled, worrismatic, insecure, and apprehensive characteristics.

The statistical analysis further indicated that the two groups differed significantly on four of the Demographic Data Composite items. These items were:

<u>Variable Number</u>	<u>DDC Item Number</u>	<u>Name of Variable</u>	
20	5	Marital status of subject	F = 8.001, p<.05
23	8	Grow up with true father	F = 7.209, p<.05
24	9	Educational level of true father	F = 4.788, p<.05
26	11	Grow up with true mother	F = 4.144, p<.05

On variable 20, the addicted group showed a lower incidence of marriage than did the non-addicted group. On variable 23, the addicted group showed a higher frequency of growing up without their true fathers. On variable 24, the addicted group indicated they were sons of fathers with a significantly lesser amount of education than were the

non-addicted group. On variable 26, the analysis revealed that the addicted group demonstrated a lower frequency of growing up with their true mothers than did the non-addicted group.

The inter-correlational matrices for the two groups indicated that the correlational relationships of the variables within each group exhibited a degree of internal consistency, and that the 16PF was more internally consistent for the non-addicted group than for the addicted group (35 significant correlational relationships for the non-addicted group, 23 for the addicted group). Also, these matrices indicated that the internal consistency for the Demographic Data Composite was approximately the same two groups (27 significantly correlational relationships for each of the two groups).

Appropriate to the original intent of the study, the differences on the total of nine variables were shown to have definite implications for the clinical approach to psychotherapy with the incarcerated addict at the Ingham County Jail.¹

¹This study is related to a collection of studies based upon the clinical and therapeutic aspects of drug addiction presently being conducted under the direction of John E. Jordan, College of Education, Michigan State University, East Lansing, Michigan, 48823.

AN INVESTIGATION OF SELECTED NON-INTELLEC-
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By

Jerome Jay Gallagher

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Dedicated to

Ms. Felix and Ms. Loopus,
two sincere and life-long friends.

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CHAPTER I

INTRODUCTION

Millions of words have been written about the "drug problem" since it became a headline issue a few years ago. Many of these words clash and cancel out each other. The confusion that has resulted makes reading in the drug field almost as "risky" as taking the drugs themselves. It is altogether possible to get an overdose of information adulterated with misinformation if one does not know and respect the source, and if one proceeds blindly without guidance.

One trend or approach in recent research has been that of dealing with personality variables, and investigating the relationships these variables have with particular behaviors. Although an explanation of the relevance of these studies properly belongs in a review of literature section, it is notable that the concept of investigating personality characteristics and their relationship to behavior is not new. What is notable, however, is that these personality characteristics were specific, isolated, and even predictive about many populations (i.e., college freshmen, retarded

children, teachers, airline hijackers, etc.) but they were general and non-specific about other populations (among them drug abusers).

Another popular device for investigating population characteristics has been that of demographic data. Many times the investigator feels that a study is much more meaningful if the personal and historical variables are summarized about the population or sample under investigation. This concept truly does lend a measure of credibility and interest to a study, but more importantly, demographic variables have proven to be very indicative of characteristics within the population, and relative to particular behaviors. The literature review section of this research deals at length with this matter, but the relevance of demographic data is also important to the reader as he approaches the study of investigating a population.

It is therefore the burden of the investigator's instruments to supply the underpinnings and basic data for his study. Although the conclusions derived from an intensive investigation of any data may be somewhat less than correct, or even unjustified, these conclusions are nonetheless modifiable and challengeable, based upon the accuracy and objectivity of the data. Data via analysis leads to conclusions, and despite vast differences in these con-

clusions among experimenters and investigators, the process of scientific investigation demands a certain quality of data.

The present investigation deals mainly with a) Personality Variables, and b) Demographic data. The title of the present study indicates that there are quantifiers and modifiers which have been placed upon the data.

Selected Non-Intellectual (Variables) refers to the demographic data, a detailed description of which appears later. Certainly it would be impossible to collect and analyze all of the demographic and personal characteristics about a sample, but rather it would be more meaningful and applicable to choose those few which appear to lend themselves to investigational analysis. The term Certain Personality Variables likewise signifies that the present study dealt with a limited quantity of these variables by way of a particular testing technique, and the reader must not be misled into believing that his or her favorite personality characteristic will necessarily be included.

It is only by quantifying and delimiting the data that a generalizable conclusion may be drawn. It is only by making clear the limits and precautions which the data (all sample data) imposes that the reader may make a realistic and meaningful application and generalization of the

results.

Statement of the Problem

The purpose of this study was to examine selected non-intellectual, demographic-type, sociological variables, and also certain psychological factors and the relationships that they may have to heroin addiction. More specifically, an attempt was made to analyze the relationship of personality characteristics, social and personal, socio-economic and family backgrounds, and the apparent commitment to habitual involvement with heroin.

In the State of Michigan arrests for the possession of narcotics and dangerous drugs increased by 110% in 1969 over 1968. This is particularly alarming since in 1968 the Federal Bureau of Narcotics and Dangerous Drugs ranked Michigan fifth in the United States for drug arrests. Arrests for selling were up 48% for the time period mentioned above, with a 79.5% increase in heroin cases. There was an increase of 98% in arrests of persons under 21 years of age, 111% of persons over 21, and an 88% increase in total arrests (90). Locally, in Lansing, the statistics are similarly alarming.

In actual figures for the period of the year 1970, 222 arrests were made in the Lansing area for the sale of narcotics, 820 arrests for the possession of narcotics,

and 66 arrests for the use of narcotics (39). Nine hundred and seventy two males were in this group and 121 females. Persons arrested in the age bracket of 17 to 21 totaled 603. Four hundred and ninety persons arrested for possession, use, or sale of narcotics were over 21 years of age. Further, the Michigan State Police estimate that approximately one-third of all the narcotics arrests in the entire state of Michigan take place in the Lansing area (50).

The Ingham County Sheriff's Office counted an average of two new heroin cases per week handled through their office as of September, 1969. From September, 1969 to March, 1970, a six month period, the Ingham County Sheriff's Department handled 148 cases of narcotics and dangerous drugs. Of this number, 107 were arrested in the county as opposed to 42 cases in Lansing and East Lansing. Of these cases, approximately 65% were marijuana oriented, and only 15% heroin related. Two arrests were for cocaine sale or use and the remainder were classified as dangerous drug cases (28).

A more recent evaluation of the Ingham County Jail (28) found that of the 230 incarcerated individuals, approximately 75% had drug related problems. This does not mean that the person was arrested for drugs per se, however, a large number of those arrested for Breaking and Entering, Armed and

Unarmed Robbery, and other similar charges, were found to have drug related problems. This means that in 1971, in the Ingham County Jail, there were at one point, more than 130 incarcerated persons with drug problems that were, at best, correlated or associated with felonious activities leading to arrest.

Eight years ago, the vast majority of substance abuse arrests had to do with minors in possession of alcohol, and drunk and disorderly persons. Now, the majority of abuse cases are related to "hard" drug abuse, which is a more prominent arrest factor than even marijuana, classified as a "soft" drug (90).

An additional barometer which indicates the seriousness of the drug problem in the Lansing community is the increase in reported hepatitis cases. Ingham County Health Department officials have expressed concern about the rapid rise of instances of hepatitis. Three times as many cases were reported in 1970 as compared to 1969, with the highest frequency among persons 17 to 23 years of age (70).

Dr. Dean Tribby, Acting Public Health Director for the county, stated that, "approximately 50% of the reported hepatitis are due to serum hepatitis, following drug use or experimentation". A total of 53 cases of hepatitis were reported in the first ten weeks of 1970 as compared

with 18 for the same period in 1969, and only seven in 1968 (70).

Several professional persons (17) working on the west side of the city of Lansing have estimated that there are at least 1500 heroin addicts on that side of town alone. Although the exact numbers of heroin addicted persons are not available, and may never be, it has been the experience of the Tri-County Mental Health Board staff that the hypothesized statistic is realistic, and does truly reflect the epidemic magnitude of drug use in the city of Lansing (90).

The drug users themselves report that 65% to 75% of their friends between the ages of 17 and 21 use drugs regularly as opposed to a one-time experimenter. Many drug users, when asked, will state that all of their friends have experimented with drugs at some time (17).

It should be noted that this is almost entirely heroin use. Conversations with other professional workers, including physicians, attorneys, law enforcement officials, emergency room personnel, and educators indicate they have had a substantial and alarming increase in the numbers of persons using drugs (91).

An integral part of the statement of the problem must include the incidental costs to the public. Ac-

According to the 1970 Comprehensive Law Enforcement and Criminal Justice plan of Michigan (65), Project Rehabilitation in Grand Rapids estimates that one heroin addict on the street costs the city \$10,500.00 per year. Should the addict be arrested, an additional estimated cost of \$16,800.00 in jail, police, legal, and court costs is introduced for a total of \$27,300.00 per year per addict.

Officials in the city of Detroit estimate that approximately \$40,000,000.00 per year is spent by addicts on drug purchases. They also report subjects with a \$150.00 per day, seven days a week, 365 days per year, four year heroin habit(70). It has been the experience of the Tri-County Mental Health Drug Program staff in Lansing that it is not uncommon to see a subject in the Lansing area who has a \$150.00 per day habit. This constitutes payments of \$54,750.00 per year by one addict. The general rule, however, is somewhere between \$50.00 and \$100.00 per day.

It should be becoming clear that the drug abuse problem is not confined only to the very largest metropolitan areas, nor is it just "someone else's problem". Drug abuse is a very serious social, cultural, psychological, educational, economic, and law enforcement problem in the Lansing area.

Justification for the Study

As the literature review section will indicate, generalizations concerning the heroin addict are based on experimentation and investigation, but also on conjecture, speculation, and contention. Some of the studies reveal paradoxical summarizations and conclusions. For decades, the heroin addict has been a virtual thorn in the side of psychologists, educators, law enforcement officials, and researchers. Some experimentation has been attempted with this population, but the best results are anything but generalizable and therapeutically often meaningless. This is to be expected, however, when conclusions and generalizations are supposedly applied to a population which is, for the most part, unspecified, unlimited, undescribed or undefined.

The present study intends to describe and define a sample of heroin addicted individuals. It further purports to fill the vacancy which the literature displays concerning the heroin addicted individual within a social and personality framework.

Hypothesis

The research hypothesis proposed by the investigator was that a significant relationship existed between selected non-intellecutal variables and heroin addiction,

and further that a significant relationship existed between certain personality variables and heroin addiction. The significance of these relationships was to be indicated by a difference between the heroin addicted group of subjects, and the non-heroin addicted group of subjects.

Assumptions

The following assumptions have been made by the investigator:

1. Certain personality variables are measured by the 16 Personality Factor Questionnaire (69).
2. These variables are related to heroin addiction.
3. Selected non-intellectual variables are measured by the Demographic Data Composite Questionnaire.
4. These variables are related to heroin addiction.

Theory of the Study

The main purpose of the present study is one of describing rather than "controlling". Likewise, this study intends more to operationally define rather than predict, the hypothesis behind the study being that the heroin addicted male incarcerated within the Ingham County Jail is different than the non-heroin user incarcerated within the Ingham County Jail. The study further purports to define and describe each sample in clear and understandable termin-

ology, and to demonstrate a difference between the two groups based upon the chosen indices. An additional implication related to this study is the fact that the conclusions are intended to be helpful primarily to the clinician. The research and investigation which supply the basic data and concepts were derived from a clinical, treatment setting, and the conclusions will hopefully enhance and modify the treatment of the heroin addict. Moreover, additional material, particularly the literature review, will demonstrate the lack of coordinated efforts of treatment which the addict has received. This problem is one which this study seeks to address, although somewhat less directly.

Definition of Terms

A "comprehensive" glossary of terms and phrases appears in Appendix A. Due to the novel and extensive terminology which has evolved in the drug culture, this particular approach better serves the descriptive purpose of defining terms rather than listing them here. Appendix A is a result of editing numerous documents concerned with "drug talk", plus an accumulation of those terms which this investigator has become familiar with through his personal contact with drug

users.

In addition, the review of literature is organized such that a great deal of the terms relative to the structure of this study are defined therein. An example would be question number one, which deals with the definition of a narcotic and its differences and similarities with hallucinogens, stimulants, and sedatives. Another example would be question number two, which deals with the definition of heroin and its related derivation and transport. Further, question number five addresses the issue of defining and differentiating the terms drug dependent, drug habituated, and drug addicted.

The Ingham County Jail, where this study was conducted, is a maximum detention and correctional facility located in Mason, Michigan. The jail is quite modern, being constructed in 1962, and has a capacity for 200 males and 20 females. Mason, the County Seat of Ingham County, is located 13 miles south of Lansing, Michigan, and 22 miles north of Jackson, Michigan.

General Objectives and Questions Addressed by the Study

The study seeks answers and makes comments relative to the following:

Two populations will be sampled randomly within the

Ingham County Jail. One population will be heroin addicted individuals and the other will be non-heroin addicted individuals. This study seeks to determine whether there exists a significant difference on 14 demographic data variables and to describe the magnitude and extent of that difference.

The study further seeks to answer the following questions:

Based upon a personality assessment scale, does the sample of heroin addicted persons differ significantly (statistically) from the sample of non-addicted persons? If the general personality profile for the heroin addicted population is significantly different from that of the non-addicted population, does further analysis yield sample items and variables within the personality scale which demonstrate additional significant differences between the two populations? The major thrust of this investigation addresses itself to the issue of yielding a socially, statistically, and/or therapeutically meaningful picture of the heroin addict.

Plan of the Study

Chapter I includes the statement of the problem, the research hypothesis and assumptions, the justification for

the study, and the theory of the study with general questions and objectives specified.

A review of related conditions, research, history, and literature is presented in Chapter II, followed by a design of the study in Chapter III and an analysis of the data in Chapter IV. Chapter V contains a summary of the study, and the conclusions and recommendations of the investigator based upon the results of the study.

CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

In reviewing the research, it became necessary to select only those books, articles, dissertations, etc., which related directly to the purpose and needs of this study and its objectives. However, in order to meet the wide variety of needs of the general reader, the educator, the researcher, and the writer, it was necessary to uphold a broad criteria of selection while maintaining relevance. The objective of the review was to be comprehensive and inclusive of various opinions and data. Although one's philosophical, ideological, and moral stance toward drugs is very important, and should be explicit and apparent, this writer's bias purports to reflect a spectrum of opinion. The implication herein is that not all of the resources are of equal value.

No one needs to know or read everything published to have a good working knowledge of a particular field. To try to read, and likewise, experience everything would defeat the purpose of defined studies and specific research

papers such as this one. A delineated and focused investigation, however, presents the reader with a reference source which fits a particular purpose or interest. In developing a process of selection and weighing the reference data which apply to this study, this writer has coded a criteria which is as follows:

1. Basic reference books which should be included in any well stocked library concerned with drug addiction.
2. References which relate to the interests of a specialist who needs detailed scientific data concerned with drug abuse.
3. Particularly helpful references to the individual reader who is just getting started, and needs basic orientation into legal and moral controversies as well as reliable factual knowledge.

Author Orientation

It is safe to assume that a writer or a researcher will produce a more meaningful and interesting piece of work if he is personally enthusiastic about his material. Aside from isolated academic motivation such as a grade or perhaps even a degree, the basic theory of higher education would tend to support the notion that a student eventually

becomes immersed in an area of investigation which he finds fits his needs and interests. This argument or proposition may be compared with the statistical implication of describing a sample so adequately and completely that the reader is placed in the position of generating appropriateness and implications of the study to another population based upon the strong similarity between samples. Likewise, it would seem logical that the reader become familiar with some basic interests and inclinations of the researcher in order to deem a particular study relevant to himself based upon his shared similarities with the writer.

As a third year Doctoral Candidate, this writer was employed by the Community Mental Health Board of Ingham County, Michigan. He was titled a Clinical Psychologist, Program Director, and employed full time with a federally funded program called the Drug Abuse Treatment Program (DATP). The funds, approved by the Department of Health, Education, and Welfare in Washington, were administered by the county. The initial grant was approved and funded on August 1, 1971, for the amount of \$384,000.00 per year for eight years. This writer joined the program on August 6, 1971, and has taken an active part in organizing a treatment clinic, including testing and all forms

of group and individual therapy. He had assisted in implementing and organizing a community approach to rehabilitation of the drug addicted individual through: a) intensive psychotherapy within the county jail, b) job placement service for released inmates, and c) continued counseling and therapy at the community centers after the inmate is released.

There are additional factors concerning the DATP which apply directly to the reader's orientation to this study. One of these factors is that his program dealt only with heroin-addicted individuals. The scope of the grant originally included the field of alcoholism as a group which was eligible for treatment, but because of large caseloads and liberal release procedures for alcoholic individuals (from the county jail), alcoholics were low priority subjects. Out of an estimated caseload of 150 subjects there usually existed one alcoholic. The problem was similar to users of marijuana and other "soft" drugs. These cases were assigned low priority status, and were relatively obscured by the huge numbers of "hard" addicts. This group was composed almost entirely of heroin addicts. Hence, the primary concern of the program and the true subject under investigation and treatment by the federal funds and the administration of governmental

monies in Ingham, Eaton, and Clinton counties was the heroin addict.

At the time of this study, the writer was spending approximately forty hours per week involved with the hard core heroin addict. He was exposed to this individual continuously either in therapy or group encounter, in consultation with defense lawyers or with the prosecutor's office, in staff meetings, or jail administration. The heroin addict and his story were a real part of the author's daily routine...more real than all the literature available and more real than any one documented case history could be.

The orientation of this writer is based upon clinical and empirical evidence. It is hoped that the reader has been given the data and material to better relate with this researcher, either empathically or otherwise. Regardless of the appropriateness of this background information to the study, this writer cannot help but believe that future researchers will be more at ease as they formulate implications and generate new hypotheses from this study.

Terminology and Vocabulary

Within the United States, all drug "subcultures" share some well defined characteristics. They are all

mobile, they are all active (securing finances, primarily), and they are all illegal. Somewhere within the interaction of these factors lies a source of energy for generating a phenomenal degree of inventiveness. The crimes are often ingenious, the living conditions are regularly constructed to accomodate the individual while he is under the drug influence rather than while he is normal, and last, the terminology which has evolved is unique and novel. A "comprehensive" drug glossary appears in Appendix A, and was drawn from numerous documented sources and personal observations.

Approaching the Review

The method chosen for reporting the related literature and research was selected for its projected effectiveness notwithstanding its unorthodox format for a doctoral thesis. The wide range of data and the varied themes upon which the review process focused resulted in some fairly specific areas. Each of these areas has direct meaning and relevance to the criteria stated earlier in this chapter, but not necessarily are these areas smoothly associated with each other in a consecutive manner. Therefore, the "Question and Answer" form of literature review was deemed appropriate, wherein the writer sought to anticipate the questions and concerns of the reader. This approach

does permit the grouping of related and similar data via questions which would naturally follow each other, but also it permits abrupt jumps in the thought trend to cover a much broader and more expansive quantity of meaningful material.

BASIC QUESTIONS IN THE DRUG FIELD

Q 1 What is a narcotic?

There are basically four groups of drugs which are commonly abused today. They are: a) hallucinogens, b) stimulants, c) sedatives, and d) narcotics.

Hallucinogens (also called psychedelics) are drugs capable of provoking changes of sensations, thinking, self awareness, and emotion. Alterations of time, distortions in space perception, illusions, hallucinations and delusions may be either minimal or overwhelming, depending on the dose.

LSD is the most potent and test-studied hallucinogen. Besides LSD, a large number of synthetic and natural hallucinogens are known. Mescaline, from the peyote cactus, Psilocybin, from the Mexican Mushroom, morning glory seeds, DNT, STP, ANDA, and dozens of others are known and abused. Along with

its active component THC, marijuana is medically classified as a hallucinogen.

Sedatives induce sleep. When taken in small doses they reduce daytime tension and anxiety. Barbiturates constitute the largest group of sedatives. When used without close supervision, the possibilities of taking increased amounts and becoming extremely dependent are present.

The tranquilizers are drugs that calm, relax, and diminish anxiety. Like sedatives, they may cause drowsiness. Tranquilizers are used to treat serious mental disorders. Some tranquilizers that are used to treat serious mental disorders are not dependence producing, but it is tranquilizers like meprobamate (Miltown, Equinal) to which dependence can be developed.

Sedatives are physically addicting. Tolerance to the effects of barbiturates develops and withdrawal effects occur when the drug is stopped. A strong desire to continue taking the drug is present after only a few days on large amounts. Addiction to fifty or more sleeping tablets a day is commonly reported, and death may result from unsupervised and medically unsupported withdrawal from barbiturates.

Stimulants are drugs, usually amphetamines, which increase alertness, reduce hunger, and provide a feeling of well-being. Their medical uses include the suppression of appetite and the reduction of fatigue or mild depression. Many stimulants are known, including cocaine, amphetamine, benzadrine, dextroamphetamine, and methamphetamine.

Since tolerance to high doses of amphetamines develops, and withdrawal symptoms occur, large amounts of amphetamines are considered physically addicting. Small amounts are psychologically habituating.

A narcotic is a drug that relieves pain and induces sleep. Narcotics, or opiates, include opium and its active components, such as morphine. It can also include heroin, which is morphine chemically altered to make it about six times stronger. Narcotics also include a series of synthetic chemicals having morphine-like action. Heroin accounts for 95% of the narcotic addiction problem in this county. It is not used in medicine, and all heroin in the United States is smuggled into this country. Morphine, methadone, and meperidine are used medically and are frequently seen on the black market. Paregoric and

cough syrups containing codeine are also abused.

When addiction exists, stopping the drug produces withdrawal sickness some 12 to 16 hours after the last injection. The addict yawns, shakes, sweats, his nose and eyes run, and he vomits. Muscle aches and jerks occur along with abdominal pain and diarrhea. Chills and backache are also very frequent. Hallucinations and delusions can develop, and these are usually terrifying. An injection of an opiate usually brings about immediate relief.

