A LONGITUDINAL STUDY OF PRISON RECIDIVISM WITH THE MINNESOTA MULTIPHASIC PERSONALITY INVENTORY AND THE PURPOSE IN LIFE TEST

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in partial fulfillment of
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May, 1972

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PREFACE

This study is an attempt to discover relationships between the Minnesota Multiphasic Personality Inventory (MMPI) response patterns and individual elevated scales of offenders and their scores on the Purpose in Life (PIL) and their post-institutional successes and failures in adjusting to society. It is an attempt to identify who the criminal recidivist is and to predict when he will recidivate.

The two areas of concentration are, the elements or traits of personality significant for the explanation of criminal recidivist behavior and attitudes, especially the existential attitude of purpose in life.

The author wishes to thank and express his appreciation to his major adviser, Dr. Donald Allen, for his patience, encouragement, and assistance throughout this study. Appreciation is also expressed to the other committee members, Dr. Gene Acuff, Dr. Robert Alciatore and Dr. Ivan Chapman, for their invaluable assistance in the preparation of the final manuscript.

Also appreciation goes to the Texas Department of Corrections and the Manpower Development Skill Centers in Tulsa and Oklahoma City, who provided the men used for this study.

Finally, a note of thanks to my wife Gene Ruth who spent time typing, correcting, and being patient with an otherwise irritable husband.

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CHAPTER I

REVIEW OF THE LITERATURE

Introduction

Traditionally recidivism has been the yard stick for measuring the effectiveness of incarceration as a method of resocialization and as a deterrent to subsequent criminal behavior. Recidivism is defined as a falling back or chronic relapse into crime. Rubin (1958) has described recidivism as "one of the crucial phenomena in criminal behavior" and as the "hub of the whole treatment machinery." Conrad (1965), in discussing the importance and the deficiencies of this measuring stick, stated that the use of this criterion, together with its accompanying refinements, represents the best single measure of correctional effectiveness.

The importance of recidivism to the correctional apparatus in terms of treatment success, protection of society, and financial expenditures has generated considerable interest in its prediction. Mannheim (1965) pointed out that although prediction of recidivism and resocialization has always been inherent in the functions of the correctional apparatus, the introduction of scientific approaches to prediction is a recent historical development.

All those concerned with the administration of criminal justice, judges and magistrates, practical and theoretical penologists and panel reformers, have been trying to predict throughout the ages consciously or unconsciously, but it is only in the course of the present century

that their efforts have been subjected to systematic and scientific inquiry (Mannheim, 1965, p. 141).

Mannheim (1965) observed that the need for prediction is based on an essentially non-retributive philosophy and practice of penology.

The first pioneer work on systematic, scientific inquiry concerning recidivism began with the work of Professor S. B. Warner who in 1923 published his study of Massachusetts inmates. Bruce, Burgess, and Harno (1928) published their well-known study of 3,000 Illinois inmates. Correlating demographic data with either success or failure on parole, they derived twenty-one factors as predictively relevant. Equal weight was assigned to each factor. The practical value of the study was unique in that the experience tables were actually used in the decision making process of the Illinois Parole Board.

In 1930 the Gluecks published 500 Criminal Careers. They subsequently developed experience tables for the prediction of delinquency (Glueck and Glueck, 1950). Their methods are among the most complex available. Their use of tests to measure personality correlates of delinquent behavior is indicative of a recent trend which is basic and important to the present study.

Essentially demographic data were utilized by Mannheim and Wilkins (1955) in the construction of their prediction tables, now regarded as a landmark in this field.

The value and accuracy of predictive methods remainds controversial, but the trend toward their extended use is clear. Improvements in methodology appear to be yielding results that remain increasingly stable through cross validation. Cross validity results in excess of

ninety percent have been reported for the Mannheim-Wilkins tables (Mannheim, 1965).

Recidivism as a Function of Personality

Schuessler and Cressey (1950) published a survey of American studies which were designed to reveal differences between offenders and non-offenders. After reviewing a total of 113 studies, they concluded that in approximately sixty percent of them no appreciable differences were found; in the other forty percent non-offenders were more clearly identified. The authors observed that methodological problems, such as inadequate control groups and deficiencies of the various tests contributed to the relatively low level of successful identifications. In view of these and other considerations, they reached the general conclusion that significant and appreciable connections between criminal behavior and personality factors had not been demonstrated.

Clinard (1957) criticized this conclusion on two grounds: (1) over-simplification of the basic problem due to failure to differentiate among criminal activities; (2) the survey used only few studies that utilized the Minnesota Multiphasic Personality Inventory (MMPI). Clinard's criticism of Schuessler and Cressey's conclusions would cast a shadow of weakness in their studies, thus still leaving open the possiblities that a connection exists between personality and criminal behavior.