Death resulting from narcotic withdrawal is very rare. Although the addict may be physically suffering, there exists no medical evidence of a death resulting from narcotic withdrawal per se.

Q 2 What is heroin, where does it come from, and how does it get here?

In November, 1972, the CBS television network produced a national documentary titled "Sixty Minutes" devoted mainly to the topic of heroin. This television presentation researched and summarized the topic of heroin and its production and traffic better than most available documents - not only because of the program's recent and updated nature, but

also due to the foreign living and speaking CBS agents and newsmen and their true-to-life acquaintanceship with undercover heroin traffic. The answer to this particular question, therefore, was drawn from a CBS transcript of that "Sixty Minutes" program (63).

The strongest and the purest heroin in the world is a deritive of the poppy plant which grows in Turkey. Opium, which comes from the pods of the Turkish poppy plant, is one of the main financial enterprises for the country of Turkey. As the flowers mature, pods approximately one to one-and-a-half inches in diameter are formed. These pods, when they reach maturity, are scored with a knife, by hand, around their circumference, and twenty four hours later the "gum" or sap which flows from these pods is collected. Opium, to the Turkish farmer, has been his most lucrative cash crop. He has sold most of it to the government for a fair price, and the rest of it to the smugglers for a great deal more. His wife has used the seeds to make oil for cooking, the leaves for salads, and the remains for fodder to feed his livestock.

After it is collected in small ceramic containers, the opium gum is formed into blocks which are then sent to pharmaceutical houses around the world. Many

times these blocks of opium gum are used as currency in bartering situations. Often the farmer will store and conceal opium blocks to use as bargaining tools and tokens in later transactions. The farmers have used these blocks of opium gum as money for centuries. Opium gum will keep indefinitely and, in many ways, is as good as gold. The opium gum blocks can actually take on the characteristics of dowery money, bank account money, or a savings for a farmer's old age.

At any time, the smugglers will pay the farmer at least three times as much for his opium illegally as the government will pay him legally. And the farmer knows that the price can only go up.

Ten pounds of opium gum can be converted into one pound of morphine base. This is the first step on its way to heroin. Morphine base is smaller, thus easier to hide than opium gum. It is usually processed in lonely huts on the edge of the Turkish village. This processing is an easy affair - all that is needed is running water, a few pots and pans, some slake-lime and a fire. The product, morphine base, comes out looking very much like powdered coffee.

In the village the farmer makes his contact with the smuggler. This man, in Turkish, is called the

"Black Sheep". He is not difficult to find and everyone knows when he arrives in town, but there aren't enough narcotic agents around to stop the connection. A conversation was held with a young Turkish smuggler, who then stated he was retired, and he described just how easy smuggling was:

I went to the center of town. I spoke with three villagers. I told them I wanted to buy base morphine. I told them I wanted to buy thirty kilograms, and I would pay thirty dollars per kilogram. At that time I put the thirty kilograms of morphine base powder in my car - it had a false bottom in the floor, and I drove to Istanbul. There I waited for a couple of days for my exit visa, then I took the morphine base, by myself, to Marsailles (France). I had the telephone number of my contact and I called him. He agreed to pay me \$750 per kilogram. So during this first trip, I made a profit of \$15,000 American dollars. But the thing is, I am just a small smuggler. There are big business men doing this for very big profits.

It is interesting to note that it has only been during the last three or four years that the farmer in Turkey has become aware of the damage that his poppies are wreaking in the West. Stories of addiction - of misery and death - these stories bewilder

him. His family very seldom chews or ingests the opium, or even smokes it, for they call it poison, and they cannot understand why the addict in the west would open his veins to heroin. The ancient capitol, Constantinople, now called Istanbul, has become the most hospitable of capitols for the dealings of the merchant, both illegal and legal, who operate in narcotics. Istanbul is a commercial bridge between the East and the West. Long after Turkey's poppies wither and die, Istanbul will remain a transit point for smugglers bringing narcotics from Afghanistan and Pakistan, from the far east.

The big time smugglers manipulate from behind the scenes. These include legitimate businessmen and even parliamentary leaders whose respectibility goes unquestioned. Their carriers and agents are the men out in front. The Turkish police, whose salary usually amounts to \$75 per month, can be tempted by corrupt money dangled before them if only they would perform lackadaisically in their pursuit of smugglers. The police in Turkey are novices at the narcotics game - their narcotics bureau only being three years old. The punishment in Turkey for a narcotics violation is tough, and one would think

that it would deter a smuggler. The punishments are ten years in prison for pushing, life imprisonment for manufacture, importing or exporting, and death in extreme cases. Offenders customarily serve quite short sentences, and by hook or bribery, find themselves back on the streets in only a couple of years. This is a frustration for the Americans who are on the scene for the Bureau of Narcotics and Dangerous Drugs (BNDD). If the Americans are polite about it in public, in private they fume over the inefficiency and corruption of the Turkish police.

Of all the morphine base which leaves Turkey, it was estimated as of January 1, 1973, 50% of it was being transported by way of surface vehicles such as autos, trucks and trains. This is a major change in transportation mode from the year before when almost 80% traveled by way of ship. Regardless of the method of transportation, however, the morphine base must reach Marsailles, France, in order to be manufactured into heroin as Americans know it. Regardless of whether it travels through Munich, by truck or car, or across the Bosphorus by ship, it is estimated that 99.5% of all heroin in the United States, past or present, was manufactured in Marsailles, France.

The CBS transcript supplies estimates that 10 tons of pure uncut heroin finds its way into the hands of the United States addict directly from Marsailles, France, every year. This represents an annual financial involvement of six billion dollars retail to the American addict. This is what police and movie makers mean when they talk about the "French Connection."

It must be remembered at this point, that heroin in any form, for any purpose, in the United States, is illegal. It is not used for medicinal purposes.

Marsailles is the biggest port on the Mediterranean. It sits as a "half-way house" between the opium growers of Asia Minor and the heroin addicts of the United States. In the Port of Marsailles - the port which was already Asian when the Greek mariners came there 600 years B.C. - it is still extremely easy to smuggle a pound or two, or a hundred pounds of pure, uncut heroin to a waiting ship. The "French Connection" and the related smuggling relies heavily on the compactness of its goods and the enormity of the trade. A few bags more, a few pounds more, a few gallons less oil per barrel - who would ever notice it? Often a few fistfuls of the white powdered heroin is worth a great deal more than the leaky tramp steamers

which transport it across the oceans.

The city of Marsailles has the distinction of producing the world's purest and therefore most expensive heroin. Some 30,000 villas are hidden and secluded in the surrounding hills which border on three sides of the seacoast city. Any French kitchen could easily be converted into a laboratory producing extremely high quality heroin. This process does not take a particularly sophisticated set-up. Two hundred and fifty pounds of morphine base can be converted into 250 pounds of pure refined heroin in only a few days. The street value of this heroin is twenty million dollars. The next step in this operation is concerned with getting the heroin into the United States and distributed to the addict on the streets. Over 88% of all the heroin used in the United States arrives through New York. Despite all security and customs precautions, to a heroin smuggler, the United States looks like one giant sieve. To begin with, there are 2,000 miles of border with Mexico. There are 4,000 miles of border with Canada - largely unfenced and only sporadically patrolled. This provides easy pickings for a smuggler in a low flying plane. More than 100,000 small, private planes entered the United

States illegally last year and it is certainly safe to say that a few thousand more crossed the border without the benefit of customs. Add to that more than 70 million cars and trucks driven into the United States last year. A cursory check is as much as most of them can get without tying up border traffic for days. Commercial aircraft - planes from overseas - land 200,000 times a year at our international airports. Customs men have found heroin concealed in the structure of the planes themselves, not just in the cargo or in the passengers' luggage. And ships...46,000 last year (1972) - not counting 60,000 international ferry runs. And the cargo...literally millions of shipments each year - boxed, bagged, canned - from every country in the world. Obviously, heroin can be hidden almost anywhere. And the mails ...55 million packages per year - some of it sniffed by dogs trained to smell narcotics. Customs inspectors are able to open just one package in 20.

And finally, people. During the 12 months of 1972, 235 million people crossed the United States borders through more than 450 legal points of entry.

Standing between all those people, cars, ships, planes, and parcels is a mere force of 5,600 customs

inspectors trying to keep heroin out. There are fewer than 2,000 of these inspectors on duty at any one time.

Once the heroin is on the street, a bag weighing one kilogram (slightly over one pound) may have a value of \$250,000 to \$500,000. It may be "cut" (deconcentrated by mixing with milksugar, quinine, or other fairly innocuous soluble chemicals) again and again and eventually packaged in tiny glascine bags - enough of them to make injections for one hundred thousand heroin addicts.

Some of the more popular methods of smuggling heroin into this country include false bottoms in suitcases, body packs worn as a harness with pockets which fit tightly around the torso, children's toys such as dolls, stuffed animals which are stuffed with bags of heroin, and books which are hollowed out allowing a compartment between the two covers in which to conceal heroin. The federal government finds, however, that the most popular method of shipping heroin into the United States is in foreign manufactured cars shipped to this country for resale. Engine valve covers and gasoline tanks are found to have huge quantities of heroin packed tightly inside...

often as much as 400 to 500 pounds per automobile.

Federal and state agents succeeded in finding 4,000 pounds of illegal heroin last year (1972), but it was estimated that an additional 6,000 pounds of heroin found its way to the addict on the street during the same period of time.

When the heroin arrives in the United States, it passes down the line from connection to connection - from the importer to the wholesaler, then to the man who buys it in kilos and sells it in half kilos, then to the ounce man who packages it in plastic bags, then to the bundle man who purchases enough bags for twenty five fixes and finally to the street dealer who sells it to the addicts. At each step along the way the heroin is diluted, and the price is doubled or tripled. The process is completed when the addict buys his bags from his "contact"... bags which may contain 98.5% dilutant (glucose or quinine) and cost him \$100.00 every day.

Q 3 What is the quality of heroin bought on the street?

Heroin is invariably diluted with milksugar, quinine, or other materials. Capsules or cellophane bags, which may vary from 0 to 10% heroin, are sold

to users for two to 15 dollars each. The material is unsterile. Some of the heroin has been "cut" so much that the addict has a "needle habit" rather than a heroin habit. A "needle habit" is one in which the user obtains gratification from hustling for narcotics and injecting himself with the material even though it contains very little or no heroin. Medically, the introduction of any foreign substance directly into the venous circulation system will produce a dizziness which is often mistaken for a "high". Addicts have been known to inject mayonnaise, peanut butter, and many other dissolved substances such as aspirin or alka-seltzer into their veins to achieve this "high".

Substance analysis centers in Detroit and Lansing have indicated that the percent of the heroin compound purchased on the streets has decreased from approximately 7% to 1½% during the period from 1970 to 1972. It is not unusual for a heroin addict, once incarcerated in jail, to suffer no withdrawal symptoms whatever because he has been buying and injecting pure glucose or quinine during recent months. The addict finds this very upsetting.

The quality of the heroin in other United States

cities, however, may differ considerably. Heroin purchased in Miami has been measured as high as 18% pure heroin. The problem this presents is a very serious one to the addict who is using \$50 a day worth of "Lansing" heroin, and is presented with the opportunity of using \$50 worth of "Miami" heroin. This difference in heroin concentration for the same amounts of injectable material would undoubtedly cause death from an overdose.

Q 4 What is it like to take a shot of heroin?

Immediately upon injection, there is a "rush". This intense feeling of "high" or euphoria is due to the introduction of a foreign substance directly into the circulatory system, and is caused specifically when the substance reaches the brain cells. This feeling has been likened to that of sexual orgasm. Generally, there follows a feeling of relaxation and contentment. This is accompanied by an "aura", or pleasant dreamlike state. This is called a "nod".

As tolerance is developed, the "high" is generally lost. The addict then requires heroin to avoid the withdrawal sickness. In other words, at

this point he is using heroin to feel normal. Customarily, the heroin use at this point begins increasing as withdrawal pains and symptoms can begin if any one dosage level is maintained for too long.

An overdose may occur when someone has lost, decreased, or never developed a tolerance because he was using very diluted heroin. If, by chance, he obtains pure heroin, he may die moments after the injection. This is customarily a violent death, characterized by convulsions and then unconsciousness.

Q 5 What is the difference between drug dependent, drug habituated, and drug addicted?

Although a drug may be defined as a substance which has an effect upon the body or the mind, this study concentrates only upon those drugs which have a potential for abuse because of their mind altering capabilities. Drug dependence is a state of psychological or physical dependence or both which results from chronic, periodic, or continuous use. Many kinds of drug dependency exists and they all have specific problems associated with them.

Dependency is the use of a drug routinely for a specific need or purpose. This would include a

need which may be physical (i.e., insulin) but also which may be psychological. Not everyone who uses a mind-altering chemical becomes dependent upon it. Alcohol is one common example of this point. The majority of persons who drink do not harm themselves or those around them. However, more than five million Americans are dependent on alcohol (1).

Habituation is the *psychological* desire to repeat the use of a drug intermittently or continuously because of emotional reasons. Escape from tension, dulling of reality, euphoria (being "high"), are some of the reasons why drugs come to be used habitually.

Addiction is *physical* dependence upon a drug. Its scientific definition includes a development of tolerance and withdrawal. As a person develops tolerance, he requires larger and larger amounts of the drug to produce the same effect. When use of the addicting drug is stopped abruptly, the period of withdrawal is characterized by such distressing symptoms as vomiting, convulsions, and even possibly death. A compulsion to repeat the use of the addicting drug is understandable because the drug temporarily solves one's problems and keeps the withdrawal symptoms away.

Q 6 What is the history of legislation concerning heroin in the United States?

The vast majority of the articles available concerning the history of legislation in the United States center about the theme that the drug laws in this country represent an epitome of over criminalization, ambitious legislation, and repression. One reason for this may be that the critic is more believable than the governmental representative and therefore finds more favor with the publishers. In any event, it is difficult to discover articles which are objective. The precaution must be exercised in selecting out the ideological favoritism found in the bulk of the references.

The Narcotics Division, under the United States Department of the Treasury, was instrumental in promoting congressional passage of the Harrison Act of 1914 (80). This law was originally intended partly to carry out a treaty obligation between the United States and numerous European and Western countries (75), but mainly to aid the states themselves in combating a local police problem which had gotten quite out of hand (76). Quite basically, the Harrison Act made

"drugs" illegal, and prescribed penalties for their use and possession. In other areas of law enforcement and legislation, when Congress had placed federal power and laws in the balance, local problems usually diminished or disappeared (79). In the case of narcotics control, the theory was that the state legislation and law enforcement officials were not capable of enforcing their laws, and the federal government was seen as the rescuing agency.

One of the authorities in interpreting and analyzing the resulting impact of the Harrison Act is Rufus G. King. Dr. King makes clear in his writings that the Harrison Act was the first piece of legislation which classified the addict as a criminal. He further writes that the United States, alone among civilized nations, was "...driven relentlessly down the long road dealing with narcotics and narcotic legislation ever since the end of World War I." He further states that the most grievous error of the Harrison Act was in allowing the narcotics addict to be pushed out of society and relegated to the criminal community (81).

The Harrison Act, which was not enforced until 1918, was described by some as basically a tax measure, designed and intended to bring the domestic traffic

of narcotics into the open under a licensing system so that the dispensing practices of the day could be checked. The law actually said nothing about "addicts" (partly because the word had not achieved its wide current usage), and specifically exempted the "patient" in the bona fide doctor - patient relationship. Narcotics users were "sufferers" or "patients" in those days. They could and did get relief from any reputable medical practitioner, and there was not the slightest suggestion that Congress intended to change this - beyond cutting off disreputable "pushers" who were thriving outside the medical profession and along its peripheries.

Dr. King's analysis indicated that two things, very likely related, distorted this intent. First, the Act was assigned, for enforcement, to the same individuals who were undertaking another piece of federal legislation - enforcement of the new prohibition law (60). And secondly, great public debate of the "dope menace" swept the country (54). The narcotic user suddenly became a "dope fiend". Official estimates of the addict population leaped to the fantastic figure of one million - mostly young people, and many "under the age of 20" (85). Dr. King typified

the American public as "terrified". The Narcotics Division of the Treasury Department came to the "rescue" with enforcement. The United States prisons began to fill with addicts and, surprisingly, reputable medical men who had tried to help them (60).

In 1922, the Jones - Miller Act was enacted by the legislature. This law primarily served to close the loopholes and tighten the rigid definitions and offenses described in the Harrison Act of eight years earlier. The Boggs Act of 1951 mainly increased the penalties for infraction of existing narcotic laws. Numerous state laws have also been enacted, and in practically all cases their purpose has been to make more effective the objectives of the Harrison Act of 1914. In recent years also, a number of international agreements have been made in an effort to curtail the illegal supply of drugs. These international agreements, however, have not been so effective as they might otherwise have been. This is due to the fact that in some countries, revenue from the opium trade is still a very important factor in the national economy. Although this aspect is dealt with in detail in this chapter, some of these illicit sources of opium supply may be of interest. They include China, Burma,

Malaya, Thailand, Iran, India, Japan, Lebanon, Italy, Mexico, and mostly Turkey (27).

In spite of the efficient organization of the Federal Bureau of Narcotics, it must be recognized that their assignment to enforce the anti-narcotics acts was extremely difficult, and this difficulty fell into two classifications. First was that of apprehending the persons involved, and the second was that of obtaining convictions.

Heroin was the principal produce of the illicit trade. This drug is of small bulk and light in weight and therefore it is easily concealed. Smuggling heroin into the United States provided very little real problem for the smuggler with any basic ingenuity. Some of the methods for smuggling are dealt with at length elsewhere in this chapter.

Difficulty in obtaining convictions was also important. The Constitution of the United States guarantees to the people the right to be secure in their persons, houses, and effects against unreasonable searches and seizures, and specifies that no warrants may be issued except upon probable cause and upon describing the things to be seized. The Constitutions of the various states reaffirm these

rights. In effect, this has meant that searches for narcotics cannot be conducted without a warrant, which, by the time it is issued, might be too late to acquire evidence or to save evidence from destruction, or to place anyone under arrest. Drugs seized in an arrest without a warrant are not admissible as evidence in court because they are illegally acquired. As a result of this and other legal technicalities guaranteed by the Constitution, the evidence is frequently insufficient, and the case dismissed.

In the face of such difficulties, the experience has been that the supply of narcotic drugs simply has not been shut off during the 60 years in which the Harrison Act has been on the statute books. There have, however, been a number of very important effects of these statutes. First, of course, all legal channels of supply for addicts have been cut off. Second, as a practical matter, the Harrison Act eliminated physicians as an agency for attempting narcotic cure because of the fact that such efforts, in the opinion of the physicians, left them in danger of being regarded as infringing the provisions of the law. The third effect of the

statute was to create a profitable opportunity of great magnitude for law breakers who served the illegal market.

It is very important to note the unusual interaction between federal legislation and the physicians of America which took place immediately upon passage of the Harrison Act of 1914. It must be noted that Section II of the Harrison Act exempted from prosecution the prescription of drugs "to a patient by a physician...in the course of his professional practice only" (81). This was unrevealing draftsmanship to the eyes of many physicians because they felt that the agonies of unrelieved addiction were as much encompassed in their Hippocratic oath as was any other human suffering, and specification of same was unnecessary.

The Division's assault on this expression of the physician's conscience started in the courts. The government aimed for a construction which would exclude from the Harrison Act exempting a doctor's dispensation of narcotics to ease the addict's craving. The addendum had two objectives: To end all so-called ambulatory treatment (92) including the clinic system for controlled distribution of drugs

to addicts (67) , and then, if possible, to drive the profession away from the addict altogether. It succeeded in both goals - for a brief period. Government victories in the Supreme Court, culminating in *United States v. Behrman* (37) posed two problems that were broader than the subject matter of this discussion. The question arose: To what extent is it morally justified for an administrative agency to select the cases it feeds to our appeals courts in order to gain some desired interpretation or result? And how far should the government appeals be extended by way of successive administrative actions and interpretations - particularly when the court decision underlying the original action has meanwhile been effectively overruled?

The cases channeled into the courts for prosecution were flagrant and violatory at first, but the reasoning for the verdicts generated by the courts were very interesting indeed. With each successive ruling, it became easier to prosecute another physician based upon the earlier Court decision.

The Harrison Act came through its first constitutional Supreme Court test by a five to four margin (84). On that day, the Court decided *Webb v. United*

States (77), a physician case appealed under the exemption II. The facts showed flagrant abuse; the doctor had sold prescriptions - four thousand of them in eleven months - indiscriminately, to anyone for fifty cents apiece. The issue was presented in a certified question:

If a practicing and registered physician issues an order for morphine to an habitual user thereof, the order not being issued by him in the course of professional treatment in the attempt to cure of the habit, but being issued for the purpose of providing the user with morphine sufficient to keep him comfortable while maintaining his customary use, is such an order a physician's prescription under exemption II?

The Court replied:

To call such an order for the use of morphine a physician's prescription would be so plain a perversion of meaning that no discussion of the subject is required (90).

Note how the question was loaded: "Sufficient to keep him comfortable by maintaining his customary use" is not a description of the facts of the case... it not only blankets the outright peddling involved in the case before the court, but it also reaches toward the bona-fide administration of drugs for the

relief of the patient addict.

The next case, *Jin Fuey Moy v. United States* (78) was likewise flagrant in its facts. The doctor had prescribed morphine to strangers indiscriminately, in bulk, eight to ten grams at a time, for \$1.00 a gram. The Court, this time, apparently choosing its wording, said:

Manifestly the phrases 'to a patient' and 'in the course of his professional practice only' are intended to confine the immunity of a registered physician, in dispensing the narcotic drugs mentioned in the (Harrison) Act strictly within the appropriate bonds of a physician's professional practice and not to extend it to include a sale to a dealer or distribution intended to cater to the appetite or satisfy the craving of one addicted to the use of the drug (78).

Again, the language goes far beyond the facts of the case. It separates "professional practice" from any administration whatsoever "intended to cater to the appetite or satisfy the craving" of an addict.

Now the stage was set for Dr. Behrman. For purposes of finding the doctor a peddler for profit, the case presented an ideal set of facts. He was arrested in New York for giving one addict at one time for use as the addict saw fit, prescriptions for 150

grains of heroin, 360 grains of morphine, and 210 grains of cocaine (72). Again, the question posed was whether this was "in the course of his professional practice only". The government, however, drew up an indictment alleging not that the prescriptions were incompatible with the approved or proper therapeutic treatment, but instead alleging that, in effect, the drugs were given in a good faith attempt to cure the addict (72).

Behrman demurred. The District Judge delivered a brief lecture against "ambulatory treatment", but reluctantly sustained the demure, referring to a decision in another indictment case (71), and closing with an inviting conclusion: "For the sake of uniformity in this district, however, I am disposed to follow precedent until the question is concluded by decision of the Supreme Court" (72).

Soon after, in 1922, the Government appealed the case directly to the Supreme Court (12) and promptly moved to advance it, stating in support of its motion:

The case involves a matter of general public interest, i.e., what is the meaning of the words 'in the course of his professional practice only' in that portion of the act which exempts from its provisions the dispensing or distribution of

the drugs to a patient by a physician in the course of his professional practice only."

The appeal went on to ask:

The practical administration of the Harrison Narcotic Act is dependent, to a very large extent, upon the decision which this court may render in this case." (72)

In the *Behrman* brief, Solicitor General Beck made no attempt to gloss over what was being sought, apparently relying - rightly, as the outcome proved - on the flagrancy of the case and the prevailing tempo of the times (73). In the extremely lengthy and bitter court battle which ensued, *Behrman* was accused of a violation of the Harrison Act as a matter of law, and concerns for the legitimate and licensed practice of medicine were ignored.

Justice Day and five of his associates sustained the Government's position, reversing the District Court and thus putting the stamp of approval on the *Behrman* indictment. That the majority of the court did not see clearly what they were doing - despite the government's candid brief - is apparent from the fact that they relied heavily on the mere amounts of the prescriptions, (72) apparently without realizing that the doctrine they were setting would make a

volume - and good faith, as well - irrelevant. The other three justices, Holmes, Brandeis, and McReynolds, were more clairvoyant. Justice Holmes wrote for them:

It seems to me wrong to construe the statute as creating a crime in this way without a word of warning. Of course the fact alleged suggest an indictment in a different form, but the government preferred to trust to a strained interpretation of the law rather than to a finding of a jury upon the facts. I think this judgement should be affirmed." (72)

If some members of the court were not fully aware of what they were giving in the *Behrman* holding, the Narcotics Division nonetheless saw completely clear what it had received. The Division reasoned that if a Behrman indictment was unassailable when it charged the dispensing of shocking amounts of drugs, it was no less unassailable when it charged a minute quantity only. The Division had what it wanted. Any doctor who prescribed any narcotic drug to an addict could be threatened by prosecution or packed off to prison - and good faith was no defense. Immediately there commenced a "reign of terror".

The medical profession was shamelessly bullied and threatened until it withdrew, totally and irrevocably, as the addict's last and only point of con-

tact with legal society (86). The Narcotics Clinics, which had been established in a number of states to alleviate the situation, were closed - in some instances as a direct result of threats by Division Agents (55). In 1924, a special committee of the American Medical Association docilely reported "its firm conviction" that ambulatory treatment of narcotic addicts "begets deception, extends the abuse of habit forming narcotic drugs, and causes an increase in crime" (58). An earlier version of this report (prior to its adoption by the AMA) had been reprinted by the Division (a practice, as to "approved" materials, that continues to this day) and had been widely circulated as an officially endorsed pronouncement (66).

Doctors went to prison (61). The hunt for addicts was pressed forth relentlessly (87). Prices rose, prisons filled, "dope rings" thrived. The United States acquired the "renoun" of being the world's best market for illicit narcotics - a reputation which stands unchallenged to this day.

On Wednesday, October 14, 1970, the Congress passed a new drug law. It was very important to understand what that law provided because to a cer-

tain extent it did add to or detract from some of the statements and conditions that had been made in the past about drug control enforcement (See the first page of appendix C-513 91st Congress, H.R. 18583, October 27, 1970). This new law of 1970, called the Comprehensive Drug Abuse Control and Prevention Act of 1970, signed into law by the President in October of 1970, stood out as the first major piece of legislation since the Harrison Act to deal with the American drug problem.

The real importance of this legislation did not lie within the 152 pages treating regulation, import, and export control, the new money for funding the construction of rehabilitation centers, or the new money for education and rehabilitation. The focal point of this entire bill was the penalties it provided for criminal violations.

The importance of these penalties was relative to the discrimination which the law made concerning the type of offender to be dealt with. The law recognized that there were several types of offenders. For example, there was the person who was an experimenter. He was the curious, casual user. There was also the chronic user, but this user, from the point

of view of law enforcement and legislation control, was the lowest rung on the ladder. He was of least importance for one over-riding reason: To do something to that individual from a law enforcement point of view was highly ineffective. It was ineffective because of the "pyramid" of drug abuse. At the top is the trafficker and at the bottom are the ultimate users. You can remove a lot of people from the bottom, but you don't stop the problem, and you don't stop the traffic. Law enforcement, as viewed by this law, saw its duty as primarily directing legislation at the trafficker.

This new law also afforded the inception of the Bureau of Narcotics and Dangerous Drugs (BNDD). This new bureau was an amalgam of two old bureaus - one in the Department of Treasury and one in the Department of Health, Education and Welfare. The new bureau was placed in the Department of Justice.

Michael Sonnenreich took the position of advocating the merits of the new legislation of 1970. Mr. Sonnenreich recognized that the legislation of 1914 was a hodgepodge of Federal laws dealing piecemeal with a large problem. He also recognized that the problem couldn't be treated solely as a matter

of law enforcement, but that the problem of drug addiction in America had educational aspects, research aspects, and rehabilitational aspects. He pointed out that the new law of 1970 provided services and funds in all three of the areas. He stated that a government does not necessarily change men's minds, but it can help to provide the funds with which others can effect the change (64).

The new bill of 1970 provided further indications of significant changes in the governmental position. Government recognized that the problem must be treated with qualified personnel - the psychiatrist, the psychologist, and the physician. The authors of the bill had tried to distinguish for the first time that the law would deal with the people who come before it. And the law had tried to take into account the fact that many of the young people arrested for drug possession are involved in the judicial process at the state level for the first time. At the date of this writing, the number of such cases at the federal level is fairly small, but at the state level, there is a real problem. Of the nearly 162,000 young people with an average age of 21 who were arrested for drug possession

in 1971, fully 98.6% of them had never before been arrested. Something had to be done to make the process - not just the law, but the process - seem credible and seem fair. As a result, the new law attempted to distinguish the crime in terms of the drug, much the same as it is more important to distinguish simple possession from traffic (64).

The new Federal bill distinguished no drug in terms of possession, but rather provided that it was a misdemeanor to possess a drug for one's own use on the first offense. The new misdemeanor punishment means simply that anyone convicted by Federal authority for the first time of possession of heroin, LSD, marijuana, amphetamines, or any of the other control drugs, can be sentenced, at most, to one year in jail. There was no longer a minimum mandatory sentence for this violation. The old law provided a minimum mandatory sentence of from 5 to 20 years.

In addition, the new legislation added to the old law another provision known as the first offender treatment. If it were a person's first offense and the judge feels that some action other than putting the person in jail would be more beneficial to

the culprit, the judge can set whatever conditions he deems appropriate. The offender can be put in the custody of his parents or College Dean, or adhere to any other conditions which the judge stipulates. If the conditions were fulfilled, the judge could then expunge the criminal record of the accused. Of course, usually anyone arrested would have carried that criminal record with him the rest of his life. Under the new legislation, however, the criminal record of the first time offender would be expunged if the conditions determined by the judge for a suspended or probated sentence were fulfilled, leaving no public record of conviction.

There is one category, however, in which mandatory penalties have been retained. The professional criminal, acting in a continuing criminal enterprise who supervises five or more individuals, who has large quantities of money that he cannot explain, or who acts as a man of violence to subdue the competition, would get a minimum mandatory sentence. The legislation viewed this as a substantive offense. It must be proven not only that the accused committed the act of selling or that he committed the conspiracy,

but also that he worked with an organized group. The legislation views this individual as an extremely difficult person to rehabilitate. Mr. Sonnenreich typifies him by saying that he certainly would not work at a Ford assembly plant for \$150 per week because he has an excellent income, often \$100,000 or more, and it is all tax free. Neither is he addicted to any drug. Mr. Sonnenreich sees the answer to him as putting him in jail (64).

The new law of 1970 has not gone unchallenged, however. On the contrary, with its passage in Congress, a new barrage of legal and literary criticism arose.

One such critic is Daniel X. Freedman. Dr. Freedman stated that the new bill will have little impact on changing public attitudes. He further stated that the actual intent of the bill, particularly the training funds available through this bill, were specifically for the training of police officers and not school children. Dr. Freedman further pointed out that the bill did not specifically discriminate the legal determination of what is a *dangerous* drug and *when* it is for enforcement rather

than a drug policy, which was the purpose for which Congress finally reorganized the bill (64).

Another critic is John A. Robertson. Mr. Robertson pointed out that the penalties for particular crimes remained mandatory and stiff in the new law. He pinpointed the Justice Department as being in the driver's seat and forcing scientists to grovel if they wanted to do drug research. He accused the law of temporarily soothing the nation's troubled conscience, but offering no actual help to those people who misuse drugs. Mr. Robertson predicted that this law would produce more drug use, more police power, and more controversy. Mr. Robertson took the interesting point that the real controversy concerning drugs was basically law and not drugs. His view is the reverse of the usual assumption that the law is the product of attitudes. He views law as the cause. He explained that the disagreement over how the social role was embodied in the institution of law should have regarded drug use as generating much of the heat given off by the issue. He says that once deprived of a criminal aura, drugs would be less of an object of emotion and more amenable to practical controls (64).

He further pointed out the social costs of this new law, and typifies these costs as "damaging". He measured the cost of a bad law in deterioration of authority, social instability, alienation of youth, and the growing crisis in the legal system. He exemplified the law as continued overcriminalization, and pictured jail sentences as "totally useless" instruments with which to deter drug abuse (64).

In conclusion, it is quite obvious that controversy and discrepancy typifies the history and present day standing of drug abuse legislation. It would almost appear as though there exists an individual approach, theory, or opinion waiting to grab credit and glory for any social result or outcome - whether it be utter failure of new legislation or national amelioration of the drug problem.

Q 7 Briefly, what is the history of addiction?

History of use of narcotics in the world -
Narcotics have a long history, even dating back further than the history of alcohol. In the Assyrian medical tablets of the 7th century B.C., the juice of the poppy was enthusiastically

praised. The Sumarian theories, which date from about four thousand B.C., describe the poppy as a "plant of joy". Homer states that Helen of Troy "...cast into the wine...a drug to quiet pain and strife and bring forgetfulness of every ailment." In the Ebers Papyrus of Thebes, 1552 B.C., opium, mixed with another substance was recommended for children whose crying distracted their mothers (35).

The Arabs recognized the mercantile value of opium, and during the 10th and 11th centuries, the Mohammadans distributed opium to all known portions of the world. For the past 200 years China has been the greatest opium producer with western countries being largely responsible since they organized and promoted the far eastern opium trade (35).

History of use of narcotics in the United States - In the early portion of the 19th century, opium was freely prescribed by physicians in this country. There was practically no other satisfactory remedy for pain or relief from the symptoms grouped under the appellation of "nervousness".

Hypodermic methods of administering morphine was discovered by Alexander Wood in 1843, and was introduced in this country by Fordyce Barker in 1856. In 1880, Dr. H. H. Kane of New York stated:

There is no proceeding in medicine that has become so rapidly popular; no method of allaying so prompt in its action; also, no plan of medication that has been so carelessly used and thoroughly abused, but no therapeutic discovery that has been so great a windfall to mankind as a hypodermic injection of morphine (35).

In this period, physicians used morphine more and more generously with the belief that the relief of pain and discomfort was their first duty, and they undertook other medication designed to effect a more permanent relief as soon as the most distressing symptoms had passed away. The patient, experiencing the miraculous relief of the hypodermic treatment frequently demanded continued administration of this treatment. Eventually the treatment produced a drifting into a state of habituation and then addiction. During this period, narcotic drugs were as freely accessible as aspirin is today. There was little public knowledge concerning their sinister properties,

and their use became common practice.

In 1882 there was an estimated 400,000 addicted individuals in this country (57). Since this number was nearly 1% of the population, the public became alarmed. Books and articles explaining the horrors of addiction were written and many institutions for treatment came into existence. Through the education of the public, and through greater care exercised by physicians, the number of persons addicted decreased so that by 1914, with almost double the population of 1882, there was an estimated 150,000 to 200,000 addicts (2). As a result of popular agitation, the Harrison Narcotic Law was enacted by the government in 1914. Unfortunately, it provided the necessary setting for a flourishing illicit traffic in narcotic drugs. From this point forth, the character of the narcotic problem profoundly changed.

In 1918, a commission appointed by the Secretary of the Treasury estimated over one million drug addicted persons in this country. Thus it was to be seen within a four year period, over five times as many affected individuals appeared

as there was before the passage of the Harrison Law (2). There was, however, a radical change in the method of obtaining opiates by addicts. The closure of the legitimate channels brought into existence illicit traffic of tremendous proportions, and, thus, virulent criminality was added to what was formerly simple immorality and "use of drugs".

Q 8 What is the history of treatment of narcotic addicts in the United States?

Governmental attempts at legislation and regulation must be included within the realm of treatment attempts. While the principle effort of the government in the field of narcotics has been in the area of prohibition, there are two other types of experiments which should be mentioned here. The first of these was clinics. A few years after the passage of the Harrison Law, the public became alarmed by the great increase in the number of addicted individuals and sought to find remedies for this serious condition. It seemed obvious that if the reduction in the enormous profits realized by those engaged in smuggling and the promotion of addiction for com-

mercial purposes could be stopped, this whole business might disappear.

With this purpose in mind, some 44 clinics were opened by municipal or state health officials in the larger cities where drug addiction was a definite public health problem. In these clinics, narcotic drugs were sold to supposedly addicted individuals at prices as low as 2¢ a grain. Dr. S. Dana Hubbard of the Department of Health of New York City, in describing the operation of a New York clinic, stated, "the practice of the clinic is not to prescribe for any new applicant an amount over 15 grains...10 grains being the usual amount" (27). Reduction was by daily lessening of the amount prescribed. It was found that some individuals could be reduced to as low as two or three grains a day. Others, when deprived by the clinic, refused to accept clinic regulations, and bought additional amounts outside. Dr. Hubbard added, "Many addicts endeavor to get from the clinic actually more than they themselves require." The clinics were closed in 1920 by order of the Commissioner of Internal Revenue. Although they encountered many difficulties, in retrospect, it seems that their most important error was the

requirement in the law which made it necessary for them to supply each patient reduced amounts of drugs in accordance with an arbitrary pre-determined schedule. This arbitrary legal formula for medical treatment, over-riding medical discretion, in the opinion of Dr. Hubert S. Howe of New York City, was the fore-ordained prescription for the failure of the clinics (27).

The second notable governmental effort to treat drug addiction occurred when the Public Health Service opened the Lexington Hospital in 1935, and another hospital at Fort Worth, Texas, in 1938. The former medical officer in charge, Dr. Vogel, has stated that in 1951 there had been 38,000 patients admitted for treatment in the two institutions since their opening. Of those discharged from Lexington Hospital, approximately 40% apply for readmission, and no one holds that the entire 60% who do not return are cured. Rather liberal estimates for "arrested" addiction, with no recurrences of drug use, range from 3% to 50% of those who have progressed through withdrawal or detoxification. However, a number of addicted persons who have been treated at Lexington have made estimates saying that as

few as 2% are cured (27).

Q 9 What is the present status of narcotic addiction and treatment in the United States?

Vast discrepancies exist in estimates of the number of addicts in the United States at the present time. A 1968 article from the United States Governmental Printing Office estimates 62,045 active narcotic addicts in the United States at the end of 1967, which is an increase of 2,325 against the 1966 estimate (78). Dr. Merki, from the Texas Alcohol and Narcotics Education Center, estimated in 1970, that there were 200,000 heroin addicts in the United States (78). Conversations with officials from the Governor's Office of Drug Abuse from the State of Michigan indicated that both of these estimates are very conservative, and the addicted population of the United States may easily be as high as one million people (23). In any event, these data indicate, beyond their discrepancies, a sizeable proportion of the population of this country which has used narcotics to the extent of becoming addicted, and capable of demonstrating withdrawal symptoms.

The treatment of the narcotic addict today in

the United States, when compared with the treatment of other diseases and illnesses, does not reflect the modernization and advanced approaches which typifies the 1970's. The clinic in Lexington is still in operation, and recent statistics do not indicate a great deal of change from its success ratio stated above - that of a known 40% failure rate and frequent estimates of only two to four percent verifiable successes. Another unusual characteristic of this nation's approach to treatment of the heroin addict is the lack of experimental research concerning differing treatment modalities. Money has been made available from State and Federal Governmental agencies for the treatment of addiction, and programs have been devised and constructed around the country which provide enough data to maintain continued funding, but never quite enough data to indicate a significant success ratio. Dr. McCabe points out in his article of 1972, that research methodology has not been used to evaluate the efficacy, safety, and practicality of experimental treatment approaches in narcotics addiction. Dr. McCabe further points out that with practically no notable exceptions, the lack of scientific knowledge

and research has contributed to a vast inadequacy in our understanding of the narcotics addict (72).

Other reviewers and researchers have indicated that outcome statistics are lacking and studies are unavailable based on the narcotics population. Williams and Johnston (93) indicated that in most studies that they have reviewed, one-third of the total patients stopped or dropped out of treatment during the first three months. Dole's famous study (14) with methadone (to be discussed at length below) was particularly ungeneralizable due to the highly selective population and the initial criteria for participation which precluded acceptance of poly-drug users, alcoholics, or anyone with major medical or psychiatric disorders. Many studies done with addicts were done with individuals who entered treatment programs frequently only after being on a waiting list for one year or longer - a practice which led to the acceptance of very highly motivated addicts. Further, little is ever mentioned in these studies of those addicts who drop out before their term is completed, or a particular criterion level is maintained or accomplished.

In reviewing the treatment modalities available

today for the narcotics addict, it must be noted that the most popular and prevalent is that of the methadone maintenance clinic (72).

Q 10 What is methadone and what role does it play in treatment of the narcotic addict?

Methadone (Methadone Hydrochloride) is a potent, synthetic analgesic, and was first produced by the I. G. Farbenindustrie in Germany during WW II. It was later discovered by the United States intelligence team investigating the German pharmaceutical industry following the allied invasion. Despite the shortage of morphine in Germany, methadone had not been used, apparently because the large doses studied resulted in a substantial incidence of side effects. This early form of methadone was called dolophine, named in honor of Adolph Hitler. Ensuing (American) pharmacological investigation showed that many of its actions closely resembled that of morphine in both animals (62, 92, 36, 25), and man (33, 38, 71) and immediately raised the question of addiction liability, which was also experimentally demonstrated (30, 31, 32). In addition to its use as an analgesic, methadone was later used

as a substitute for heroin and morphine to treat opiate addicts during detoxification and withdrawal. The methadone withdrawal syndrome is somewhat protracted and has less physical intensity than that of heroin or morphine. This particular advantage has led to the employment of methadone substitution as an almost routine means of minimizing withdrawal symptoms regardless of the opium on which the individual is dependent.

Literature indicated that detoxification by way of methadone, in combination with the usual rehabilitative efforts, is ineffectual for all but a very few narcotic addicts. After treatment, consisting of simple withdrawal from drugs in a hospital setting, patients almost invariably return to drugs after discharge. Eddy (18) describes the problem along with the ecological implication of developing effective rehabilitative programs:

Segregation of addicts, by law or as volunteers, with or without psychotherapy, in jails, hospitals and sheltered communities, has been tried...and has not succeeded in transforming more than a small minority into people capable of living a normal life in a free society. If a way could be found to change such addicts into productive citizens,

society would not only be spared the cost and the indignity of massive jails, but would also gain support for families now being cared for by public funds and, with improvement of neighborhoods, it would diminish the rate of new addictions.