Examples of research based on assumed relationships between personality and criminal behavior other than the MMPI are cited here. They illustrate problems that have been approached through psychological

testing, methods employed, and results achieved.

The first example and perhaps the best known is the Gluecks' Unraveling Juvenile Delinquency (Glueck and Glueck, 1950), a comparison of 500 delinquents with 500 non-delinquents in terms of home factors, social factors, and the Rorschach. Schachtel interpreted the Rorschach results and concluded that the delinquent subjects exceeded the non-delinquent subjects in assertiveness, resentment toward others, hostility, defiance, ambivalence toward authority, suspiciousness, impulsivity, and extroversion. They were also more destructive; they suffered less from fear of failure and defeat; they were less cooperative, less conventional, and less self-controlled.

A second example is the Sullivan, Grant, and Grant (1957) proposal, a theory designating seven levels of experiential organizations as a frame work for predicting recidivism. Based on the general assumption that delinquent behavior is a function of arrested development at early stages, the propensity toward organizing experiences in infantile ways provides some index for the types of behavior patterns that will be repeated. Their rationale is stated as follows:

> . . . we shall focus to a large extent upon the development, perception, and integration of experience that characterize the delinquent personality. It is our belief that an understanding of delinquency can best be achieved from a study of interpersonal relationships and the interactions among individuals, groups, and situation. By focusing on the complex of social interactions rather than upon single elements, the experimenter deals with units of analysis adequate to his predictive tasks. Further, as the adjustive changes or dynamics involved in these interactions become known, the predictions of behavior and the facilitation of psychological change in presently delinquent persons and groups will be increasingly possible (Sullivan, Grant, and Grant, 1957, p. 373).

Seven levels of experiential organization are provided for the child,

adult, and delinquent. The seven levels are: (1) Integration of separateness, (2) Integration of manself Differences, (3) Integration of Rules, (4) Integration of Conflict and Response, (5) Integration of Continuity, (6) Integration of Self-Consistency, and (7) Integration of Relativity, Movement, and Change. Delinquency is seen as a potential problem at any of the first four levels. It is rare but delinquency may develop at levels five and six. If they occur, they are regarded as "situational" rather than developmental.

This theory has been demonstrated by a number of studies which have tested its predictive power. Grant and Grant (1959) did a study at Camp Elliott with the use of naval prisoners and group supervisors as subjects. They classified both groups in terms of maturity level, and various combinations of treatment groups were created on the basis of these classifications. It was predicted that a match of high maturity prisoners with high maturity supervisors would yield the most successful results when the prisoners returned to active duty. They found their prediction to be correct. It was also found that high maturity prisoners were less successful when placed in companies with low maturity supervisors. This result indicates that recidivism and resocialization can be predicted from maturity level ratings.

Recidivism as Measured and Predicted by the MMPI

A thorough review of the studies of criminality have been provided (1960) by Dahlstrom and Welsh through the use of the MMPI. A considerable body of literature has developed in which two major problems have been explored: the discrimination of prisoners from non-prison populations and the identification of criminal types in contrast with other

inmates. Efforts have been made to find relationships between specific MMPI scales, MMPI configurations, and types of criminal activity.

Panton's summarizations of results up to this time are adequate. He used the regular clinical scales and studied 1,313 North Carolina inmates. He tried to fit the profiles to six crime classifications. He concluded that there is a

> . . . distinct prison population profile which may be employed to give added knowledge of prison population variations in personality profiling as compared to the profile of people in general. However, there appears to be no marked difference between the profiles of six major crime classification groups. Even though several of the diagnostic scales discriminate at the .01 level of confidence between various crime classification group combinations, none of these discriminations are of such frequency or magnitude to warrant the use of separate crime classification profiles (Panton, 1958a, pp. 307, 308).

Soon after the MMPI was constructed, efforts to identify individuals who would return to and persist in criminal behavior were constructed. Clark (1948) began the search for MMPI identification and prediction of recidivism. The development of the Recidivism scale was the work of Clark. He developed this scale by comparing groups of military offenders who were guilty of the offense of being AWOL.

Freeman and Mason (1952) used Clark's Recidivism scale on Washington State Penitentiary inmates as a validation effort. They found the scale to be ineffective, no significant difference was achieved between the two groups they tested.

Panton (1962b) after reviewing the study of Freeman and Mason felt that their study was hampered by lack of adequate follow-up information on the first offender sample. Trying to profit from past mistakes of others, Panton developed a scale to identify recidivists by selecting 50 first offenders aged 40 or older and comparing their MMPI responses

with those of 50 men who had a minimum of 3 convictions with sentences served for those convictions. The means of these two groups differed significantly on Clark's Recidivism scale, but the scale failed to differentiate the two groups. By experimenting with the raw data, Panton discovered that a combination of the Psychopathic Deviate and Prison Adjustment scale items, after elimination of overlapping items which were scorable True on one scale and False on the other, yielded a new scale which with a cutting point of 32 (raw score) successfully divided the 2 groups beyond the .01 level of confidence. This was the point of optimum dichotomy. The scale became known as the Habitual Criminal scale.