In November, 1963, the Health Research Council of New York City initiated and funded a study of heroin addiction at Rockefeller University Hospital under the joint direction of Dr. Vincent P. Dole, specialist in metabolic research, and Dr. Marie E. Nyswander, a psychiatrist with extensive experience in the treatment of opiate addiction. In the words of Dole, et. al. (14) : "Since thousands of heroin addicts are filling the jails of New York City, it seemed reasonable to raise the issue of whether some medication might control the drug hunger of these criminal addicts and enable them to live in the community as productive citizens." Clinical studies which were extended to Beth Israel Medical Center in 1965, indicated that this goal might be achieved by using the familiar drug methadone hydrochloride in a new way. The now famous Dole-Nyswander technique consisted of this basic approach: When the addicted person enters the program, the oral dose of methadone is gradually increased to a level of stabilization, and

the patient becomes impervious to narcotic drug effects. His "hunger" for narcotic drugs is also eliminated (or greatly reduced), presumably by a methadone blockage of the narcotic drug action. Once a level of stabilization is reached, most patients can function well for an indefinite period of time without further increases in their dosage. However, some experimentation and regulation of dosage is occasionally necessary. If medication is increased too rapidly, the patient will become over sedated and may experience urinary retention and constipation along with other side effects. If the dose is inadequate, a patient previously on large amounts of heroin will experience withdrawal symptoms. The Dole-Nyswander experiment has been described in detail in a succession of scientific publications (56) and has been featured extensively in the popular press (4,51). The procedure, as originally described, encompasses three phases: Phase one is the in-patient phase. Patients are administered increasingly larger oral dosages of methadone hydrochloride in fruit juice until a stabilizing dosage, between 80 and 120 milograms a day, is reached. This stabilization is accomplished

over a period of approximately six weeks while the patients reside in an unlocked hospital ward. During this time they are given a "complete medical work-up", psychiatric evaluation, help with family and housing problems, and job placement counseling. After the first week of hospitalization they are free to leave the ward for school, library, shopping, and various amusements, usually accompanied by one of the staff.

Phase two is the out-patient stage. In the early part of phase two, the patient appears daily for medication, ingesting it in the presence of a clinic nurse, and also for urine testing for drug use. After a few months, those patients who live at a distance and/or who appear to be making a good adjustment are provided with enough medication for several days at a time, and they return to the clinic once or twice a week for urine testing. Psychiatric, psycho-social, vocational, and legal support are available as needed during all of the phases of the process.

Phase three is the goal of treatment. It is the stage in which an ex-addict has supposedly become a socially normal, self-supporting individual. The only distinction between patients in Phase II

and Phase III is the degree of social advancement achieved.

The most recent and comprehensive statistics available on the efficacy of methadone maintenance programs in this country were those presented at the Third National Conference on Methadone Treatment, November 14, 1970, by Francis R. Gearing, Director of the Methadone Maintenance Evaluation Unit, Columbia University School of Public Health and Administrative Medicine in New York City. And as of October 31, 1970, this Evaluation Unit had under its surveillance, 13 in-patient induction units, 45 active out-patient and ambulatory units incorporating the Dole-Nyswander approach. There had been 4,376 admissions to date, with 3,485 patients actively under treatment. To illustrate the rapid expansion of programs in the area, these figures may be contrasted to 2,385 admissions and 1,866 active cases as of October 31, 1969. Relative "success" rates, defined as retention in the program, were recorded as 80% for both dates.

Results of the New York study indicated four significant facts:

First: Although a majority of the patients tested acquired the methadone "blockade" of heroin in the

first few months of treatment, "...less than 1% had returned to regular heroin usage while under methadone maintenance treatment."

Second: Results indicated that remaining in the methadone maintenance program decreased anti-social behavior as measured by arrest and incarceration.

Third: There is a "...steady and rather marked increase in social productivity with a corresponding decrease in the percentage of patients on public assistance or welfare as time increased."

Fourth: Although alcohol and other drugs continued to pose a problem for a reported 10% to 12% of the patients, "...a fair number continue to show improvement in the handling of these problems with the assistance and support of members of the program staff" (22).

Based on the results in this Dole-Nyswander study, this approach has served as a model for literally hundreds of methadone clinics throughout the United States. One estimate places the number of methadone clinics at 500 in the United States as of January 1, 1972 (43). And yet, a critical analysis of the Dole-Nyswander study tends to indicate that there existed certain methodological defects which could possibly explain the aforementioned

failure of subsequent methadone clinics to achieve their objectives.

Dole's cases were volunteers who were selected partly on the recommendation of an addict already in the program. Also, initial criteria precluded acceptance of multi-drug users, alcoholics, or any individual who had a psychiatric disorder or major medical problem (14). The addicts who entered the program frequently did so after being on a waiting list for one year or longer - a practice which naturally would lead to the acceptance of more highly motivated addicts. Further, little is ever mentioned of those addicts who dropped out of the Dole-Nyswander experiment before their stabilization level was reached and it must be remembered that stabilization level was the criteria for being considered an official treatment case. One reviewer, Dr. Williams (93) has indicated that approximately one third of the patients in the Dole-Nyswander experiment dropped out during the first three months.

The biasing impact of the selection procedures is evident in Dole's demographic statistics. Sixty eight percent of the patients in the program were over the age of 30, compared to only 34% of the ad-

dicts in the Narcotics Register in New York City. Mean ages for the two groups were 32.5 and 27.9 respectively. Also, 38% of the patient population was white versus 25% for the register. The age differential is particularly significant in light of the claimed "maturing out" tendency of narcotics addicts independent of specific treatment (91). While an investigator is entitled to establish whatever selection criteria he may deem appropriate, it seems inexcusable to emphasize the biased nature of the end population. This omission invites the inference that outcome results may be extrapolated to all addicts.

Some remarks seem especially appropriate when reviewing subsequent methadone clinics as well as the original Dole-Nyswander clinic. An especially significant shortcoming in evaluation of methadone programs to date has been the failure to control and assess therapeutic influence of extra drug factors. For example, the contribution of the total methadone program versus the effects produced by methadone per se has not been differentiated. A few non-drug aspects of the over-all program need be evaluated for their own rehabilitative impact.

These may include frequency and type of personal contacts with staff, the overall structure of "caring", the process of urine monitoring, the role of parole agents, and the effects of a protective and optimistic environment provided by dedicated professionals (10).

Another potentially misleading aspect of the methadone maintenance program evaluations is the arrest and employment statistics often cited as criteria for program effectiveness. In addicts, active participation in a methadone maintenance program very often increases the likelihood that, in the event of arrest, he will be dealt with less severely because of his apparent motivation to seek help. Joseph and Dole indicated, for example, that approximately half of the charges were dropped for those patients on the program who were arrested (34). Conviction and incarceration statistics are also likely to be artificially deflated because of legal and medical complications which arise upon institutionalizing the methadone maintained addict in a facility where there is no methadone maintenance provisions (46). This issue underscores the artificial distortion of the "continuation in program"

measure which is often utilized as a criterion of program effectiveness. The dependence-producing nature of methadone maintenance determines this effect in that psychological addiction to methadone "compells" the patient to remain in the program. This type of "evaluation" was perhaps acceptable during the infant phase of investigation (42), but with over one million doses of methadone taken in New York alone in 1972, it appears time for a more sophisticated program evaluation.

Another area for criticism is the poly-drug methadone maintenance patients. The Gearing evaluation of the New York Methadone Maintenance Programs indicates that 20% - a full 1/5th - of the patients in the programs are using drugs such as alcohol, amphetamines, barbituates, and additional sedatives. However, the proportion of patients at Brookdale Hospital Center in Brooklyn who are involved with non-heroin drug usage, especially alcohol, is reported closer to 50% (45). Erickson's (19) data indicate that poly-drug use by methadone maintenance patients is a general phenomenon with 45% of his methadone maintenance population in Sweden discharged from the program because of the abuse of Central

Nervous Systems stimuli and alcohol. Moreover, inter-current drug abuse on methadone programs seems not to be limited to the so-called "softer drugs"; a study by the District of Columbia Narcotics Treatment Administration reported in the Washington Sunday Star (49) indicated that 60% of the addicts in methadone maintenance programs administered by the District government continue to take illegal narcotics for months after starting regular methadone treatments." Results of the Washington study may be regarded as more favorable than those of the recent study of methadone maintenance patients conducted in Philadelphia in which a projected 82% of the Philadelphia addicts were found to be "cheating" with illicit narcotic usage. A later study of the same patients showed the incidence of cheating had risen to 97.4% (49). These figures, as with most methadone maintenance programs, are based on urine specimens taken as infrequently as once a week, a fact which allows for little control and/or feedback of "chipping" (occasional drug use) behavior.

In formulating a conclusion concerning the role of methadone in treatment of the narcotic addict, the available literature scans the horizon beginning

with Dole's metabolic theory of narcotic addiction (13), and moves across the continuum to the recent proposal by the City Council of New York to "put methadone in drinking water" (21).

Much more research obviously needs to be done on this pharmaceutical approach to the treatment of addiction which virtually repudiates all psychological determinants of chronic opiate usage. The scientific shortcomings of most studies in this area preclude conclusive statements regarding therapeutic effectiveness and long-term safety of methadone maintenance. However, it must be remembered that the essence of the procedure is the construction of pharmacological dependency, with all the liabilities which that implies, including unknown long-term physiological and psychological effects.

It has been proposed that methadone maintenance be considered a radical treatment procedure to be employed only after more conservative treatment approaches have been unsuccessful (40). Moreover, it is suggested that in a continuing treatment program, periodic attempts be made to withdraw individuals from methadone, the rationale being that methadone is a means to an end - a pharmacological "half-way

house" between opiate addiction and total abstinence.

Q 11 What are some of the problems which treatment of the heroin addict involves?

Following the Dole/Nyswander experiment of 1962, the methadone clinic for the treatment of heroin addicts has outnumbered all other treatment approaches to heroin addiction by approximately 20 to 1 (3).

A progress report and evaluation of the methadone maintenance program conducted in 1967 in New York City was performed in 1968 (47). The evaluation included a comparative technique which sought differences and similarities between the addict and the program and the addict on the street. The evaluation revealed the following characteristics about 871 patients admitted to the program during the year 1967. The mean age of the patients was 33, older than the average street addict. There were fewer Negroes and Puerto Ricans in this study than in the New York street addict population. All patients entered the program voluntarily. The major conclusion was that none of the patients who continued therapy and involvement with the program could have been re-addicted to heroin because of the large stabiliza-

tion dose (120 mg/day) of methadone which was used. The concluding recommendations were that the program should be expanded by selective admission of heroin addicts to make the program's population more representative of the street population. Further, recommendations were that the attrition rate, which was as high as 30% during the first four months, be accounted for in the analysis and evaluation of the program.

Although there have been documented successes of methadone maintenance and methadone treatment programs throughout the United States, the majority of these studies have been criticized because of statistical and evaluative techniques which were less than accurate. In an editorial to the Journal of the American Medical Association, exception was taken to the favorable reviews of methadone maintenance programs in the United States. The writer stated that the goals of methadone treatment programs were not adequately evaluated concerning these particular methadone programs. The assumption that a job, a high school diploma, or a technical skill are appropriate goals in the treatment of drug addiction is continually open to question.

Since addiction was symptomatic of, in the AMA viewpoint, severe emotional maladjustment, the only tenable approach was to help the addict mature emotionally. The editor further contended that methadone maintenance constituted chemical control, and chemical control of a person poses severe legal, medical, and ethical questions (3).

Another interesting reference based on the AMA was made in 1967 (11). This consisted of an official policy statement of the Committee on Alcoholism and Drug Dependence of the American Medical Association. It expressed the following:

The Dole/Nyswander program of Methadone Maintenance for Narcotic Addiction is as yet an unproven research technique in need of adequate evaluation. To date, evaluation has been less than satisfactory, and in many cases, misrepresentative. Program subjects become dependent physiologically and psychologically. The statement of the proponent that the end result is achieved without any effects at all, or that euphoria is no longer realized by the subject, are not the important issues at hand. The subjects are also initially geographically dependent on the program. Currently, no nation considers maintenance to be a satisfactory answer to the drug abuse problem. The Dole/Nyswander program raises

questions as to whether this maintenance method offers a reasonable solution, in total or even in part, to the national heroin problem.

A critical examination of the medical and legal controversies concerning methadone maintenance for heroin addicts was made in an article in the Yale Law Journal in 1969 (48). This article also included an assessment of the Dole/Nyswander experimental program in New York, and indicated that the program was neither safe nor effective. The article further stated that critics of methadone maintenance argue that:

1. It (methadone maintenance) will create serious social costs of leading to increased addiction.
2. It has serious physiological, debilitating effects.
3. Addicts often suffer from serious personality disorders so that maintenance on methadone cannot alleviate root causes of the disease.
4. Use of methadone is still in the research stage and not considered to be an established treatment.

In addition, the Yale article indicated that there were many problems under existing Federal laws. There were questions as to whether the Fair Food and Cosmetic Act (concerning narcotics) was applicable to methadone since methadone was a synthetic narcotic rather than a natural (opiate) narcotic. Under the Harrison Act, any doctor who used methadone maintenance as treatment for heroin addicts violated Federal law. The Bureau of Narcotics Regulation derived from *Webb v. United States* that drugs cannot be prescribed to keep an addict comfortable by maintaining his customary use. It is important to note that the Yale article recognized that as a problem comes under the control of those whose concerns are primarily to reduce crime, it may take on the characteristics of a non-therapeutic research effort in which pursuing a goal of benefit to society may conflict with the best interests of the patient. In such a situation, the article pointed out the acute need for safeguards, particularly for the individuals autonomy which becomes vulnerable. The article could not involve itself with remarks concerning evalua-

tion of statistical generalizability of methadone maintenance programs.

New developments and research have involved a quest for additional or substitute chemical agents which would counteract heroin addiction. The use of Thiamine in the treatment of the morphine abstinence syndrome was investigated (26). The subjects of the study were ten morphine addicts who had been hospitalized for treatment. All of the subjects were still actively addicted to one of the opiates. Administration of Thiamine failed to have any significant effect on the human abstinence syndrome and accompanying symptoms.

The possibility that the United States Department of Defense may have found a heroin antagonist in their search for chemical warfare agents but classified its existence was also discussed. A request for information about this matter from the Defense Department was made by Dr. Jerome Jaffe, Director of the Professional Office for Action on Drug Abuse. Dr. Jaffe stated that the response from the government was unsatisfactory (15).

Dr. Jaffe further submitted a report to the

Federal Government including the details of the pharmaceutical manufacturers Association report on the fight against heroin addiction (15). The report urged that the Federal Clinical activities at Lexington Kentucky and other drug addiction treatment centers be greatly expanded. The report also covered seven new developments in the search for heroin antagonists that were made by the pharmaceutical industry. Included were two chemical relatives of Naloxone, a new form of Cyclazozine, which was a synthetic compound, a tranquilizer, and sedative. Haloperidol, which may help in narcotic withdrawal when combined with a narcotic antagonist (such as methadone or Naloxone) was tested as a new pain killer which appeared to induce a long-lasting aversion to morphine in monkeys. The report further included a discovery of an effective and "pure" heroin antagonist, but was never further elaborated.

There have been other treatment approaches which have arrived on the scene in addition to the chemical therapy concept. Such examples are that of SYNANON and DAYTOP. Synanon, founded in New York in

the early 1960's, was based on an Alcoholics Anonymous model of group interaction and confrontation. DAYTOP is similar in its approach, using the group psychotherapy setting, but it is thought of as being more empathetic and warm. Success statistics are virtually unavailable with these two concepts, although undocumented reports of increasing successfulness are available. The DAYTOP program has made references to 90 to 95% of its patients meeting a criteria for successful treatment. This criterion involves "clean" urinalysis when tested for further drug abuse (23).

In conclusion, it appears as though the problems which plague treatment of the heroin addict are as widespread and diverse as the treatment modalities themselves. Methadone maintenance certainly appears not to be the total answer if it is the answer at all. Specific and clear criteria for successes are established for each particular program and are not necessarily those which the government, the American Medical Association, or society in general, believe the heroin addict should aspire to. It appears that a more

universal criteria for success, and reliable evaluative measures for assessing the attainment of these criteria is needed. Unless these measures are established with uniformity throughout all programs and approaches, the problems of treatment of the heroin addict are not likely to prove amenable to repair.

Q 12 What additional characteristics does the literature indicate about the heroin addict population?

Because the administration of methadone, either by way of a methadone maintenance program, a methadone detoxification regiment, or the administration of methadone as a treatment by way of a private physician, there does exist the requirement that a physician acquaint himself with the patient's physical health history. Thus it evolves that most of the data relevant to the narcotic addict and his history is based on medical records, mostly gathered from methadone programs. The following data represents a list of accompanying and related medical disorders of addicts gathered from three of the nation's

largest methadone programs (53).

1. Serum Hepatitis: The acute form is the most common of the serious medical diseases that requires hospitalization. It is treated conservatively with rest and a good, well balanced diet. Storage (hospitalization) should be reserved for the rare cases that fail to respond to conservative measures.

Even more common than the acute form is the low grade, chronic form of serum hepatitis. In a screening study at the New York Methadone Program, 40% of the patients were found to have mild to moderate indications of serum hepatitis.

2. Venereal Disease (Syphilis and Gonorrhea): About 11% of the patients admitted in the last fiscal year had a positive reaction to the V.D.R.L. (Syphilis and Gonorrhea) test upon admission (New York Methadone Maintenance Program).
3. Malnutrition: During active addiction, addicts neglect their dietary needs and

are often underweight. They generally gain considerable weight after withdrawal has been completed.

4. Skin Affections: Tinea vericolor and dermatophytosis are both very common due to lack of cleansing of the skin. Scars are common from injecting heroin adulterants under the skin as well as from healed infections. Staph abscesses are common, and they may spread to produce metastatic abscesses and septicemia.
5. Vascular: The superficial veins often become thrombosed and scarred from the frequent, irritating injections. It is often very difficult to get blood for laboratory tests and I.V. therapy can be very difficult to carry out. Also, edema of the hands and feet is often seen due to venous insufficiency resulting from many thrombosed veins and scars.
6. Endocarditis: This coronary disorder is generally recognized to occur frequently

in addicts. The acute form is generally due to staph and the tricuspid valve is often involved. The sub-acute form is generally due to staph viridams.

7. Tetanus: Tetanus is not extremely common, but it does show a higher occurrence rate among heroin addicts than among the normal population. The portal of entry is considered to be by injecting drugs under the skin.
8. Death from Overdosage: Addicts generally don't know the dose of heroin they inject. After going through withdrawal or losing some of their tolerance, they may take a dose that they can no longer tolerate and they die. They present fever, shortness of breath, pulmonary infiltrates, and they generally resemble acute pulmonary edema.
9. Convulsions, Delirium, Psychosis, and Death: These may occur from withdrawal and its related complications.
10. Respiratory Diseases: Pneumonia, T.B.,

upper respiratory infections, asthma and chronic nasal congestion are also common.

11. Hematological Abnormalities: Leucopenia, relative lymphocytosis, and atypical lymphs also appear. These could be due to the immunological abnormalities associated with the adulterants in heroin.
12. Immunological Abnormalities: Coomb's test for erythroblastosis may be positive and immunization procedures against fairly typical diseases may induce complications.
13. Periodontal Disease and Dental Care: These are due to poor dental hygiene, usually a result of neglect.
14. Amenorrhea: This is related to the effect of opiates on the central nervous system, disordered lives, prostitution, high incidence of V.D., and related emotional disorders.
15. Hemorrhoids: This is common due to the chronic constipation during active opiate addiction.

16. Psychosomatic Disorders: These are very common. Headaches due to the skeletal muscle contraction or vascular varieties, genetal gastrointestinal symptoms, cardio-respiratory symptoms and premature beats, are often seen and may be related to the use of stimulants such as amphetamines, mace, etc. in conjunction with the heroin. Dizziness and weakness are common complaints as well as muscular-skeletal pains. Heroin addicts are frequent complainers and malingerers, generally.

Q 13 What justification exists for a study related particularly to heroin addicts as a separate and isolated population?

The intention of the present study was to investigate the heroin addict not as a seperate and isolated population, but rather to investigate some of the variables which were related to heroin addiction. There exists many poly-drug users in the country today without necessarily their being addicted to heroin. One assumption of the present study was that the heroin addict, due to the nature

of his addiction, the nature of the narcotic, the nature of his life style, and "social illness", was different from the marijuana smoker or the glue sniffer or any other drug user who was not addicted to heroin. The definition of the term "drug addict" varies as much as the individual personalities of each person and his relationship to each drug being used. The present study purports to investigate heroin addicts, not drug addicts, and literature is available which justifies independent categorization of the heroin addict from, for instance, the marijuana smoker. Dr. Roy C. Smith (5) initiated a study which sought to "determine the utilization rates for high school seniors of a list of substances which included marijuana, LSD, and alcohol". In this study which was prepared for a final report of a study conducted for the Special Committee on Narcotics for the Michigan Department of Health, the author further purported to investigate "demographic, sociological, and social-psychological correlates of the utilization principally of marijuana, but also of alcohol." The results of the study yielded an impressive and

surprising table of percentages of high school seniors with drug histories, but a major conclusion was that:

Marijuana smokers were found to come from families much the same in size as families of non-smokers, and wealth does not appear to be a factor. Socio-economic backgrounds show little differences between the marijuana smoker and the non-smoker.

Supportive data for the investigation of the heroin addicted population independently from the marijuana user was gained from a study performed in 1967, by Suchman (68). Suchman took a representative sample in November of 1967, of 600 students from a California University with an undergraduate enrollment of 12,200. Suchman's conclusions are based primarily on marijuana users, and he asserts, "...drug use on campuses today represents a social form for recreation far removed in nature from the traditional problem of narcotics addiction, and for that matter, alcoholism." Suchman did not find that the marijuana user was significantly different from the non-marijuana user in responses to questions designed to measure anomie.

Anomie, a concept originally based on Emile Durkheim's classic work on suicide (16) has come to denote apathy, withdrawal, despair, a feeling of aloneness, mistrust of others, and perhaps an overall 'dim world view'."

Two previous studies have, by definition of drug use, implied that marijuana use is a subset of drug abuse. Each investigation set out to test and discover qualities and properties of drug abuse. Each study eventually focused primarily upon marijuana, and neither study discovered data which was particularly meaningful concerning the heroin addicted individual. Only Suchman asserted that the drug use on campus today was far removed in nature from the traditional problem of narcotics "addiction" (68).

It would seem that the literature produces support for the proposition that heroin addicts are quite a different population of "drug abusers" than are marijuana users albeit the term "drug abuse" incorporates both categories. Justification for this premise, and implications for differentiation between marijuana and heroin users, is available.

Suchman concludes (68):

...for students, marijuana served much the same function as 'social drinking' does for their parents, and their 'law breaking' has the same social sanctions as drinking during prohibition. And just as 'social drinking' is a far cry from 'alcoholism' so is smoking marijuana far removed from 'the narcotics addiction'.

In conclusion, it appears to be unwarranted and unjustifiable to group and characterize the narcotics addict in the same population as the marijuana user. In the heterogenous group called 'drug abusers', there exists a multitude of qualifiers and quantifiers which produce a measured assessment which does not differ significantly from the non-drug user of non-drug abuser. In other words, the general feeling derived from the literature available indicates that the population called 'drug abusers' is so heterogeneous and diverse a population that statistical investigation will indicate that it does not differ from the 'normal' non-drug using or non-drug abusing population. Heroin addiction, which is mutually agreed to be the most severe, dan-

gerous, expensive, and deleterious drug abuse and social problem in this country today, must be researched independently from other drug abuse.

Q 14 What is the Sixteen Personality Factor (16PF) Questionnaire, and why was it chosen rather than some other personality assessment for this particular study?

The 16 Personality Factor Questionnaire was chosen by this researcher after an investigation of 4 personality measure inventories and a pilot study on each. The instruments which were considered for this study were:

1. Contact Personality Factor Test
2. Neuroticism Scale Questionnaire
3. Personality Orientation Inventory
4. Sixteen Personality Factor Questionnaire

The following characteristics or properties were carefully weighed concerning each test before the decision was made:

1. The length of administration time
2. Maximum yield of data for time involved

3. Workable, meaningful definitions of personality characteristics
4. Personality characteristics which deal realistically with practical implications
5. Costs of administration and scoring
6. Highest reliability and validity scales for most conclusions
7. Time involved in ordering, machine scoring, and receiving tests

All four tests were administered to a group of five subjects and the results were analyzed. The two tests which applied themselves best were the Personality Orientation Inventory and the 16 Personality Factor Questionnaire. The decision was based on the recent material which the Personality Orientation Inventory did not have and the 16PF Questionnaire did have.

In a paper prepared for the 1971 Annual Conference for the American Society of Criminology and International Association of Human Law, Dr. Carl D. Chambers (8) reported on the Personality Profiles of female narcotic users. Dr. Chambers used the 16PF Questionnaire, and in subsequent con-

versations with Dr. Chambers by telephone, this author was encouraged to use this particular instrument.

The 16PF is a self administering paper/pencil inventory check list which has the same general characteristics of the Minnesota Multiphasic Personality Inventory. The test was developed and standardized by Cattell at the University of Illinois Laboratory of Personality Analysis. All test instruments were machine scored and analyzed at the Laboratory of Personality Analysis.

The test comes in two forms; form C, which is made up of multiple choice items for use with persons having average intelligence, and form D, which is made up of forced choice items (either /or) for lower literacy levels. For this particular study, form C was used.

The Chambers study was interested in describing only three of the 16PF characteristics. It dealt with broad influence patterns, which were: a) Personality Orientation (either introverted or extroverted), b) Approach to task/problem solving (emotional versus rational), and c)

Lifestyle (independent versus subdued). These broad patterns are mentioned now to familiarize the reader with the test and its applicability to the particular population under investigation. A more detailed investigation of the relevancy of Dr. Chambers' study will appear below.

Another important factor about the 16PF Questionnaire which contributed to its selection as the instrument for this study included the test's psychometric properties. The test's consistencies, validities, and reliability data are available in the Handbook for the 16PF (69). The Handbook provides data concerned with equivalence coefficients for equivalent forms of the test, direct concept validity material, indirect or circumstantial concept validity data, and a section concerned with concrete (direct) validity (69). Another section of the Handbook describes the circumstantial, indirect validities for the full 16PF. In addition, data describing the test's homogeneity (generally mislabeled 'reliability') and equivalence is also in the Handbook. All of this data, when compared with similar data of the other three possible

choices for instruments, indicated that the 16PF was the best choice for this study.

Q 15 The present study investigated selected non-intellectual (demographic) and personality variables. What have similar studies in the past found?

In regards to the personality variable of the heroin addict, the Carl D. Chambers publication of 1971 (8), used the 16PF to investigate and explain personality profiles of female narcotic users. The study was performed during the 1967-1968 Research Clinic at Lexington, Kentucky, at the National Institute of Mental Health Hospital. The most significant portion of that study reported upon the personality deviances of the female drug abuser. From one viewpoint, the applicability of Dr. Chambers' results are not especially relevant to this particular study due to, in part, the fact that his study involved females only, and the present study involves males only. Dr. Chambers did, however, plot the mean scores for the 16 personality factors for the population he investi-

gated which consisted of 150 female narcotic users.

From the 16 personality factors which the test describes (8), Dr. Chambers chose three in particular to analyze. They include: a) Personality Orientation b) Approach to Task/Problem Solving and c) Life Style. Part of his results are as follows:

Distributions of Broad Personality Patterns

Among 150 Female Narcotic Users

a. Personality Orientation	N	% of Sample
Introverted	42	28.0 %
Balanced	69	46.0 %
Extroverted	39	26.0 %
b. Approach to Task/Problem Solving		
Emotional	10	6.7 %
Balance	61	40.7 %
Rational	79	52.6 %
c. Lifestyle		
Independent	46	30.7 %
Balanced	81	54.0 %
Subdued	23	13.3 %

When the results of the Chambers study are compared with those of the norms as they appeared in the Handbook for the 16PF (8), the comparison reveals that there does not exist a significant difference between Dr. Chambers' female addict popu-

lation and the normal population for which the test was normed. It should be pointed out at this time, however, that the present study differs quite significantly from Dr. Chambers' study in so far as it compares nothing with the "normal" population, but seeks to describe and define differences between the populations within the Ingham County Jail. More clearly, the present study, as earlier stated, does not seek differences between each population under investigation and a "normal" population, but differences between the two populations under investigation - that of the heroin addicted and the non-heroin person.

Numerous other studies have concentrated on the personal or demographic type of data. There are ever-present precautions, however, surrounding this type of data collection, and it is these precautions which are particularly relevant to the present study. Dr. Johnathon D. Rosenthal (59) states that from his experiences, both patients and the families history may be very unreliable. The amount of drugs used may be over or under estimated. Dr. Rosenthal states that this can occur

because the patient may become confused, lose track of time and the amount of drugs ingested, and because of dishonesty. Suppliers of the drug, i.e., legal sources such as drug stores, may also be unreliable because of potential repercussions. This unreliability of information is a serious pitfall which plagues research related to addiction in many ways, and precaution will continue to be an important consideration when drawing blind conclusions about tests and questionnaires from addicts. Dr. Rosenthal further explains, however, that demographic and personal data is a very important part of the case history of an addicted patient. In general, Dr. Rosentaal's article expresses the feelings that demographic and personal data about addicted persons may be very relevant to the quest for meaningful rehabilitative treatment.

The most concise and meaningful studies which collected demographic data about heroin addicts were done by Dr. Carl Chambers in 1970 (7). The data for his report were collected while Dr. Chambers was the Director of Research for the

Narcotics Addicts Rehabilitation Program in Philadelphia. Although Dr. Chambers' study was interested in descriptive data in order to display differences in similarities in out-patient and in-patient heroin addicts, the demographic data he collected on these patients appears particularly relevant to the present study.

Based on a population of 53 out-patient narcotic addicts with an age range of 18 to 63 years and a mean age of 28 years, the following characteristics were found:

<u>Characteristic</u>	<u>Percent of Sample</u>
Males	81.1%
Negroes	67.9%
Active members of a religious faith	7.5%
Reared in a broken home	24.5%
Never married	39.6%
Married, intact	18.9%
Married, broken	41.5%
Rejected from Military service	43.4%
School Dropouts	77.4%
Father was "white collar"	22.5%
Addict was "white collar" worker	5.7%
Worked continuously during past year	60.4%
Primary source of financial support was illegal	49.1%

When questioned on the basic characteristics of his

addiction, the data were as follows:

A. Onset situation (first use of heroin)	% Sample
1. With friends of same age	69.8%
2. Curiosity from peers already using	83.0%
B. Heroin at daily drug costs	
1. \$30 and below	56.0%
2. \$31 - \$50	20.7%
3. \$51 and above	22.7%

Some additional characteristics of this population were:

1. No history of prior treatment	80.2%
2. No history of criminal conviction	55.8%
3. No history of welfare	74.4%
4. No history of alcohol abuse	87.2%
5. No history of concurrent drugs	60.5%

One can gather, from reviewing this data, an overall picture of Dr. Chambers' population. It may or may not coincide with the descriptive data about the population in the present study, but it does provide justification for the usefulness of demographic data.

Conclusions and Remarks

By way of a question and answer approach, a review of literature and controversial concepts about heroin addiction has been presented. Hopefully, the

reader has not only been familiarized with data specifically related to the present study, but also he has had the opportunity to learn about heroin and the extent and seriousness of addiction in the United States today. The outstanding characteristic which seems dominant throughout the vast majority of literature is the lack of a universal consensus in describing the heroin addict, and those treatment methods which will enable him to approach a prescribed "recovery" criteria.

But this is truly where the problem lies. Although the research and literature include revealing data concerning approximations and estimates of substance qualities, quantities, concentrations, availability, prices, and the number of addicts and their characteristics, one fact emerges with increasing clarity: As long as the reward for smuggling and selling heroin remains astronomical; as long as it is easy to conceal and easy to transport, it is going to be easily available for a price. If we, as Americans, are ever going to cure the heroin epidemic, it won't be done by stopping heroin. Somehow, we're going to have to stop young Americans - they are the addicts - young

Americans mostly. They must be stopped from piercing their veins and pouring in the poison. The attack on the "supply" end of the connection cannot be as effective as the eradication of the "demand" portion of the cycle. The demand must be stemmed if the supply is to be dissolved. The demand is stemmed when the addict no longer desires heroin, and it is to this end - that of understanding and treating the addict, that this study is directed.

CHAPTER III

DESIGN OF THE STUDY

Restatement of the Problem

The purpose of this investigation is to examine selected non-intellectual, sociological, and psychological factors, and the relationships which they may have to heroin addiction. More specifically, an attempt was made to analyze the relationships of certain personality characteristics, values, socio-economic background, and the apparent commitment to habitual involvement with heroin.

Hypotheses

The research hypotheses under investigation in this study is:

Ho: Heroin addicted persons, homogeneous in the degree of heroin addiction, will not demonstrate significant differences from the heroin addicted persons on the 16PF and the Demographic Data Composite (DDC) used in this study.

The alternative hypotheses is:

Ha: The heroin addicted persons, homogeneous in degree of heroin addiction, will demonstrate significant differences from the non-heroin addicted persons on the 16PF and the DDC used in this study.

Related Concerns

This investigation sought to measure and compare certain non-intellectual, sociological, demographic, and psychological factors of heroin addicts and non-heroin addicts.

All of these factors are, within the terms of this study, dependent variables. Heroin addiction and non-heroin addiction are the independent variables. The generalizability and general usefulness of this study, however, lies within the relationships between these different psychological and sociological factors and heroin addiction. If the above dependent variables are known, and considered to be independent variables, then the heroin addiction takes the role of the dependent variable. Therefore, the usefulness of this study lies within its ability to show a relationship with heroin addiction based upon the knowledge of the above mentioned non-in-

tellectual and demographic variables.

The above hypotheses are closely associated with investigating and discussing the following empirical questions:

1. Do the personality variables and personality traits have a potential relationship to heroin addiction?
2. Does demographic and personal data regarding the individual background, as measured by the instrument constructed for this specific purpose and this specific investigation, have a potential relationship to heroin addiction?

Further, this study will supply the basic underpinnings for further investigations of the following questions:

3. Will a significant difference between the heroin addicted population on the personality assessment scale be a useful variable in describing and predicting heroin addiction?
4. Will a significant difference between the heroin addicted population and the non-heroin addicted population on the demographic data composite be a useful variable in describing and predicting heroin addiction?

Population

The population for this study consisted of inmates at the Ingham County Jail at Mason, Michigan. Specific generalizations are restricted to this particular population. In reality, the conclusions of this investigation were specifically concerned with only the population under investigation. The data provided, however, are clearly defined and quite concise. All characteristics, whether they be personality, demographic, or social, are fully described. This was done in hopes that the reader would be placed in a position of generalizing the results of this study to another population should he deem them appropriate.

Sample

The sample consisted of 64 individuals--32 in the experimental group, and 32 in the control group. The sample possessed the following characteristics for the experimental group:

1. Incarcerated male inmates at the Ingham County Jail
2. No psychosis present
3. Physically addicted to heroin to an equal extent
4. Addiction of more than six months duration
5. No exposure to previous therapy programs

The sample for the control group was identical except for conditions number three and four. Substituted were:

3. Not physically addicted to a drug
4. No obtainable history of addiction whatsoever

The sample was obtained by employing the following procedure: All inmates at the Ingham County Jail were screened to determine the evidence of any drug use. This was accomplished by the following means:

1. Identifying inmates that have been arrested for drug-related charges
2. Inmates who have been brought in previously for drug-related charges
3. Subjects who have been identified by the physician as having drug-related problems
4. Subjects who have indicated they have drug-related problems, and seek treatment although they were not arrested for drug offenses.
5. Subjects referred to the drug rehabilitation programs through other professionals on the jail rehabilitation staff.
6. Physical observation of the subject's withdrawal symptoms, or overt behavioral changes.

All of the subjects obtained from the above sample were further screened by the professional staff at the Community Mental Health Drug Program where the following questions were asked and data obtained:

1. Was there any indication of psychosis? If so, these persons were not included in the study.
2. An indication was noted as to the type of drug used and level of addiction, including the extent and amount of drug use. Only heroin users qualified for the experimental group.

The determination of the amount and duration of drug use was based upon:

1. Subjects self-report
2. Observed physiological symptoms and severity of withdrawal, including evidence of flashbacks or needletracks
3. Report from the attending physician
4. Interviews by the professional drug rehabilitation staff
5. Reports of known pushers who have had inmates as "clients"
6. Previous records

Procedure

Subjects for this study possessed the basic characteristics as listed above. These characteristics of the sample helped control for certain confounding variables such as type of drug, duration of addiction, and previous exposure to therapy. Selection for each group was random from each population...heroin user and non-heroin user. All subjects were given the personality instrument, and were interviewed and surveyed for the demographic data composite. It was imperative that the latter be accurate, and therefore, confidential records were used to maintain and guarantee authenticity.

Instruments

Basically, there were two instruments which were involved in the present study. One was the Demographic Data Composite, and the other was the Sixteen Personality Factor Questionnaire. The Demographic Data Composite consisted of the following material:

1. Age
2. Race
3. Sex
4. Marital status of true parents
5. Number of children of subject
6. True father alive or dead?

7. Did you grow up with your true father?
8. Educational level of true father.
9. True mother alive or dead?
10. Grow up with true mother?
11. Educational level of true mother?
12. Parents true marital status
13. Alcoholism history of mother or father
14. Educational level of subject.

The Sixteen Personality Factor Questionnaire was chosen after an investigation of four Personality Measure Inventories, and a pilot study on each. Those instruments which were considered for the present study are:

1. Contact Personality Factor Test
2. Neuroticism Scale Questionnaire
3. Personality Orientation Inventory
4. Sixteen Personality Factor Questionnaire

The following characteristics and properties were carefully weighed concerning each test before the decision was made:

1. The length of administration time
2. Maximum yield of data for time invested
3. Workable, meaningful definitions of personality characteristics

4. Personality characteristics which deal realistically with practical implications
5. Costs of administration and scoring
6. Higher reliability and validity values than the other three tests
7. Time involved in ordering, machine scoring, and receiving tests

All four tests were administered to a group of five subjects, and the results were then analyzed. The two tests which "worked" best were the Personality Orientation Inventory (the POI), and the Sixteen Personality Factor Questionnaire (the 16PF). The decision was based on the recent relevant material which the POI did not have, and the 16PF did.

The 16 personality factors which the 16PF assesses included:

cool, reserved.....	warm, easygoing
dull.....	bright
easily upset.....	calm, stable
not assertive.....	dominant
sober, serious.....	happy-go-lucky
expedient.....	conscientious
shy, timid.....	venturesome
toughminded.....	tenderminded
trusting.....	suspicious
practical.....	imaginative
forthright.....	shrewd
self-assured.....	apprehensive
conservative.....	experimenting
group oriented.....	self sufficient
undisciplined.....	self disciplined
relaxed.....	tense, driven

Analysis of the Data and Design

The analysis of the data consisted mainly of two parts. Part one was a correlation matrix constructed for the thirty variables for the heroin addicted persons, and a correlation matrix for the thirty variables for the non-heroin addicted persons. The meaningfulness and relevance of this design indicated various patterns and relationships between the variables within each of the groups in the investigation.

The second part consisted of an analysis of variance between the means of each variable for each group in the experiment. In other words, for variable one (cool, reserved...warm, easygoing) an analysis of variance was performed to evaluate and describe significant differences which existed between the mean score of the experimental group and the mean score of the control group. This analysis of variance was performed on all thirty variables.

CHAPTER IV

ANALYSIS OF THE DATA

This chapter will present the analysis of the data in order to examine the hypotheses under investigation. The primary hypothesis predicted there would be significant differences on each of the 30 variables between the two groups under investigation. Appendix B contains a complete breakdown of the distributions of the individual scores on the 16 Personality Factor Questionnaire (16PF) and also on the Demographic Data Composite (DDC). Appendix C contains a composite table of all means, sums of squares, degrees of freedom, mean squares, F values, and significance levels for the results of the statistical analysis of the data.

Description of the Data Base

Specifically, the data collected for this investigation and presented in this chapter represents the basis for an analysis of the differences between the two groups of

subjects on each of 30 variables. As each variable is presented along with its data and analysis, the reader will be supplied with some additional materials to make the analysis more meaningful. A description and definition of the variable will be presented to assure agreement of implied meaning with defined meaning. For each of the factors on the 16PF profile, a description taken from the Handbook for the 16PF (69) will be presented in order to familiarize the reader with the implications and limitations of the instrument's scores. Similarly, a description of each of the demographic variables will be presented to enable the reader to evaluate the meaningfulness of each of these factors.

Description and Interpretation of Tables

The tables are uniform throughout this chapter, and a brief description of how these tables are compiled and interpreted is as follows:

1. Group 001 represents the heroin addicted persons.
2. Group 002 represents the non-heroin addicted persons.
3. n signifies the sample size. This figure is 32 for each group on each variable.
4. Mean Score signifies the total of the individual

scores for that particular variable divided by the N, yielding an average or mean value

5. Standard Deviation is a statistical computation measuring the degree of central tendency. The equation upon which this figure is based is:

$$s = \frac{\sum (X_{ij} - \bar{x})^2}{n}$$

where

s = standard deviation of sample
 X_{ij} = each observation
 $\bar{x}$ = mean for distribution
 n = sample size

The other portions of the table represents the sources of variation and the results of the analysis of variance for the groups of the study.

6. Source of Variance indicates the source of the variances within the analysis yielding the basis for determining significance.
7. Sum of Squares is a statistical computation which is based upon the following equation:

$$\sum x_{ij}^2 = \sum x^2 - \frac{(\sum x)^2}{N}$$

where N = total sample size

8. Degrees of Freedom is a figure based upon the number of characters or treatments under investigation, minus one. The degrees of freedom also serves as the guide for locating the appropriate F value within the F tables which corresponds to the degree of freedom in the numerator and the degrees of freedom in the denominator as a ratio of the sample variances.
9. Mean Square represents an estimate of variance, and is derived by dividing the sum of squares by the degrees of freedom, as such:

$$\frac{\text{sum of squares}}{\text{degrees of freedom}} = \text{mean square}$$

10. F value is the resulting quotient from the above equation. This F value represents a relationship or ratio between two estimates of variances.
11. Significance level is, in reality, a measure or indication of chance occurrence. The resulting figure represents the number of times in 1000 trials that pure chance will produce the ratio of the two variances and the differences between the two samples. For this particular study, an outcome which could result from chance less than

50 times in 1000 trials (.050) was deemed to be significant.

In general, the F test is often referred to as a test for homogeneity of variance. If the two sample variances, s_{001}^2 (for heroin addicted persons) and s_{002}^2 (for non-heroin addicted persons) are not equal for a given variable, then a test is performed to determine if the difference between them is significant. If a non-significant value is obtained, the two sample variances are said to be homogeneous, that is, they are both assumed to be estimates of the same population variance. With a significant value of F , the variances are said to be heterogeneous, or from different populations.

A very important consideration is sample size, since smaller differences between the two variances become significant as sample size increases. Generally, a sample size of 30 is required to satisfactorily acknowledge the F test as meaningful. The present study uses 32 subjects per group.

The format for the following chapter consists of a brief narrative for each of the 30 variables of the study, and the tables and figures are found in their numerical order at the end of the chapter.

FACTOR ONE

Name: Cool vs. Warm

Figure 1 presents the characteristics of factor one as described by the Handbook for the 16PF (69).

Table 1 presents the analysis of the data between the two groups for factor one. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR TWO

Name: Dull vs. Bright

Figure 2 presents the characteristics of factor two as described by the Handbook for the 16PF (69).

Table 2 presents the data and the analysis for factor two. The difference between the two groups is significant beyond the .05 level. A review of the means indicates that the difference is a result of the heroin addicted group having a *lower* mean score (36.500) and the non-heroin addicted group having a *higher* mean score (70.513).

FACTOR THREE

Name: Easily Upset vs. Stable

Figure 3 presents the characteristics of factor three as described by the Handbook for the 16PF (69).