A cross validation study was conducted in which 685 subjects were distributed unevenly among 6 classifications. They were classified as: (1) normals accepted for prison employment, ages 21-44; (2) normals rejected for prison employment, ages 21-44; (3) first offenders, 40 or older and 17-36 (parolees); (4) recidivists with 3 or more prior sentences; (5) recidivists with 2 prior sentences; (6) and recidivists with 1 prior sentence. The 3 recidivists groups were subdivided further according to age with groups of 40 or older, 30-39, and 20-29.

The mean of the normal and first offender groups were all statistically different from the means of the recidivist groups, but predictive accuracy declined considerably with the reduction in the number of prior sentences served. The first offenders, ages 20-29, with 1 prior sentence were highly identifiable by the use of the Habitual Criminal scale. It identified 62.9 percent. Panton concludes:

> . . . the scale was unsuccessful in the identification of recidivists who had served only one or two prior sentences. It is felt that the large percentage of 20-29 year olds

> identified reflected the probability that those individuals would in all likelihood be returning to prison on future additional sentences; whereas the elder groups were less likely to continue their criminal activities. The author feels that the HC scale should be used with caution until it can be submitted to further validation, probably with additional first offender groups (Panton, 1962b, p. 136).

The evidence would suggest that first offenders are a difficult group to study with the MMPI in relation to predicting further criminal activity and eventual incarceration for that activity. Dahlstrom and Welsh have discussed the need for additional research in this area as follows:

> Unfortunately no study is available in which large numbers of first offenders have been examined and follows in their criminal or noncriminal histories subsequent to their imprisonment. This sort of study is needed to determine the value of these personality evaluations in understanding and predicting criminal recidivism. A related problem would be the prediction of subsequent criminal activity after any one imprisonment, whether the prisoner has a long history of convictions or not (Dahlstrom and Welsh, 1960, p. 331).

In another study conducted by Lytle (1963) on probation candidates in which he used the MMPI to predict successful and unsuccessful adult probationers he also recommends:

> This study suggests that statistical procedures, sentencing procedures, crime definitions and revocation procedures all serve to contaminate crime defining criteria. It is further offered that test instruments need to be restandardized on specific sub-populations. (Lytle, 1963, p. 220)

Purpose in Life as an Indicator of Recidivism

For the past few years psychologists and sociologists have been examining the role of purpose and life meaning as a variable in personal and social adjustment. Victor Frankl was the first person to develop the concept of "meaning" in a systematic manner. He postulates an inborn drive which he calls "the will to meaning." This represents a

striving to find purpose in one's own existence, to find a cause or sense of mission that is uniquely one's own and that gives direction to life and makes it understandable. Thus the will to meaning has ontological and cosmological implications--the person strives to see a plan or purpose in all of existence and a meaningful way in which he fits into this scheme. Some studies in the past have used the Crumbaugh's Purpose in Life Test (PIL) to measure this variable. A study by Crumbaugh and Maholick (1964) used the PIL and the Allport-Vernon-Lindey Scale of values and the MMPI to discriminate between patients and non-patients. Of all the scales, only the K (validity) and D (Depression) scores showed any substantial relationship to the PIL (respectively .39 and -.30 Pearson Product Moment, N = 45). The K scale is a measure of defensiveness, this would indicate that those who have a high degree of "purpose in life" tend to have adequate defenses; they are also less depressed than others.

One question that has been raised is whether the PIL is an indirect measure of Depression. The correlation of the MMPI D scale with the PIL suggests that the test is not primarily this, and it is probable that the cause of both depression and lack of life meaning and purpose are complex and variable. It is likely that lack of life meaning can be both a cause and an effect of depression, and that both lack of purpose and depression can result from other causes.

A cross-validation of Purpose-In-Life Test Based on Frankl's Concept by Crumbaugh (1968) was done. The purpose was to gather further quantitative evidence concerning the validity of Frankl's basic thesis.

> Our specific aims were: (a) to cross-validate the previous PIL findings; (b) to apply the test to further categories of Sb; (c) to explore further the relationship

> of Frankl's noogenic neurosis to depression and or other traditional syndromes; (d) to learn whether the variable measured by the PIL can be identified as anomie; and (e) to examine evidence concerning the influence of social desirability on PIL scores. (Crumbaugh, 1968, p. 74)

The correlations between the PIL and the MMPI scales revealed only two relationships which were significant at the one percent level of confidence: Psychasthenia, -.44, and Depression -.44. Thus only Depression has maintained a consistent relationship.