Table 3 presents the data and the analysis for factor

three. The difference between the two groups is significant beyond the .05 level. A review of the means indicates that the difference is a result of the heroin addicted group having a *lower* mean score (22.063) and the non-heroin group having a *higher* mean score (54.125).

FACTOR FOUR

Name: Not Assertive vs. Dominant

Figure 4 presents the characteristics of factor four as described by the Handbook for the 16PF (69).

Table 4 presents the analysis of the data between the two groups for factor 4. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR FIVE

Name: Sober vs. Happy-go-lucky

Figure 5 presents the characteristics of factor five as described by the Handbook for the 16PF (69).

Table 5 presents the analysis of the data between the two groups for factor five. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR SIX

Name: Expedient vs. Conscientious

Figure 6 presents the characteristics of factor six as described by the Handbook for the 16PF (69).

Table 6 presents the analysis of the data between the two groups for factor six. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR SEVEN

Name: Shy vs. Venturesome

Figure 7 presents the characteristics of factor seven as described by the Handbook for the 16PF (69).

Table 7 presents the analysis of the data between the two groups for factor seven. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR EIGHT

Name: Tough Minded vs. Tender Minded

Figure 8 presents the characteristics of factor eight as described by the Handbook for the 16PF (69).

Table 8 presents the analysis of the data between the two groups for factor eight. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR NINE

Name: Trusting vs. Suspicious

Figure 9 presents the characteristics of factor nine as described by the Handbook for the 16PF (69).

Table 9 presents the analysis of the data between the two groups for factor nine. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR TEN

Name: Practical vs. Imaginative

Figure 10 presents the characteristics of factor ten as described by the Handbook for the 16PF (69).

Table 10 presents the data and the analysis for factor ten. The difference between the two groups is significant beyond the .05 level. A review of the means indicates that the difference is a result of the heroin addicted group having a *lower* mean score (34.031) and the non-heroin group having a *higher* mean score (71.656).

FACTOR ELEVEN

Name: Forthright vs. Shrewd

Figure 11 presents the characteristics of factor eleven as described by the Handbook for the 16PF (69).

Table 11 presents the data and the analysis for fac-

tor eleven. The difference between the two groups is significant beyond the .05 level. A review of the means indicates that the difference is a result of the heroin addicted group having a *higher* mean score (59.875) and the non-heroin group having a *lower* mean score (43.781).

FACTOR TWELVE

Name: Self Assured vs. Apprehensive

Figure 12 presents the characteristics of factor twelve as described by the Handbook for the 16PF (69).

Table 12 presents the data and the analysis for factor twelve. The difference between the two groups is significant beyond the .05 level. A review of the means indicates that the difference is a result of the heroin addicted group having a *higher* mean score (78.219) and the non-heroin addicted group having a *lower* mean score (52.781).

FACTOR THIRTEEN

Name: Conservative vs. Experimenting

Figure 13 presents the characteristics of factor thirteen as described by the Handbook for the 16PF (69).

Table 13 presents the analysis of the data between the two groups for factor thirteen. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR FOURTEEN

Name: Group Oriented vs. Self Sufficient

Figure 14 presents the characteristics of factor fourteen as described by the Handbook for the 16PF (69).

Table 14 presents the analysis of the data between the two groups for factor fourteen. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR FIFTEEN

Name: Undisciplined vs. Self Disciplined

Figure 15 presents the characteristics of factor fifteen as described by the Handbook for the 16PF (69).

Table 15 presents the analysis of the data between the two groups for factor fifteen. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

FACTOR SIXTEEN

Name: Relaxed vs. Tense

Figure 16 presents the characteristics of factor sixteen as described by the Handbook for the 16PF (69).

Table 16 presents the analysis of the data between the two groups for factor sixteen. This factor is not significant beyond the .05 level, and the estimates of variance are assumed to estimates of the same population.

Transitional Comment

The above 16 factors complete the 16 Personality Factor Questionnaire which served as the personality variables for the study. The following 14 variables are those demographic characteristics which comprise the non-intellectual type data of the study. Because the 16PF specifies each of its components as a "factor", the following data will be classified as "variables" to enable the reader to differentiate the factors (personality) and variables (non-intellectual) of the study.

The layout of the following variables will be very similar to those of the factors with minor changes. Added will be a brief description of the variable name and its meaning relative to this particular study.

Also, a range of scores will be presented with each variable to permit the reader to determine the meaningfulness of the respective means relative to a score range. Another added feature will be the number of the item on the questionnaire (Demographic Data Composite) which corresponded with that particular variable. Appendix D represents the Demographic Data Composite (DDC) exactly as it was originally presented to the subjects of the study during the collection of the data.

VARIABLE SEVENTEEN

Variable: Age

Description: Cronological age, in years, at last birthday

Range: Two digits, 00 through 99 years

Demographic Data Composite (DDC) item number: 2

Table 17 presents the analysis of the data between the two groups for variable seventeen. This variable is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE EIGHTEEN

Variable: Race

Description: code 1 = Black
code 2 = Chicano
code 3 = White

Range: One digit, 1 through 3

DDC item number: 3

Table 18 presents the analysis of the data between the two groups for variable eighteen. This variable is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE NINETEEN

Variable: Sex

Description: code 1 = female
code 2 = male

Range: One digit, 1 or 2
DDC item number: 4

Note: All subjects were males, therefore, there was no doubt but that the sampling was performed upon a homogeneous population for this variable.

Table 19 presents the analysis of the data between the two groups for variable nineteen. This variable is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE TWENTY

Variable: Marital Status of Subject
Description: code 1 = single
code 2 = divorced
code 3 = separated
code 4 = widowed
code 5 = common law
code 6 = married

Range: One digit, 1 through 6
DDC item number: 5

Table 20 presents the data and the analysis for variable twenty. The difference between the two groups is significant beyond the .05 level. A review of the means and the above description indicates that the heroin addicted group have a *lower* mean score (3.31) and the non-heroin addicted group have a *higher* mean score (4.88).

VARIABLE TWENTY ONE

Variable: Number of Children of Subject

Description: Number of children to whom subject is the father
without concern for legitimacy

Range: two digits, 00 through 99, representing the quantity

DDC item number: 6

Table 21 presents the data and the analysis for variable twenty one. The difference between the two groups is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE TWENTY TWO

Variable: True father, alive or dead

Description: By way of the subject's stated word, and the central data file with the Michigan State Police, it was determined whether the subject's true father was living or deceased. If it was undeterminable whether the subject's true father was alive or dead, then the subject was not used in the study.

Range: one digit, 1 or 2, code 1 = Dead, code 2 = Alive

DDC item number: 7

Table 22 presents the data and the analysis for variable twenty two. The difference between the two groups is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE TWENTY THREE

Variable: Grow up with true father

Description: This was an affective question seeking specifically whether the subject felt that he grew up with his true father. Locating evidence would not necessarily disprove nor verify the subject's feelings that he did or didn't grow up with his father.

Range: One digit, 1 or 2, code 1 = No, code 2 = Yes

DDC item number: 8

Table 23 presents the data and the analysis for variable twenty three. The difference between the two groups is significant beyond the .05 level. A review of the means and the above description indicates that the heroin addicted group have a *lower* mean score (1.47) and the non-heroin addicted group have a *higher* mean score (1.78).

VARIABLE TWENTY FOUR

Variable: Educational level of True father

Description: By way of the subject's stated word and phone contacts with relatives, it was determined how much educational background and formal schooling the subject's true father had experienced.

- code 1 = don't know
- code 2 = first through sixth grade
- code 3 = seventh through eighth grade
- code 4 = ninth through tenth grade
- code 5 = eleventh through twelfth, no high school graduate
- code 6 = high school graduate
- code 7 = one through two years college
- code 8 = three through four years college
- code 9 = any graduate work at all

Range: One digit, 1 through 9
 DDC item number: 9

Table 24 presents the data and the analysis for variable twenty four. The difference between the two groups is significant beyond the .05 level. A review of the means and the above description indicates that the heroin addicted group have a *lower* mean score (4.50) and the non-heroin addicted group have a *higher* mean score (5.56).

VARIABLE TWENTY FIVE

Variable: True mother, alive or dead

Description: By way of the subject's stated word, and the central data file with the Michigan State Police, it was determined whether the subject's true mother was living or deceased. If it was undeterminable whether the subject's true mother was alive or dead, then the subject was not used in the study.

Range: One digit, 1 or 2 , code 1 = Dead, code 2 = Alive
 DDC item number: 10

Table 25 presents the data and the analysis for variable 25. The difference between the two groups is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE TWENTY SIX

Variable: Grow up with true mother

Description: This was an affective question seeking specifically whether the subject felt that he grew up with his true mother. Locating evidence would not necessarily disprove nor verify the subject's feelings that he did or didn't grow up with his father.

Range: One digit, 1 or 2, code 1 = No, code 2 = Yes

DDC item number: 11

Table 26 presents the data and the analysis for variable twenty six. The difference between the two groups is significant beyond the .05 level. A review of the means and the above description indicates that the heroin addicted group have a *lower* mean score (1.81) and the non-heroin addicted group have a *higher* mean score (1.97).

VARIABLE TWENTY SEVEN

Variable: Educational level of true mother.

Description: By way of the subject's stated word and phone contacts with relatives, it was determined how much educational background and formal schooling the subject's true mother had experienced.

code 1 = don't know

code 2 = first through sixth grade

code 3 = seventh through eighth grade

code 4 = ninth through tenth grade

code 5 = eleventh through twelfth, no high school graduate

code 6 = high school graduate

code 7 = one through two years college

code 8 = three through four years college

code 9 = any graduate work at all

Range: One digit, 1 through 9
DDC item number: 12

Table 27 presents the data and the analysis for variable twenty seven. The difference between the two groups is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE TWENTY EIGHT

Variable: Marital Status of Subject's true parents

Description: code 1 = single
code 2 = divorced
code 3 = separated
code 4 = widowed
code 5 = common law
code 6 = married

Range: One digit, 1 through 6
DDC item number: 13

Table 28 presents the data and the analysis for variable twenty eight. The difference between the two groups is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE TWENTY NINE

Variable: History of Alcoholism or Alcohol Abuse in Subject's Mother or Father

Description: By way of the subject's stated word, and through phone contacts with relatives and also additional social service agencies, it was determined whether the subject's father or mother was alcoholic or abused alcohol. This abuse was deemed significant if the subject recalled particular periods of his life where alcohol was a definite problem with one of his parents and their relationship with the family.

Range: One digit, 1 through 4

DDC item number: 14

Table 28 presents the data and the analysis for variable twenty eight. The difference between the two groups is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

VARIABLE THIRTY

Variable: Educational level of subject

Description: By way of the subject's stated word and phone contacts with relatives, it was determined how much educational background and formal schooling the subject has experienced.

code 1 = don't know

code 2 = first through sixth grade

code 3 = seventh through eighth grade

code 4 = ninth through tenth grade

code 5 = eleventh through twelfth, no high school graduate

code 6 = high school graduate

code 7 = one through two years college

code 8 = three through four years college

code 9 = any graduate work at all

Range: One digit, 1 through 9

DDC item number: 15

Table 30 presents the data and the analysis for

variable thirty. The difference between the two groups is not significant beyond the .05 level, and the estimates of variance are assumed to be estimates of the same population.

Additional Results

An inter-correlational matrix was constructed for each of the two groups in this study. This was done for the purpose of identifying the existence of significant correlational relationships between the 30 variables within each group. Appendices E and F represent these matrices for heroin addicted persons and non-heroin addicted persons respectively.

The construction of these matrices did not yield particularly meaningful results. However, there are two particular indications which a review of these two matrices suggest.

First, the inter-correlations for the 16PF are represented by the figures appearing for the first 16 factors on both the ordinate and the abscissa. A comparison of the two groups revealed that the heroin addicted persons showed a total of 23 significant correlations, either negative or positive, while the non-heroin addicted group showed 35 significant correlations. The inter-corre-

lation of factors and their mutual prediction of each other is one measure of internal consistence, which is a form of reliability.

Secondly, the inter-correlations between the last 14 variables on each axis, those of the Demographic Data Composite, reveal that this instrument was more consistent and more reliable for the two groups as indicated by 27 significant correlations for each of the two population samples in the study.

Figure 1

Description of Factor One

Low Score (Possible 1)		High Score (Possible 99)
Reserved, Detached, Critical Aloof, Stiff	vs.	Warmhearted, Outgoing, Easygoing, Participating
Additional Characteristics		
critical	vs.	good natured, easygoing
stands by his own ideas	vs.	ready to cooperate, likes to participate
cool, aloof	vs.	attentive to people
precise, objective	vs.	soft-hearted, casual
distrustful, skeptical	vs.	trustful
rigid	vs.	adaptable, careless, "Goes along"
cold	vs.	warmhearted
prone to sulk	vs.	laughs readily

Table 1

Analysis of Factor One

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	53.188	25.248
Group 002 (non-addicted persons)	32	42.094	29.907

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	1969.141	1	1969.141	2.571	0.114
Error	47487.594	62	765.930		
Total (about mean)	49456.734	63			

Figure 2

Description of Factor Two

Low Score (Possible 1)		High Score (Possible 99)	
Crystallized, Power Measure Dull		vs.	Crystallized, Power Measure Bright
Additional Characteristics			
low mental capacity		vs.	high general mental capacity
unable to handle abstract		vs.	insightful, fast-learning, in-
problems			tellectually adaptable
The measurement of intelligence has been shown to carry with it, as a factor in the personality realm, some of the following ratings; the correlations, however, are quite low.			
apt to be less well organized		vs.	inclined to have more intellec-
			tual interests
poorer judgement		vs.	showing better judgement
of lower morale		vs.	of higher morale
quitting		vs.	persevering

Table 2

Analysis of Factor Two

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	36.500	22.871
Group 002 (non-addicted persons)	32	70.313	24.718

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signifi- cance
Regression (about mean)	18292.562	1	18292.562	32.260	0.0005 *
Error	35256.874	62	567.046		
Total (about mean)	53449.437				

*p < .05

Figure 3

Description of Factor Three

Low Score (Possible 1)		High Score (Possible 99)
Affected by Feelings, Emotionally less Stable, Easily Upset, Changeable	vs.	Emotionally Stable, Mature, Faces Reality, Calm
Additional Characteristics		
gets emotional when frustrated	vs.	emotionally mature
changeable in attitudes and interests	vs.	stable, constant in interests
easily perturbed	vs.	calm
evasive of responsibilities, tending to give up	vs.	does not let emotional needs obscure realities of a situation, adjusts to facts
worrying	vs.	unruffled
gets into fights and problem situations	vs.	shows restraint in avoiding difficulties

Table 3

Analysis of Factor Three

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	22.063	22.957
Group 002 (non-addicted persons)	32	54.125	33.642

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	16448.063	1	16448.063	19.831	0.0005*
Error	51423.375	62	829.409		
Total (about mean)	67871.437	63			

*p < .05

Figure 4

Description of Factor Four

Low Score (Possible 1)		High Score (Possible 99)	
Obedient, Mild, Easily Led, Docile, Accomodating		vs.	Assertive, Aggressive, Competitive, Stubborn
Additional Characteristics			
submissive	vs.	assertive	
dependent	vs.	independent-minded	
considerate, diplomatic	vs.	stern, hostile	
expressive	vs.	solemn	
conventional, conforming	vs.	unconventional, rebellious	
easily upset by authority	vs.	headstrong	
humble	vs.	admiration demanding	

Table 4

Analysis of Factor Four

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	45.719	27.485
Group 002 (non-addicted persons)	32	59.906	30.221

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	3220.562	1	3220.564	3.899	0.054
Error	51731.188	62	834.374		
Total	54951.750	63			

Figure 5

Description of Factor Five

Low Score (Possible 1)		High Score (Possible 99)	
Sober, Taciturn, Serious		vs.	Enthusiastic, Heedless, Happy-go-lucky
Additional Characteristics			
silent, introspective	vs.	talkative	
full of cares	vs.	cheerful	
concerned, reflective	vs.	happy-go-lucky	
incommunicative, sticks to inner values	vs.	frank, expressive, reflects the group	
slow, cautious	vs.	quick and alert	

Table 5

Analysis of Factor Five

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	52.469	29.669
Group 002 (non-addicted persons)	32	62.188	34.367

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	1511.266	1	1511.266	1.466	0.231
Error	63902.844	62	1030.691		
Total (about mean)	65414.109	63			

Figure 6

Description of Factor Six

Low Score (Possible 1)		High Score (Possible 99)
Disregards Rules, Expedient	vs.	Conscientious, Persistent, Moralistic, Staid
Additional Characteristics		
quitting, fickle	vs.	Persevering, determined
frivolous	vs.	responsible
self-indulgent	vs.	emotionally disciplined
slack, indolent	vs.	consistently ordered
undependable	vs.	conscientious, dominated by sense of duty
disregards obligations to people	vs.	concerned about moral standards and rules

Table 6

Analysis of Factor Six

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	36.906	24.155
Group 002 (non-addicted persons)	32	32.406	29.034

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	324.000	1	324.000	0.454	0.503
Error	44542.437	62			
Total (about mean)	44542.437	63			

Figure 7

Description of Factor Seven

Low Score (Possible 1)		High Score (Possible 99)
Shy, Timid, Restrained, Threat- Sensitive	vs.	Adventurous, "Thick-skinned", Socially Bold
Additional Characteristics		
shy, withdrawn	vs.	adventurous, likes meeting people
retiring in face of opposite sex	vs.	active, overt interest in opposite sex
emotionally cautious	vs.	responsive, genial
apt to be embittered	vs.	friendly
restrained, rule-bound	vs.	impulsive
restricted interests	vs.	emotional and artistic interests
careful, considerate, quick to see dangers	vs.	carefree, does not see danger signals

Table 7

Analysis of Factor Seven

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	45.063	31.324
Group 002 (non-addicted persons)	32	51.625	35.221

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	689.063	1	689.063	0.621	0.434
Error	68769.375	62	1109.183		
Total (about mean)	69458.437	63			

Figure 8

Description of Factor Eight

Low Score (Possible 1)		High Score (Possible 99)	
Tough-minded, Rejects Illusions	vs.	Tender-minded, sensitive, dependent, over-protected	
Additional Characteristics			
unsentimental, expects little	vs.	fidgety, expecting affection and attention	
self-reliant, taking responsibility	vs.	clinging, insecure, seeking help and sympathy	
hard (to point of cynicism)	vs.	kindly, gentle, indulgent to self and others	
few artistic responses (but not lacking in taste)	vs.	artistically fastidious, affected, theatrical	
unaffected by "fancies"	vs.	imaginative in inner life and in conversation	
acts on practical, logical evidence	vs.	acts on sensitive intuition	
keeps to the point	vs.	attention-seeking, flighty	
does not dwell on physical disabilities	vs.	hypochondriacal, anxious about self	

Table 8

Analysis of Factor Eight

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	75.188	19.390
Group 002 (non-addicted persons)	32	71.781	21.491

Source of Variance	Sum of Square	d. f.	Mean Square	F	Significance
Regression (about mean)	185.641	1	185.641	0.443	0.508
Error	25972.344	62	418.909		
Total (about mean)	26157.984				

Figure 9

Description of Factor Nine

Low Score (Possible 1)		High Score (Possible 99)
Trusting, Accepting Conditions	vs.	Suspecting, Jealous
accepts personal unimportance	vs.	jealous
pliant to changes	vs.	dogmatic
unsuspecting of hostility	vs.	suspicious of interference
ready to forget difficulties	vs.	swelling upon frustrations
understanding and permissive, tolerant	vs.	tyrannical
lax over correcting people	vs.	demanding people accept responsibility over errors
conciliatory	vs.	irritable

Table 9

Analysis of Factor Nine

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	64.313	24.320
Group 002 (non-addicted persons)	32	51.625	30.892

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	2575.563	1	2575.563	3.332	0.073
Error	47918.375	62	772.877		
Total (about mean)	50493.937	63			

Figure 10

Description of Factor Ten

Low Score (Possible 1)		High Score (Possible 99)
Practical, Has "Down to Earth" Concerns	vs.	Imaginative, Bohemian, Absent Minded
conventional, alert to practical needs	vs.	unconventional, absorbed in ideas
concerned with immediate interests and issues	vs.	interested in art, theory, basic beliefs
prosaic, avoids anything far-fetched	vs.	imaginatively enthralled by inner creations
guided by objective realities, dependable in practical judgement	vs.	fanciful, easily seduced from practical judgement
earnest, concerned or worried, but steady	vs.	generally enthused, but occasional hysterical swings of "giving up"

Table 10

Analysis of Factor Ten

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	34.031	24.720
Group 002 (non-addicted persons)	32	71.656	25.871

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	22650.250	1	22650.250	35.380	0.0005 *
Error	39692.187	62	640.197		
Total (about mean)	62342.438				

*p < .05

Figure 11

Description of Factor Eleven

Low Score (Possible 1)		High Score (Possible 99)	
Forthright, Unpretentious	vs.	Astute, Worldly	
genuine, but socially clumsy	vs.	polished, socially aware	
has vague and injudicious mind	vs.	has exact, calculating mind	
gregarious, gets warmly emo-	vs.	emotionally detached and disci-	
tionally involved		plined	
spontaneous, natural	vs.	artful	
has simple tastes	vs.	esthetically fastidious	
lacking self-insight	vs.	insightful regarding self	
unskilled in analyzing motives	vs.	insightful regarding others	
content with what comes	vs.	ambitious, possibly insecure	
has blind trust in human nature	vs.	smart, "cuts corners"	

Table 11

Analysis of Factor Eleven

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	59.875	27.447
Group 002 (non-addicted persons)	32	43.781	29.033

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	4144.141	1	4144.141	5.192	0.026*
Error	49482.969	62	798.112		
Total (about mean)	53627.109	63			

*p < .05

Figure 12

Description of Factor Twelve

Low Score (Possible 1)		High Score (Possible 99)
Self-assured, placid, secure, vs. complacent		apprehensive, self-reproaching, insecure, worrying, troubled
self-confident	vs.	worrying, anxious
cheerful, resilient	vs.	depressed, cries easily
impenitent, placid	vs.	easily touched, overcome by moods
expedient, insensitive to	vs.	strong sense of obligation, sensi-
people's approval or disap-		tive to people's approval and
proval		disapproval
does not care	vs.	scrupulous, fussy
rudely vigorous	vs.	hypochondriacal and inadequate
no fears	vs.	phobic symptoms
given to simple action	vs.	lonely, brooding

Table 12

Analysis of Factor Twelve

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	78.219	24.381
Group 002 (non-addicted persons)	32	52.781	27.270

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	10353.062	1	10353.062	15.474	0.0005 *
Error	51834.000	62	669.047		
Total (about mean)	51834.000	63			

*p < .05

Figure 13

Description of Factor Thirteen

Low Score (Possible 1)	High Score (Possible 99)
Conservative, Respecting, Established ideas, tolerant of traditional difficulties	vs. experimenting, liberal, analytical, free-thinking

Table 13

Analysis of Factor Thirteen

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	68.969	24.919
Group 002 (non-addicted persons)	32	67.375	27.129

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	40.641	1	40.641	0.060	0.807
Error	42064.469	62			
Total (about mean)	42105.109	63			

Figure 14

Description of Factor Fourteen

Low Score (Possible 1)		High Score (Possible 99)
Sociably group dependent, a joiner and sound follower	vs.	self-sufficient, resourceful, prefers own decisions

Table 14

Analysis of Factor Fourteen

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	44.719	34.828
Group 001 (non-addicted persons)	32	59.813	31.197

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	3645.141	1	3645.141	3.335	0.073
Error	67773.344	62			
Total (about mean)	71418.484	63			

Figure 15

Description of Factor Fifteen

Low Score (Possible 1)	High Score (Possible 99)
Uncontrolled, Lax, Follows Own urges, Careless of Social Rules	Controlled, exacting Will Power, Socially Precise, Compulsive, Following Self-Image

Table 15

Analysis of Factor Fifteen

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	38.313	24.386
Group 002 (non-addicted persons)	32	36.031	26.891

Source of Variance	Sum of Square	d.f.	Mean Square	F	Significance
Regression (about mean)	83.266	1	83.266	0.126	0.723
Error	40851.844	62	658.901		
Total (about mean)	40935.110	63			

Figure 16
Description of Factor Sixteen

Low Score (Possible 1)		High Score (Possible 99)
Relaxed, Tranquil, Torpid, Unfrustrated, Composed	vs.	Tense, Frustrated, Driven, Over- wrought, Fretful

Table 16
Analysis of Factor Sixteen

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	75.531	23.033
Group 002 (non-addicted persons)	32	61.750	33.320

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	3038.766	1	3038.766	3.704	0.059
Error	50861.969	62	820.354		
Total (about mean)	53900.734	63			

Table 17
Analysis of Variable Seventeen

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	23.094	6.347
Group 002 (non-addicted persons)	32	25.344	4.863

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	81.000	1	81.000	2.533	0.117
Error	1981.937	62	31.967		
Total (about mean:	2062.938	63			

Table 18

Analysis of Variable Eighteen

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	1.977	0.911
Group 002 (non-addicted persons)	32	1.952	0.965

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	0.391	1	0.391	0.405	0.527
Error	59.844	62	0.965		
Total (about mean)	60.234	63			

Table 19
Analysis of Variable Nineteen

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	2.000	0.000
Group 002 (non-addicted persons)	32	2.000	0.000

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	0.000	1	0.000	0.000	1.000
Error	0.000	62	0.000		
Total (about mean)	0.000	63			

Table 20
Analysis of Variable Twenty

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	3.313	2.389
Group 002 (non-addicted persons)	32	4.875	2.012

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	39.063	1	39.063	8.001	0.006 *
Error	302.375	62	4.877		
Total (about mean)	341.437	63			

*p < .05

Table 21

Analysis of Variable Twenty One

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	1.895	1.150
Group 002 (non-addicted persons)	32	1.800	0.941

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	1.266	1	1.266	0.875	0.353
Error	89.719	62	1.448		
Total (about mean)	90.984	63			

Table 22
Analysis of Variable Twenty Two

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	1.781	0.420
Group 002 (non-addicted persons)	32	1.875	0.336

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	0.141	1	0.141	0.972	0.328
Error	8.969	62	0.145		
Total (about mean)	9.109	63			

Table 23

Analysis of Variable Twenty Three

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	1.469	0.507
Group 002 (non-addicted persons)	32	1.781	0.420

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	1.563	1	1.563	7.209	0.009*
Error	13.438	62	0.217		
Total (about mean)	15.000	63			

*p < .05

Table 24

Analysis of Variable Twenty Four

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	4.500	2.200
Group 002 (non-addicted persons)	32	5.563	1.645

Source of Variance	Sum of Square	d. f.	Mean Square	F	Signi- ficance
Regression (about mean)	18.063	1	18.063	4.79	0.032*
Error	233.875	62	3.772		
Total (about mean)	251.936	63			

*p < .05

Table 25

Analysis of Variable Twenty Five

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	1.813	0.397
Group 002 (non-addicted persons)	32	1.875	0.336

Source of Variance	Sum of Squares	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	0.063	1	0.063	0.463	0.499
Error	8.375	62	0.135		
Total (about mean)	8.438	63			

Table 26
Analysis of Variable Twenty Six

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	1.813	0.397
Group 002 (non-addicted persons)	32	1.969	0.177

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	0.390	1	0.390	4.144	0.046*
Error	5.844	62	0.095		
Total (about mean)	6.234	63			

*p < .05

Table 27

Analysis of Variable Twenty Seven

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	5.250	2.155
Group 002 (non-addicted persons)	32	5.625	1.070

Source of Variance	Sum of Squares	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	2.250	1	2.250	0.777	0.381
Error	179.500	62	2.895		
Total (about mean)	181.750	63			

Table 28

Analysis of Variable Twenty Eight

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	4.844	1.706
Group 002 (non-addicted persons)	32	5.000	1.524

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	0.390	1	0.390	0.149	0.701
Error	162.219	62	2.616		
Total (about mean)	162.609				

Table 29
Analysis of Variable Twenty Nine

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	3.281	0.958
Group 002 (non-addicted persons)	32	3.656	0.653

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	2.250	1	2.250	3.346	0.072
Error	41.688	62	0.672		
Total (about mean)	43.938				

Table 30
Analysis of Variable Thirty

	n	Mean Score	Standard Deviation
Group 001 (addicted persons)	32	4.938	1.190
Group 002 (non-addicted persons)	32	5.188	1.281

Source of Variance	Sum of Square	d.f.	Mean Square	F	Signi- ficance
Regression (about mean)	1.000	1	1.000	0.654	0.422
Error	94.750	62	1.528		
Total (about mean)	95.750	63			

CHAPTER V

SUMMARY

The purpose of this study was to investigate selected non-intellectual and personality variables, and their relationship to heroin addiction. The study was undertaken at the Ingham County Jail, a county detention facility in Mason, Michigan. Sixty four male inmates comprised the subjects for the study.

Theory and Methodology

The Sixteen Personality Factor Questionnaire (69) was administered to the subjects in the study to determine if there was a significantly different response between the inmates who demonstrated a history of heroin addiction and those inmates which demonstrated no history of heroin addiction.

The Demographic Data Composite (DDC) was also administered to all subjects, and its results were analyzed. This analysis was performed in order to determine if there was a significantly different response between the heroin addicted subjects and the non-heroin addicted subjects on certain demographic and historical variables.

An analysis of variance was performed for each of the

16 factors on the 16PF, and for each of the 14 variables on the Demographic Data Composite, for the two groups. This total of thirty analyses of variance was performed in order to indicate statistically significant differences between the heroin addicted and the non-heroin addicted groups on each of the variables.

In addition, an inter-correlational matrix table was constructed for both the control and the experimental groups. The purpose of this undertaking was to allow an analysis of the correlational relationships between each of the variables within each group.

Findings

Conclusions, Practical Implications, and Limitations for the 16PF

The statistical analysis of the 16PF indicated a significant difference at the .05 level of confidence for the following five factors:

- Factor 2. Crystallized, Power Measure Dull vs.
Crystallized, Power Measure Bright
- Factor 3. Affected by feelings, emotionally less
stable, easily upset, changeable vs.
Emotionally stable, mature, faces reality,
calm
- Factor 10. Practical, Has "down-to-earth" concerns
vs. Imaginative, Bohemian, Absent-Minded
- Factor 11. Forthright, Unpretentious vs. astute,
worldly

Factor 12. Self assured, placid, secure, complacent
vs. apprehensive, self-reproaching, in-
secure, worrying, troubled.

Since these factors are truly more representative of a scale or a continuum rather than an isolated factor, it would be easier to interpret the meaningfulness of the score differences if they were to be graphically illustrated. Figure 16 presents a graphical illustration of the means of the five factors along with a brief description of each factor.

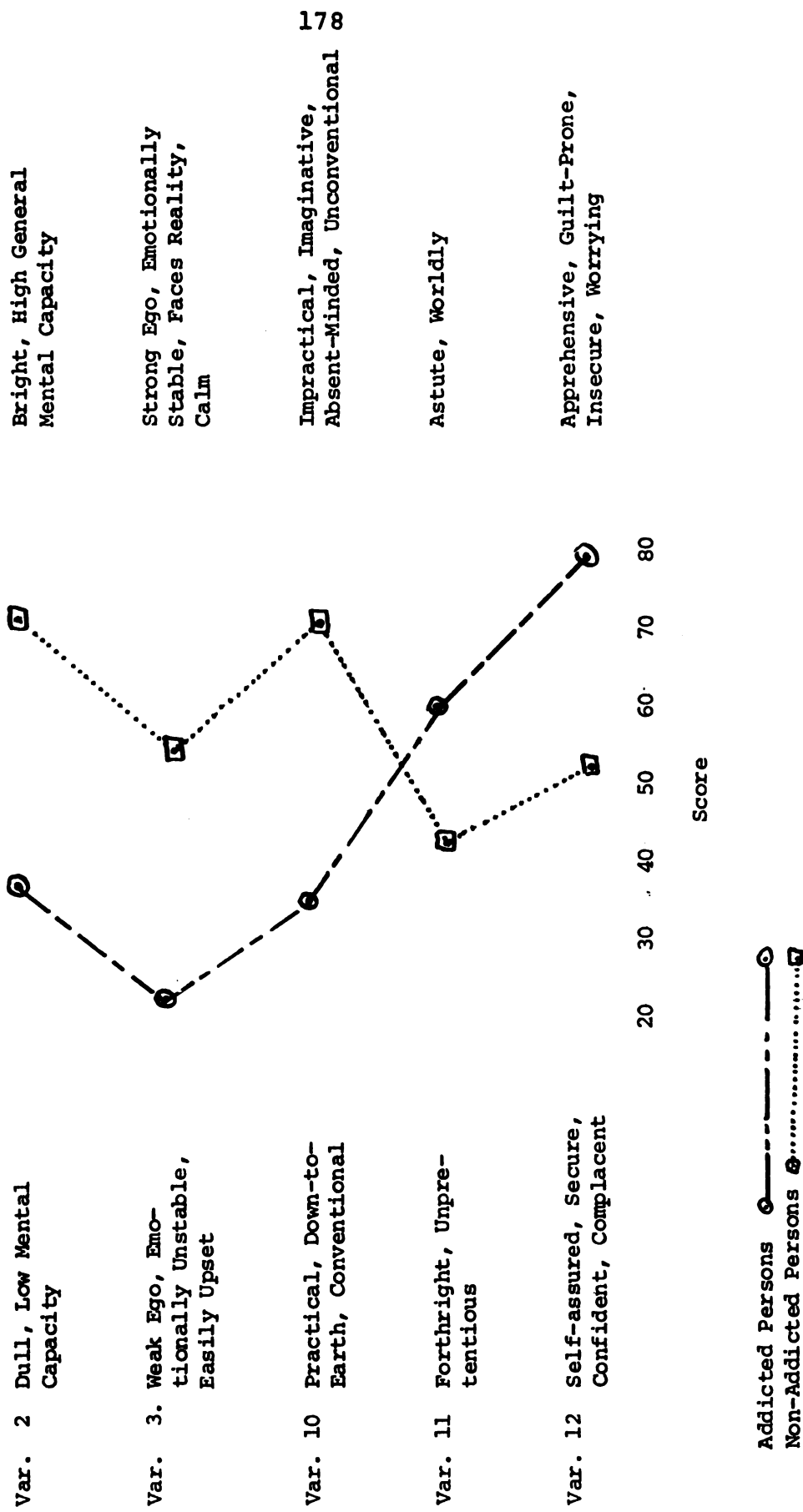
Data for Figure 16

factor	name	Means	
		addicted persons	non-addicted persons
2	dull vs. bright	36.5	70.3
3	easily upset vs. calm	22.1	54.1
10	practical vs. Imaginative	34.0	71.0
11	forthright vs. astute	60.0	43.8
12	self assured vs. apprehensive	78.2	52.8

As the present study was designed to lend itself particularly to the clinical setting, it would be rele-

Graph of the Means of the two Study Groups on the

Significantly Differing Factor of the 16PF



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vant and practical to limit the commentary to the clinical area.

1. Factor 2. Crystallized, Power Measure Dull vs.
Crystallized, Power Measure Bright

The findings suggest that the heroin addict exhibits a significantly lower mental capacity and ability towards abstract reasoning than did the non-addict. While this information may well have some very useful applications within the therapeutic setting, there do exist some limitations on these generalizations. It is very difficult to determine whether a measure of aptitude or organizational abilities is closely associated with academic background or not. As the present study will so state later, there existed no significant difference between the two groups in educational level attained.

2. Factor 3. Affected by feelings, emotionally less
stable, easily upset, changeable vs.
Emotionally stable, mature, faces reality.
calm

The findings suggest that the heroin addicts are more affected by feelings, and are emotionally more unstable than are the non-addicts. This indication may be of special relevance to the clinician as he formulates his approach to psychotherapy with the addicted person. These findings may also indicate some clinical investiga-

tion in the area of peer and family relationships and their meanings to the addict. These findings may further suggest the basis for the "poor" emotional stability which the literature characterizes as common to the addict.

An additional possible explanation for this score may lie within the design of the present study. The addicts were all incarcerated and deprived of family and friends. For the purpose of this study, they were removed from their cells by a counselor and talked with for a short time, and then given the instrument. Possibly, this score difference was a reflection of a reaction to an interruption of loneliness and/or boredom. Even in this context, however, it must be remembered that both groups were treated identically, and although the instrument was perhaps measuring an emotionally based response, there was a significant difference between the two groups.

3. Factor 10. Practical, Has "down-to-earth" concerns
vs. Imaginative, Bohemian, Absent-Minded

The significant difference between the means of the two groups on this factor suggest that the addict is more practical and down-to-earth than the non-addict. The implications here would be useful in avoiding a clinical approach which was not practical and pragmatic, but rather

geared to the addict's lesser imaginative and concrete mode of operation.

4. Factor 11. Forthright, unpretentious vs. astute, worldly

The findings lend validity to the suggestion that the addict is aware of his surroundings, and is astute in his perceptions. Somewhat contradictory to Factor 10 above, there are indications that the addict is not as forthright and unpretentious as is the non-addict. One possible explanation of this apparent conflict may be that the non-addict population and the addicted population are truly not a great deal different with respect to statistical means, but rather that one group or the other was quite homogeneous on its distribution about its mean and therefore, a smaller difference became significant.

5. Factor 12. Self assured, placid, secure, complacent, vs. apprehensive, self-reproaching, insecure, worrying, troubled.

When compared with the non-addict, the evidence here indicates that the addict is less self-assured, more apprehensive, worrying, and troubled. Clinically, this information may be extremely helpful in the areas of self-concept and ego development types of therapeutic endeavors. This finding may also indicate some of the possible pre-drug use conditions or factors which perhaps supplied the mo-

tivations and impetus for heroin use in the first place.

An additional suggestion for an explanation of this factor may be the following: A great deal of the addicted inmates are, or have been, convicted of a drug-related crime. These crimes are "victimless crimes" to the addict's way of thinking, and not worthy of the same punishment as is armed robbery or aggravated assault. There exists a general feeling of apprehension or worry about their legal status based upon the moral question in addition to the legal question. This apprehension would be most apparent in the jail, as the addict sits in the "establishment's house" waiting for justice for what he sees as nothing criminal.

Summary of Factors from the 16PF

There were some specific differences between the addicted and non-addicted inmates which lend themselves to therapeutic implication. Although these findings are not as easily generalized and conclusive as they first appear, there exists adequate underpinnings for tendencies and biases within the psychotherapeutic process.

Conclusions and Practical Implications for the Demographic Data Composite

The analysis of the remaining 14 variables, the Demo-

graphic Data Composite, yielded some interesting and relevant data. While the findings here are not as specifically clinically oriented as those above, there does appear to be the basis for identifying a trend or characteristic pattern for the addicted population.

There existed four variables which proved to be statistically different for the two groups. They were as follows:

1. Variable 20. Marital Status of Subject
2. Variable 23. Grow up with true father
3. Variable 24. Educational level of true father
4. Variable 26. Grow up with true mother

A discussion of each of these variables follows:

1. Variable 20. Marital Status of Subject
 Description: code 1 = single
 code 2 = divorced
 code 3 = separated
 code 4 = widowed
 code 5 = common law
 code 6 = married
 Mean Score, addicted group = 3.313
 Mean Score, non-addicted group = 4.875

In order to meaningfully interpret the difference between the groups it is necessary to visually place the groups' means upon the scale of the codes above.

As the scores indicate, the mean for the addicts falls somewhere *between* the separated and the widowed range, while the mean for the non-addicted group falls between the

widowed and common law classifications. It must be remembered that these means are scores upon a continuum and not specifically located within a particular category. One can conclude, however, that on the scale as it is presented, the addicted group tended more to the bottom end of the scale (single, divorce, separated) than did the non-addicted group.

2. Variable 23. Grow up with true father

Description: code 1 = no
 code 2 = yes
 Mean Score, addicted group = 1.469
 Mean Score, non-addicted group = 1.781

Data from the DDC indicates that the addicted group showed a higher frequency of *not growing up with their true father*.

One implication for this finding may lie within the formulation of a therapeutic plan dealing with the role of the significant male model in the developmental stages of the child. Another possible implication would evolve around the analytical framework of the oedipus complex and the resolution of the oedipal conflict through identification.

3. Variable 24. Educational level of true father

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Description:   code 1  =  don't know
               code 2  =  first through sixth grade
               code 3  =  seventh through eighth grade
               code 4  =  nineth through tenth grade
               code 5  =  eleventh through twelfth, no high
                        school graduate
               code 6  =  high school graduate
               code 7  =  one through two years college

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code 8 = three through four years college
 code 9 = any graduate work at all
 Mean Score, Addicted group = 4.500
 Mean Score, Non-addicted group = 5.563

The demographic data composite yields data to support the fact that the heroin addicted group were sons of fathers with a significantly lesser amount of education than were the non-addicted group.

The high frequency of the *lesser educated father* among the heroin addicts may or may not serve as guideposts to aid and formulating a therapeutic approach. This information does serve, however, to supply the therapist with a basic generality or characterization of the addict as a population.

4. Variable 26. Grow up with true mother
 Description: code 1 = no
 code 2 = yes
 Mean Score, addicted group = 1.813
 Mean Score, non-addicted group = 1.969

The DDC yields information which supports the fact that the heroin addicted population more often do not grow up with their true mothers.

Ramifications for therapy here are extensive. The mother model plays a significant role in developmental theory as well as the psychoanalytical approach to psychotherapy.

Summary of Variables from Demographic Data Composite

The DDC yields numerous characteristic and relevant differences between the addicted and non-addicted groups. These differences lend themselves to therapeutic implications as well as enabling the therapist to make generalizations about the addicted population.

Practical Implications, Limitations, and Summary of the Inter-Correlation Matrix

Appendices E and F present the inter-correlational matrices showing the correlational relationships which each variable has with the other variables in that particular group. The main point of concern here is that the correlational relationships between those variables on the DDC which one would expect to correlate highly, did in fact correlate highly. An example of this would be the high positive correlation between item number 28 (Marital Status of true parents) and item number 23 (Did you grow up with your true father?). This correlation is logical and would tend to indicate that the DDC was yielding a "truthful" response. These kind of data in the correlational matrix are an index of high internal consistency.

Recommendations for Further Research

1. Replication of this study should be repeated at the

Ingham County Jail in order to ascertain whether the same findings of non-intellectual and personality variables produced the same relationship to heroin addiction, and the same differences between the two groups on this relationship.

2. Replication of this study should be repeated at other treatment centers (i.e., hospitals, residential treatment centers, etc.) to determine the differences between the incarcerated and non-incarcerated heroin addicts.
3. Some procedural method utilizing the results of this study in a psychotherapeutic technique, should be performed and compared to a psychotherapeutic technique which does not incorporate the results of this study. An analysis of the results of these two therapeutic endeavors should be performed.
4. The need of a longitudinal study is indicated to determine whether the profile which this study yields could, in fact, predict drug use. Perhaps a population of high school students could be sampled and followed for a length of time to determine the relationship of each particular subject's developmental activity with his profile on the indicators and measures in this study.

GENERAL CONCLUSIONS

Restatement of Hypotheses

The research hypothesis under investigation in this study was:

Ho: The heroin addicted persons, homogeneous in the degree of heroin addiction, will not demonstrate significant differences from the heroin addicted persons on the dependent variables of this study.