Present Status of Prediction of Recidivism

The present status of prediction in recidivism is a turning away from the prediction of both between and within group differences of the inmate and non-inmate groups and their statistical differences to prediction of persons identified from statistical analysis as those persons who will probably commit new crimes. The last study done of any great significance which deals with the prediction of adult criminals who will recidivate is the Bruce, Burgess, and Harno study done in 1928 on 3,000 Illinois inmates. Since that time small studies have been done using samples of 50 or less and they have been concerned with parole violation predictions or first offender prediction.

Some studies in the past have also dealt with prediction by trying to develop a scale from test instruments which would be predictively relevant for recidivist inmates. These studies have met with little success and high levels of predictive accuracy are rare or non-existent.

Because little work has been done recently on a very large scale in predicting recidivism of adult offenders in general who will recidivate, more study in this area is necessary.

CHAPTER II

STATEMENT OF THE PROBLEM

This study proposes to discover relationships between the MMPI response patterns and elevated scales of offenders and their scores on the PIL and their post-institutional successes and failures in adjusting to society. The proposal and the design are based on the general premise that post-institutional adjustment is partially a function of personality and character structure. The theoretical base for the problem to be researched is rooted in the nature of personality development and its relationship to criminal behavior. In a sense we all become human persons in the family and in other primary groups which socialize and culturalize us, and determine status. On the other hand, individual "constitutional" differences even if social products themselves, also affect the personality and the role the individual will play in a given group or in a given culture. With a given physical and psychological make-up a man will succeed in one culture but fail in another. Yet any particular group awards or denies status differently to different types of personality. The social milieu a child is born into is largely determined before his arrival by the nature of the general culture. The nature of the interpersonal relations in the family and other groups he belongs to or aspires to belong also affect his personality development. Some (Sapier, 1938, pp. 85-87) have distinguished rather sharply between traits which are psychogenetic and those which are

cultural. The former are held to be relatively permanent characteristics of the personality and to have their origin in familial interpersonal relations. The view of this researcher is that such sharp distinctions cannot be made, since even traits called psychogenetic, such as egocentricity, reflect in part the general culture as mediated by the family and other groups and though relatively permanent may and do change as a result of later social experiences. Clearly, personality affects behavior, but in doing so it is the medium through which present and past social situations operate.

Elements in personality especially significant for the explanation of crime include interests, beliefs, opinions, habits, values, attitudes, and traits. Various types of tests have been developed to measure these areas. One such test to measure traits is the MMPI, another to measure attitude is the Purpose in Life Test. The MMPI has the advantage of showing how one personality trait is related to others. Thus it is felt that the MMPI is a good test for assessing the influence of the social milieu on the development of the personality. If the social milieu was deviant in nature, personalities which developed out of this milieu should show differences from the normal population. The PIL will measure the existential attitude of the personality which is a reflection of the individual and his relationship to the general social ethos. Both his personality and his existential attitude are products of the groups to which he belongs. If this theory is correct, a type of personality (criminal personality) as defined by a general culture should be identifiable.

Within any one prison there are a multitude of different persons who have been adjudicated by the court as felonious lawbreakers.

Many of these lawbreakers end up in prison for a variety of reasons. A goodly number of those who are in prison, once released will not return. It is the convict who will return, the recidivist, that this researcher would like to identify. He is the criminal type. He has variously been labeled in the past as, incorrigible, professional, born criminal, psychopath, and sociopath to name only a few. If this type does exist, and if he is the product of a specific type or types of social milieu, then the MMPI and the PIL ought to discriminate him from the general prison population. Once discriminated, he should be predicted to return to prison after he has been released.

Previous Studies and the Relationships Between Personality and Criminal Behavior

Previous studies have established the percentage of inmates who will return to prison after one year, three years, and five years (Glueck, 1950). The problem to be examined in this study is who will recidivate and who will not, at what rate they will recidivate and whether the MMPI and the PIL are good predictive instruments to determine who will and at what rate.

The existence of reliable, consistently recurring relationships between personality and criminal behavior has been hypothesized by numerous authors such as Healy (1927), Klein (1934), Alexander and Healy (1935), Horney (1937), Grygier (1954), Caldwell (1950), and Black (1967). The extent to which this concept has achieved scientific status is a function of the special properties of psychological testing.

Wootton in discussing conceptual changes in criminology, observed that the concept of the "criminal mind" or "criminal personality" has

been especially vulnerable in the wake of scientific advances in knowledge.