The alternative hypotheses was:

Ha: The heroin addicted persons, homogeneous in degree of heroin addiction, will demonstrate significant differences from the non-heroin addicted persons on the dependent variables of this study.

This investigation basically sought to compare, measure, and describe certain non-intellectual, sociological, demographic, and psychological factors of heroin addicts and non-heroin addicts.

Restatement of the Questions

The above hypotheses are closely associated with investigating and discussing the following empirical ques-

tions:

1. Do the personality variables and personality traits have a potential relationship to heroin addiction?
2. Does demographic and personal data regarding the individual background, as measured by the instrument constructed for this specific purpose and this specific investigation, have a potential relationship to heroin addiction?

Summary

From the results mentioned above, and the practical implications accompanying them, there appear to be a number of factors and variables which are statistically different between the addicted, incarcerated male at the Ingham County Jail, and the non-addicted, incarcerated male at the Ingham County Jail. An analysis of 30 pairs of scores yielded nine items which differed significantly at the .05 level of confidence. The particular items upon which these two groups differ have been shown to lend themselves meaningfully to the therapeutic process, and further, to facilitate generalizations about the incarcerated population at the Ingham County Jail.

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APPENDICES

APPENDIX A

Glossary

GLOSSARY

Acid	LSD, LSD-25, (lysergic acid diethylamide)
Acidhead	Frequent user of LSD
Bag	Packet of drugs
Ball	Absorption of stimulants and cocaine via genitalia
Bang	Injection of drugs
Barbs	Barbiturates
Bennies	Benzedrine, an amphetamine
Bindle	Packet of narcotics
Blank	Extremely low-grade narcotics
Blast	Strong effect from a drug
Blue angels	Amytal, a barbiturate
Blue velvet	Paregoric (camphorated tincture of opium) and Pyribenzamine (an antihistamine) mixed and injected
Bombita	Amphetamine injection, sometimes taken with heroin
Bread	Money
Bum trip	Bad experience with psychedelics
Bummer	Bad experience with psychedelics
Busted	Arrested
Buttons	The section of the peyote cactus
Cap	Capsule
Chipping	Taking narcotics occasionally
Coasting	Under the influence of drugs
Cokie	Cocaine addict
Cold turkey	Sudden withdrawal of narcotics (from the goose-flesh, which resembles the skin of a cold, plucked turkey)
Coming down	Recovering from a trip
Connection	Drug supplier
Cop	To obtain heroin
Cop out	Quit, take off, confess, defect, inform
Crash	The effects of stopping the use of amphetamines
Crash pad	Place where the user withdraws from amphetamines
Cubehead	Frequent user of LSD
Cut	Dilute drugs by adding milk sugar or another inert substance

Dealer	Drug supplier
Deck	Packet of narcotics
Dexies	Dexedrine, an amphetamine
Dime bag	\$10 package of narcotics
Dirty	Possessing drugs, liable to arrest if searched
Do	Take or inject a drug
Dollies	Dolophine (also known as methadone), a synthetic narcotic
Doper	Person who uses drugs regularly
Downers	Sedatives, alcohol, tranquilizers, and narcotics
Drop	Swallow a drug
Dummy	Purchase which did not contain narcotics
Dynamite	High-grade heroin
Fix	Injection of narcotics
Fire	Inject or inhale a drug
Flash	The initial feeling after injecting
Flip	Become psychotic
Floating	Under the influence of drugs
Freakout	Bad experience with psychedelics; also a chemical high
Fuzz	The police
Gage	Marihuana
Good trip	Happy experience with psychedelics
Goofballs	Sleeping pills
Grass	Marihuana
H	Heroin
Hard narcotic	Opiates, such as heroin and morphine
Hard stuff	Heroin
Hash	Hashish, the resin of Cannabis
Hay	Marihuana
Head	Person dependent on drugs
Hearts	Dexedrine tablets (from the shape)
Heat	The police
High	Under the influence of drugs
Holding	Having drugs in one's possession
Hooked	Addicted
Hophead	Narcotics addict
Horse	Heroin
Hustle	Activities involved in obtaining money to buy heroin
Hustler	Prostitute
Hype	Narcotics addict

Joint	Marihuana cigarette
Jolly beans	Pep pills
Jones	A habit, an addiction
Joy-pop	Inject narcotics irregularly
Junkie	Narcotics addict
Kick the habit	Stop using narcotics (from the withdrawal leg muscle twitches)
Kite	Illegally written and passed notes within a jail or a hospital
Layout	Equipment for injecting drug
Lemonade	Poor heroin
M	Morphine
Mainline	Inject drugs into a vein
Maintaining (The) Man	Keeping at a certain level of drug effect The police
Manicure	Remove the dirt, seeds, and stems from marijuana
Mesc	Mescaline, the alkaloid in peyote
Meth	Methamphetamine
Methhead	Habitual user of methamphetamine
Mikes	Micrograms (Millionths of a gram)
Narc	Narcotics detective
Nickel bag	\$5 packet of drugs
O.D.	Overdose of narcotics
On the nod	Sleepy from narcotics
Panic	Shortage of narcotics on the market
Pillhead	Heavy user of pills, barbiturates or amphetamines or both
Pop	Inject drugs
Pot	Marihuana
Pothead	Heavy marihuana user
Purple hearts	Dexamyl, a combination of Dexedrine and Amytal (from the shape and color)
Pusher	Drug peddler
Quill	A matchbook cover for sniffing Methedrine, cocaine, or heroin
Rainbows	Tuinal (Amytal and Seconal), a barbiturate combination in a blue and red capsule

Red devils	Seconal, a barbiturate
Reefer	Marihuana cigarette
Reentry	Return from a trip
Roach	Marihuana butt
Roach holder	Device for holding the butt of a marihuana cigarette
Run	An amphetamine binge
Satch cotton	Cotton used to strain drugs before injection; may be used again if supplies are gone
Scag	Heroin
Score	Make a purchase of drugs
Shooting gallery	Place where addicts inject
Skin popping	Injecting drugs under the skin
Smack	Heroin
Smoke	Wood alcohol
Snorting	Inhaling drugs
Snow	Cocaine
Speed	Methamphetamine
Speedball	An injection of a stimulant and a depressant, originally heroin and cocaine
Speedfreak	Habitual user of speed
Stash	Supply of drugs in a secure place
Stick	Marihuana cigarette
Stoolie	Informer
Strung out	Addicted
Tracks	Scars along veins after many injections
Tripping out	High on psychedelics
Turned on	Under the influence of drugs
Turps	Elixir of Terpin Hydrate with Codeine, a cough syrup
25	LSD (from its original designation, LSD-25)
Uppers	Stimulants, cocaine, and psychedelics
Weed	Marihuana
Words	Equipment for injecting drugs
Yellow jacket	Nembutal, a barbiturate
Yen sleep	A drowsy, restless state during the withdrawal period

APPENDIX B

Raw Data For Both Addicted And
Non-Addicted Groups On The 16PF And
The Demographic Data Composite

Raw Data For Addicted Group (001)

Subjects

Factor

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	23	77	11	77	40	40	40	4	60	23	96	77	23	89	99	60	77	40	40	40	40	23	40	60	23	77	40	89	40	60	60	60
2	60	11	89	89	77	4	40	11	40	40	4	40	40	40	40	23	40	77	23	40	23	40	60	23	11	23	40	23	23	40	23	11
3	89	11	23	4	11	11	11	1	1	11	60	11	1	11	23	40	77	40	60	4	60	11	23	23	1	1	60	40	4	4	60	4
4	60	23	11	77	89	23	40	1	40	60	40	60	23	60	11	23	40	77	60	60	11	1	40	96	11	60	40	23	89	60	60	77
5	40	11	23	40	89	96	60	4	60	40	89	60	11	40	60	11	60	77	77	40	60	11	11	11	60	77	77	40	96	60	89	40
6	4	11	60	1	11	77	23	23	23	60	60	60	40	11	40	23	89	40	11	11	40	60	40	40	40	23	1	89	60	11	40	40
7	11	11	40	60	40	40	11	1	11	11	89	77	1	60	77	11	77	89	77	11	23	1	40	60	40	77	4	77	60	23	89	77
8	96	89	89	89	40	60	40	99	60	40	77	40	89	96	77	89	96	60	77	89	77	77	40	89	99	77	60	89	89	77	77	77
9	60	40	23	89	96	23	89	23	23	60	60	77	89	40	89	89	40	77	60	60	77	77	40	77	89	89	40	40	96	60	60	89
10	60	40	40	70	23	23	60	40	89	40	23	11	4	23	11	11	40	60	23	77	40	11	40	11	11	4	11	23	40	60	23	89
11	77	60	60	23	23	89	89	89	96	89	40	40	89	40	40	89	60	23	40	60	89	60	23	89	40	40	77	89	4	89	77	77
12	60	96	40	89	77	89	89	99	96	77	23	60	99	96	77	99	23	60	40	77	96	96	96	96	96	77	96	23	77	99	60	96
13	40	60	89	96	99	99	60	23	60	77	99	77	77	60	89	96	77	77	23	77	77	1	40	77	77	23	77	40	89	77	60	77
14	96	77	77	96	11	11	60	96	60	23	1	11	40	23	23	77	4	11	23	96	11	96	60	89	40	23	77	11	4	96	4	23
15	40	77	89	11	23	40	40	4	40	11	77	40	60	40	60	23	60	60	40	23	60	40	4	40	40	23	40	89	23	11	11	23
16	40	96	77	77	96	96	77	99	77	60	60	60	96	89	89	89	11	23	89	77	60	89	40	23	77	89	77	77	89	89	77	96

Raw Data For Non-Addicted Group (002)

Factor	Subjects																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	77	77	11	77	40	40	4	60	23	96	77	77	23	89	99	60	77	40	40	40	23	40	60	23	77	40	89	40	60	60	60	
2	60	11	89	89	77	4	40	11	40	4	4	40	40	40	40	23	40	77	23	40	23	40	60	23	11	23	40	23	23	40	23	11
3	4	11	23	4	11	11	1	1	11	60	11	1	1	11	23	40	77	40	60	4	60	11	23	23	1	1	60	40	4	4	60	4
4	77	23	11	77	89	23	40	1	40	60	40	60	23	60	11	23	40	77	60	60	11	1	40	96	11	60	40	23	89	60	60	77
5	99	11	23	40	89	96	60	4	60	40	89	60	11	40	60	11	60	77	77	40	60	11	11	11	60	77	77	40	96	60	89	40
6	23	11	60	1	11	77	23	23	60	60	60	60	40	11	40	23	89	40	11	11	40	60	40	40	40	23	1	89	60	11	40	40
7	77	11	40	60	40	40	11	1	11	89	77	77	1	60	77	11	77	89	77	11	23	1	40	60	40	77	4	77	60	23	89	77
8	99	89	89	89	40	60	40	99	60	40	77	40	89	96	77	89	96	60	77	89	77	77	40	89	99	77	60	89	89	77	77	77
9	77	40	23	89	96	23	89	23	23	60	60	77	89	40	89	89	40	77	60	60	77	77	40	77	89	89	40	40	96	60	60	89
10	11	40	40	77	23	23	60	40	89	40	23	77	4	23	11	11	40	60	23	77	40	11	40	11	11	4	11	23	40	60	23	89
11	23	60	60	23	23	89	89	89	96	89	40	40	89	40	40	89	60	23	40	60	89	60	23	89	40	40	77	89	4	89	77	77
12	89	96	40	89	77	89	89	99	96	77	23	60	99	96	77	99	23	60	40	77	96	96	96	96	96	77	96	23	77	99	60	96
13	77	60	89	96	99	99	60	23	60	77	99	77	77	60	89	96	77	77	23	77	77	1	40	77	77	23	77	40	89	77	60	77
14	77	77	77	96	11	11	60	96	60	23	1	11	40	23	23	77	4	11	23	96	11	96	60	89	40	23	77	11	4	96	4	23
15	4	77	89	11	23	40	40	4	40	11	77	40	60	40	60	23	60	60	40	23	60	40	4	40	40	23	40	89	23	11	11	23
16	96	96	77	77	96	96	77	99	77	60	60	60	96	89	89	89	11	23	89	77	60	89	40	23	77	89	77	77	89	89	77	96

APPENDIX C

Means, Sums of Squares, Degrees of
Freedom, Mean Squares, F Values, And
Significance Levels For The Results
Of The Statistical Analysis

Heroin Addicted(001) Non-Heroin Addicted(002)

Variable	Factor Number	N	Mean	Standard Deviation	N	Mean	Standard Deviation	F Value	Significance of F
cool vs warm	1	32	53.19	25.25	32	42.01	27.91	2.57	0.114
dull vs bright	2	32	36.50	22.87	32	70.31	24.72	32.26	0.0005*
easily upset vs stable	3	32	22.06	22.96	32	54.13	33.64	19.83	0.0005*
not assertive vs dominant	4	32	45.72	27.49	32	59.91	30.22	3.86	0.054
sober vs happy-go-lucky	5	32	52.47	29.67	32	62.19	34.37	1.47	0.231
expedient vs conscientious	6	32	36.91	24.16	32	32.41	29.03	0.45	0.503
shy vs venturesome	7	32	45.06	31.32	32	51.63	35.17	0.62	0.434
tough minded vs tender minded	8	32	75.19	19.39	32	71.78	21.49	0.44	0.508
trusting vs suspicious	9	32	64.31	24.32	32	51.63	30.89	3.33	0.073
practical vs imaginative	10	32	34.03	24.72	32	71.65	25.86	35.38	0.0005*
forthright vs shrewd	11	32	59.88	27.45	32	43.78	29.03	5.19	0.026*
self assured vs apprehensive	12	32	78.22	24.38	32	52.78	27.27	15.47	0.0005*
conservative vs experimenting	13	32	68.99	24.92	32	67.38	27.13	0.06	0.807
group oriented vs self sufficient	14	32	44.72	34.83	32	59.81	31.19	3.33	0.073
undisciplined vs self disciplined	15	32	38.31	24.39	32	36.03	26.89	0.13	0.723
relaxed vs tense	16	32	75.53	23.03	32	61.75	33.32	3.70	0.059

*Significant beyond the .05
level of confidence

Heroin Addicted(001) Non-Heroin Addicted(002)

Variable	Variable Number	N	Mean	Standard Deviation	N	Mean	Standard Deviation	F Value	Significance of F
Age of Subject	17	32	23.09	6.35	32	25.34	4.86	2.53	0.117
Race of Subject	18	32	1.80	0.31	32	1.81	0.46	6.41	0.140
Sex of Subject	19	32	2.00	0.00	32	2.00	0.00	0.00	1.000
Marital status of Subject	20	32	3.31	2.39	32	4.88	2.01	8.01	0.006*
Number of children of Subject	21	32	1.89	1.15	32	1.80	0.94	0.87	0.353
Subject's true father, alive or dead	22	32	1.78	0.42	32	1.88	0.34	0.97	0.328
Did Subject grow up with true father	23	32	1.47	0.51	32	1.79	0.42	7.21	0.009*
Educational level of true father	24	32	4.50	2.20	32	5.56	1.65	4.79	0.032*
Subject's true mother, alive or dead	25	32	1.81	0.39	32	1.88	0.34	0.46	0.499
Did Subject grow up with True mother	26	32	1.81	0.39	32	1.97	0.18	4.14	0.046*
Educational level of true mother	27	32	5.25	2.16	32	5.63	1.07	0.78	0.381
Subject's true parents' marital status	28	32	4.84	1.71	32	5.00	1.52	0.15	0.701
History of alcoholism in true parents	29	32	3.28	0.96	32	3.66	0.65	3.35	0.072
Subject's educational level	30	32	4.94	1.19	32	5.19	1.28	0.65	0.422

*Significant beyond the .05
level of confidence

APPENDIX D

Demographic Data Composite

DEMOGRAPHIC DATA COMPOSITE

DIRECTIONS

On this questionnaire there are some very important but personal questions. As you answer these now, with your counselor, please keep in mind that your answers are confidential but that your answers MUST BE HONEST in order for the Drug Abuse Treatment Program to serve the inmate population fairly. Your answers will be checked out , and if you don't know an answer, please say so.

1. Your full, legal name, with any aliases
2. Your true age at your last birthday
3. Your race
4. Your sex
5. Your present marital status
6. The number of children you have (by present marriage, past marriages, or without being married)
7. Is your TRUE FATHER alive or dead?
8. Did you GROW UP with your TRUE FATHER?
9. What is (was) the EDUCATIONAL LEVEL that your Father reached?
10. Is your TRUE MOTHER alive or dead?
11. Did you GROW UP with your TRUE MOTHER?
12. What is (was) the EDUCATIONAL LEVEL that your Mother reached?
13. What is the MARITAL STATUS of your TRUE PARENTS?
14. Is there (was there) any history of ALCOHOLISM or ALCOHOL ABUSE in either of your parents?
15. What is your present EDUCATIONAL LEVEL?

APPENDIX E

Intercorrelational Matrix For Addicted Persons In The Study

1	34	LAUNCHER STATPUT	GROUP 1	INDUCTS	PRODUCT	MUPENT	CORRELATIONS							
		CORRELATION												
		NUMBER												
		SIGNIFICANCE												
VAR 2	-0.112	32												
	0.528	32												
VAR 3	0.191	-0.106	32											
	0.279	0.551	32											
VAR 4	0.245	0.261	-0.111											
	0.152	0.125	0.132											
VAR 5	0.244	-0.25	0.224											
	0.154	0.06	0.121											
VAR 6	0.013	-0.002	0.551	-0.222	0.044									
	0.432	0.24	0.152	0.151	0.004									
VAR 7	0.074	0.11	0.121	0.421	0.03	0.245								
	0.003	0.074	0.03	0.003	0.003	0.000								
VAR 8	0.074	-0.002	-0.141	-0.127	-0.141	-0.143	0.040							
	0.035	0.271	0.003	0.476	0.279	0.461	0.061							
VAR 9	0.002	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 10	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 11	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 12	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 13	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 14	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 15	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 16	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 17	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 18	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 19	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 20	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 21	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 22	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 23	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 24	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 25	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 26	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 27	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 28	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 29	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 30	0.074	0.11	0.003	0.165	-0.104	0.187	0.001							
	0.037	0.14	0.003	0.152	0.154	0.269	0.004							
VAR 1	VAR 2	VAR 3	VAR 4	VAR 5	VAR 6	VAR 7	VAR 8	VAR 9	VAR 10	VAR 11	VAR 12	VAR 13	VAR 14	VAR 15

APPENDIX F

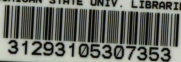
Intercorrelational Matrix For Non-Addicted Persons In The Study

GALLAGHER STATISTIC GROUP 2=NON-ADDICTS
 CORRELATION NUMBER
 SIGNIFICANCE

PRODUCT MOMENT CORRELATIONS

0.201
 32
 0.255
 32
 0.041 1.233
 32 32
 0.411 0.184
 32 32
 0.000 0.000 0.000
 32 32 32
 1.000 1.000 1.000
 -0.017 0.411 0.062 0.000
 32 32 32 32
 0.770 0.14 0.726 1.000
 -0.075 0.544 0.122 0.000 0.280
 32 32 32 32 32
 0.573 0.00 0.737 1.000 0.109
 0.131 0.000 0.124 0.000 -0.215 -0.573
 32 32 32 32 32 32
 0.44 0.00 0.752 1.000 0.72 0.00
 -0.004 -0.027 0.124 0.000 -0.110 -0.214 0.029
 32 32 32 32 32 32 32
 0.730 0.112 0.000 1.000 0.537 0.224 0.073
 0.245 0.154 0.015 0.000 0.412 0.076 -0.714 -0.005
 32 32 32 32 32 32 32 32
 0.15 0.25 0.453 1.000 0.612 0.732 0.214 0.987
 0.052 -0.11 0.075 0.000 0.524 0.205 0.143 0.044 -0.219
 32 32 32 32 32 32 32 32 32
 0.771 0.34 0.775 1.000 0.693 0.244 0.420 0.073 0.214
 -0.144 0.162 0.075 0.000 -1.102 0.134 -0.065 0.534 0.067 0.475
 32 32 32 32 32 32 32 32 32 32
 0.57 0.33 0.737 1.000 0.506 0.434 0.705 0.000 0.720 0.005
 -0.004 0.245 -0.027 0.000 0.157 0.134 -0.135 0.044 0.349 0.224 0.277
 32 32 32 32 32 32 32 32 32 32 32
 0.746 0.267 0.775 1.000 0.374 0.433 0.448 0.774 0.000 0.707 0.113
 1.122 -0.18 0.044 0.000 -0.168 -0.057 0.124 0.555 -0.134 0.124 0.120 0.040
 32 32 32 32 32 32 32 32 32 32 32 32
 0.422 0.77 0.735 1.000 0.141 0.748 0.474 0.000 0.385 0.478 0.500 0.024
 -0.135 0.11 -0.044 0.000 0.310 0.140 -0.202 0.187 0.306 0.097 0.183 0.548 0.182
 32 32 32 32 32 32 32 32 32 32 32 32 32
 0.411 0.464 0.777 1.000 0.074 0.751 0.252 0.288 0.078 0.005 0.246 0.001 0.760
 -0.121 0.075 0.762 0.000 -0.153 0.334 0.094 -0.221 -0.052 0.704 0.312 0.194 -0.264 -0.034
 32 32 32 32 32 32 32 32 32 32 32 32 32 32
 0.422 0.44 0.75 1.000 0.13 0.534 0.254 0.25 0.772 0.242 0.073 0.271 0.191 0.834
 VAN 15 VAN 17 VAN 18 VAN 19 VAN 20 VAN 21 VAN 22 VAN 23 VAN 24 VAN 25 VAN 26 VAN 27 VAN 28 VAN 29

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