> It is also clear, that, as observations becomes more precise, generalizations which previously looked promising have a way of collapsing. Nowhere has this been more apparent than in the study of the "criminal personality" (Wootton, 1959, p. 301).

Similar caution is appropriate with reference to recidivists. Nonetheless, on the basis of initial impressions they would appear to encompass more homogeneity than any other grouping within the total inmate population. Panton (1962) has demonstrated such homogeneity empirically among advanced adult offenders with the Habitual Criminal Scale. Experience and observation have proven that a reformatory includes one group of offenders who are in a process of criminal career development and another group who will return neither to criminal activity nor to prison. We are at a cross roads between recidivism and resocialization. This problem is sufficiently complex and claims for high levels of predictive accuracy are rare.

Hathaway and Monachesi (1963) did a study on delinquent adolescents. They discuss the association of delinquency with elevations on combinations of scales in the MMPI, the Pd, Pa, Sc, and Ma, scales in particular (specified in Table I). Commenting on their earlier identification of scales, elevations on which appeared to inhibit the occurrence of delinquency, the authors suggested that the presence of the Pd scale as one of the two high points appeared to cancel out the inhibitory effects of other scales. The work of these authors and their co-workers (e.g. Wirt & Briggs, 1959) have contributed a great deal towards the development of an objective understanding of the personality of delinquents. In their 1963 study Hathaway and Monachesi classified

TABLE I

NAMES AND ABBREVIATIONS FOR THIRTEEN MMPI SCALES SELECTED FOR DATA ANALYSIS

Name	Abbreviation
Lie	L
Validity	F
Correction	K
Hypochondriasis	Hs
Depression	D
Conversion Hysteria	Hy
Psychopathic Deviate	Pd
Masculinity-Feminity	Mf
Paranoia	Pa
Psychasthenia	Pt
Schizophrenia	Sc
Hypomania	Ma
Social Introversion	Si

136 subjects as multiple offenders (or recidivists) but did not breakdown their data to permit an analysis of MMPI results associated with this sub-group.

Wirt (1967) reported significantly higher scores for recidivists on the F, Pd, and Ma scales, while they also scored significantly lower than parole successes on the Hs, D, Hy, and Si scales. In general Wirt concluded that the recidivists tended to be "brighter," more sociable, and more psychopathic, while the non-recidivists tended to show more neurotic tendencies.

Gough, et al. (1965), in two separate samples of 444 and 295 training school parolees studies three years after their original release, found the Ma scale to be significantly higher for the recidivists (p. .05).

A number of approaches have been developed for analysing MMPI data, but not all of these have been fully utilized in research on recidivism.

It is possible for groups to be compared in terms of the differences between the mean on each of the three validity and ten clinical scales. From previous studies recidivists would be expected to score higher on the Pd and Ma scales and possibly on the F, Pa, and Sc scales. They also would be expected to score lower on the Hs, D, Hy, and Si scales. These differences, are likely to be small and not detectable in a study with limited sample size.

From the literature it could be concluded that a limited amount of research has been conducted in the prediction of recidivism. Dahlstrom and Welsh (1960) feel that the reason for this is the MMPI is a relatively new tool in correctional research as is the presence of psychological and sociological services. The present proposal is an outgrowth of

the developing trend toward more correctional research which utilizes the objective properties of psychological testing.

That considerable success has been achieved in predicting recidivism with demographic data is sufficient evidence that more than character is involved in the phenomenon (Mannheim and Wilkins, 1955). At the same time, it is significant that the Gluecks achieved the highest level of success by combining home and social information with psychological testing (Glueck and Glueck, 1950).

Studies of recidivists have frequently indicated that a number of social typologies may be required to describe important differences among recidivists (Mannheim, 1965; Conrad, 1965). However a criminal type may come from a variety of social milieu which have common characteristics but different structures (Cloward and Ohlin, 1960).

Numerous objections are voiced concerning the use of the oversimplified criterion of actual reincarceration as a gauge and measurement of the complex process of resocialization (Conrad, 1965; Mannheim, 1965). Probation and Parole services have brought about many changes in this practice, and the concomitant improvements in correctional research appear to have been substantial.

The Subjects and Their Selection

The information for this study was drawn for the inmate sample from the Texas Department of Corrections pre-release center, the FBI reports, and a complete file kept on each inmate provided by the prison. The control sample was taken from the Vocational Technical Education Manpower Development Centers in Tulsa and Oklahoma City.

While discussing the problem of selection and matching of subjects,

Grygier observed: "The most obvious and usual basis, the best criterion for the selection of a sample, is the degree to which it may be considered representative:" (Grygier, 1954, p. 29) He then concluded that he was compelled to be satisfied with less than the stated ideal.

On the basis of their extensive experience in subject matching for the construction of prediction tables, the Gluecks have provided a brief, concise, statement outlining the rationale for the matching process:

> Why did we match the delinquents with the non-delinquents in respect to age, general intelligence, ethnic derivation, and residence in under-privileged urban neighborhoods?
>
> . . . First, since the ultimate comparison should cover subtle processes of personality and environment, the more general or cruder factors should be controlled in the matching; second, those traits which affect a whole range of factors ought to be held constant; third those general characteristics which have already been explored sufficiently by other investigators and about which there is such agreement ought to be equalized in the two groups (Glueck and Glueck, 1952, pp. 12-13).

The population from which the subjects for this study were drawn may be described from three vantage points which are similar but nevertheless variations of potential significance. In the most general sense the inmates for this study were typical offenders. At this level, they share similar characteristics with a large group of people, namely; persons in vocational technical manpower training centers. These are people who are part of the hard-core unemployable. The population was specifically limited to those inmates in the prison who had been placed in the pre-release program and who had served all but two weeks of their sentences. Because persons who are in the Manpower Development Training, i.e., hard-core unemployables, share many of the same characteristics of the prison group, they are felt to be a good match for the

inmate population group. It should be noted that similar characteristics include: (1) large number of high school dropouts; (2) below average I.Q.; (3) same age range; (4) same racial composition; (5) same sex; (6) general levels of school completed; (7) similar type of socio-economic background.

Because of a previous study (Lytle, 1963) special emphasis was placed on matching the prison sample with a sub-population within the general population. The control sample was similar in many ways to the prison sample except that the subjects in the control sample had never been in prison or confined to a mental hospital and they all had a minimum of two weeks Vocational Technical Manpower Development Training. The control sample was different in education level and achievement. They had a slightly higher educational achievement and more years completed in high school.

Goals of the Study

One goal of this study was to create hypotheses that were testable and relevant to recidivism. The design facilitated the variation of personality factors while numerous other variables were held constant or at low levels of fluctuation. Sturup (1964) has provided a description of the process through which recidivists develop. Discussing the problem within a wide perspective, he highlights the complexity of the process. He ascribes considerable importance to personality factors; however, in addition to viewing the family and peer groups as relevant, he sees every aspect of official handling such as police and court relations, community attitudes, and newspaper reports as also relevant and inextricably involved in the production of the final result. He states

that "a mere survey of the personality patterns of all first offenders would be totally inadequate for this purpose" (Sturup, 1964, p. 2).

Such magnitude of complexity and subtlety of interrelationships among contributing factors makes the prospects of measuring all factors, disparately or simultaneously, appear very difficult and remote. Some relationship must exist between the complexity of recidivism among offenders and the difficult path that single MMPI scales have traveled in efforts to isolate it.

A number of explanations can be offered to account for this failure of single scales to reach and maintain statistical significance among civilian populations. A relationship between recidivism and an existing scale or a scale as yet undeveloped may exist but although it remains undiscovered. Closely related to this is the fact that the MMPI is constructed so that the interrelationships among scales reflect varying degrees and aspects of personality. Finally relationships between the MMPI patterns and certain demographic data are the most logical combinations for achieving a complete picture. The work of Johnston (1955) represents a preliminary effort in this direction with specific reference to the MMPI.

Another factor which has been overlooked is the role purpose in life plays as a factor in determining recidivism. Some work has been done in the area with mental hospital patients and elderly people (Crumbaugh, 1964) (Acuff, 1966) and the role purpose in life plays in adjustment and recovery. How purpose in life affects post-institutional adjustment and whether it is a factor affecting the recidivist has not been researched.

Questions of interest for this study will deal with the areas of

meaning or purpose as well as with questions concerning test differences and whether these differences can predict those inmates who will recidivate and at what rate.

Questions That Were Asked

1. Is there significant differences between the inmate population personality and the control group?

2. Is there significant differences between the inmate populations "purpose in life" and the control group?

3. Did purpose in life play a major role in the determinate of recidivism?

4. Did those offenders with less purpose in life and different characteristics of personality recidivate faster than those who have more "purpose in life" and similar characteristics?

5. Did the mean scale scores for the recidivists show higher scores on the F, Pd, Pa, Sc, and Ma scales and lower scores on the Hs, D, Hy, and Si scales?

6. Is there a constellation of characteristics which is identifiable with recidivism?

The specific hypotheses associated with the questions are:

1. There is no significant differences between the mean of the control group and the mean of the inmate group on the overall MMPI scale.

2. The mean of the control group is less than the mean of the inmate group on the MMPI Pd scale for determining recidivism.

3. The mean of the control group is less than the mean of the inmate group on the MMPI Ma scale for determining recidivism.

4. The mean of the control group is less than the mean of the inmate group on the MMPI F scale for determining recidivism.

5. The mean of the control group is less than the mean of the inmate group on the MMPI Hs scale for determining recidivism.

6. The mean of the control group is less than the mean of the inmate group on the MMPI D scale for determining recidivism.

7. The mean of the control group is less than the mean of the inmate group on the MMPI Hy scale for determining recidivism.

8. The mean of the control group is less than the mean of the inmate group on the MMPI Sc scale for determining recidivism.

9. The mean of the control group is less than the mean of the inmate group on the MMPI Si scale for determining recidivism.

10. The mean of the control group is less than the mean of the inmate group on the MMPI Pt scale for determining recidivism.

11. The mean of the control group is less than the mean of the inmate group on the MMPI Ma scale for determining recidivism.

12. The mean of the control group is less than the mean of the inmate group on the MMPI L scale for determining recidivism.

13. The mean of the control group is less than the mean of the inmate group on the MMPI K scale for determining recidivism.

14. The mean of the control group is less than the mean of the inmate group on the MMPI Pa scale for determining recidivism.

15. The mean of the control group is greater than the mean of the inmate group on the PIL for determining recidivism.

16. The differences in the mean of the MMPI scales and the PIL scales z-scores is not a factor in determining when inmates will recidivate.

17. There is no specific differences between the mean of the inmate recidivists on the MMPI F, Pd, Pa, Sc, and Ma scales and the mean of the inmate non-recidivists on the Hs, D, Hy, and Si scales.

18. There is not a constellation of characteristics which constitutes recidivism.

19. The recidivists will not show more profiles with T=70 and above.

CHAPTER III

METHOD

Testing Procedures

The Texas Department of Corrections, as part of the records kept on each inmate, administers a battery of tests. The Minnesota Multiphasic Personality Inventory, the Otis Quick-Scoring and the Revised Beta intelligence tests, along with the Chicago Non-Verbal Test of Mental Ability, are the normal battery of tests given.

In December of 1970 this researcher administered the Purpose in Life test to 78 inmates drawn at random from the pre-release center at Sugarland, Texas. The pre-release center is a unit of the Texas prison system to which the inmate is sent six to eight weeks before he is released back into society. The pre-release program has the dual purpose of preparing the inmates for release to society, as a period of re-orientation, and as a measure for reducing the rate of recidivism. The PIL scores along with the MMPI and other test scores were the test data used for this study on the inmate sample.

In October 1971 the MMPI and the PIL were administered to trainees in two Manpower Development Skill Training Centers, one in Tulsa and the other Oklahoma City. The General Aptitude Test Battery (GATB), administered as part of the Manpower Development Skills Training program on each applicant, was the other test data used for the control group. Approximately 50 persons were selected from the Tulsa center and another

40 from the Oklahoma City center.

The criterion for validity for the MMPI was the same for both the inmate and the control group.

Traditionally, the validity scales for the MMPI, L, F, and K, serve as criteria for the exclusion of certain types of test profiles. When L scores are above a raw score of 8, when F scores are above 16, and when K scores are above 26, records are not used. For this study, records were used with F scores above 16. Thirteen out of 90 control subjects had F scores above 16 and 13 out of 78 inmates had F scores above 16. Neither inmate nor control group had K above 26 and only one inmate had an L above 8. None of the control group had an L above 8. The rationale for using high F scores is that traditionally this scale has been linked to delinquent orientation. Dahlstrom and Welsh have described this rationale:

> Very high F scales elevations, with raw scores from 16 to 20, are usually produced by patients with frank psychoses, although they are also obtained from test subjects who are resistive to the test and to the assessment process. For example, Hathaway and Monachesi (1958) obtained scores in this range from attention to the test items, probably at those times when a proctor was near them during group testing, and who were responding to many of the questions without regard to the content. These subjects showed the same sort of resistance to authority outside the test setting and had a high preponderance of delinquency records.
>
> Some clinicians have noted that a young subject going through a period of rebellion against his family and its traditional values and mores may respond to some of the F items in a way different from someone either more accepting of family domination or free from such ties and demands. The F scale, like scale 4, contains many items bearing on family relationships (Dahlstrom and Welsh, 1960, pp. 140-142).

The findings indicate that high F scores of themselves can be predictors of strong delinquent orientations.

MMPI Scales Used for Analysis

The 13 MMPI scales chosen for data analysis have already been listed on Table I. These are the standard MMPI scales and do not include any of the scales developed by various researchers for prison use.

Subjects

Seventy-eight men, each of whom had been convicted of a felony and sentenced to the Texas Department of Corrections, served as the inmate group for this study. Ninety men, each of whom were selected for training in the Manpower Development Training program served as the control group for this study. Valid MMPI and Purpose in Life tests along with other test material had been completed by both groups.

In addition to the two diagnostic tests administered, additional test information for both groups was made available. For the inmate group, age, intelligence, race, amount of time served in prison, types of crimes for conviction, educational background, educational achievement and whether they had Vocational Technical School education were areas in which a general homogeneity was regarded as desirable. For the control group the same information was made available except for types of crimes, and time served in prison (none of the control group had been in prison or in a mental hospital).

Intelligence

Full Scale, Language, and Non-language I.Q.'s based on the Otis Quick-Scoring and the Revised Beta intelligence tests were available

on all inmates. Scores from the General Aptitude Test Battery were made available on the control group. Table II affords a comparison of the two groups in terms of intellectual functioning by a listing of all I.Q.'s with Full Scale I.Q.'s as a determinant of rank order. The mean Full Scale I.Q. of the control group was 101.8 with a range of 68 to 131. The mean full Scale I.Q. for the inmate group was 92.1, with a range of 70 to 125. A t-value was computed for differences between the mean of both groups and it was 1.05 and found to be not significant.

Educational Achievement

Educational achievement for both the inmate and control groups were computed from both the Otis and the Revised Beta intelligence tests for the inmates and the GATB for the control group. Both the GATB and the Otis have mean of 100 and standard deviation of 16.1. Mental achievement conversions were made on basis of both tests using the same scaling method. The educational achievement mean for the control group was 9.9 with a range of 6.1 to 12.0. The educational achievement mean for the inmate group is 7.4 with a range of 3.6 to 12.0. A t-value was computed for differences between the mean of both groups and it was 2.84 and was significant at the .01 level of confidence. There was a difference between the mean of years of school completed for both groups. Control mean was 10.7 and inmate mean was 9.0. This has a computed t-value of 5.8 and is significant at the .001 level. (See Table III.)

Conviction and Time Served on Inmate Group

The legal classifications of felonies can be very detailed

TABLE II

A LIST OF I.Q. SCORES ON THE INMATES AND THE CONTROL GROUP IN INVERSE RANK ORDERS

Inmates				Control Group					
Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
1.	125	40.	92	1.	131	40.	94	79.	74
2.	123	41.	92	2.	126	41.	94	80.	73
3.	123	42.	91	3.	122	42.	94	81.	73
4.	121	43.	91	4.	122	43.	94	82.	73
5.	113	44.	91	5.	119	44.	92	83.	73
6.	113	45.	90	6.	116	45.	92	84.	73
7.	110	46.	89	7.	114	46.	91	85.	72
8.	110	47.	89	8.	114	47.	91	86.	71
9.	108	48.	88	9.	113	48.	91	87.	71
10.	108	49.	88	10.	113	49.	90	88.	70
11.	107	50.	86	11.	112	50.	90	89.	70
12.	107	51.	86	12.	112	51.	89	90.	70
13.	105	52.	85	13.	111	52.	89	91.	68
14.	103	53.	85	14.	111	53.	89		
15.	103	54.	85	15.	109	54.	88		
16.	103	55.	85	16.	109	55.	88		
17.	101	56.	83	17.	108	56.	88		
18.	100	57.	83	18.	108	57.	87		
19.	99	58.	82	19.	108	58.	85		
20.	97	59.	82	20.	108	59.	85		
21.	97	60.	82	21.	107	60.	84		
22.	97	61.	81	22.	105	61.	84		
23.	97	62.	81	23.	105	62.	84		
24.	97	63.	81	24.	105	63.	84		
25.	97	64.	81	25.	104	64.	83		
26.	96	65.	81	26.	104	65.	82		
27.	95	66.	81	27.	103	66.	81		
28.	95	67.	80	28.	103	67.	81		
29.	95	68.	78	29.	101	68.	81		
30.	95	69.	78	30.	101	69.	81		
31.	95	70.	77	31.	99	70.	80		
32.	94	71.	76	32.	99	71.	80		
33.	94	72.	75	33.	98	72.	80		
34.	93	73.	75	34.	98	73.	79		
35.	93	74.	75	35.	97	74.	76		
36.	93	75.	74	36.	97	75.	76		
37.	93	76.	71	37.	96	76.	75		
38.	92	77.	70	38.	95	77.	75		
39.	92	78.	70	39.	94	78.	75		

Mean = 92.1

Mean = 101.8

t Score - 1.05 Not Significant

TABLE III

A LIST OF INVERSE RANK SCORES OF EDUCATIONAL ACHIEVEMENT ON THE INMATE AND CONTROL GROUPS

Inmates				Control Group					
Rank	Score	Rank	Scores	Rank	Scores	Rank	Scores	Rank	Scores
1.	3.6	40.	7.1	1.	4.9	40.	8.6	79.	12.0
2.	3.7	41.	7.2	2.	5.3	41.	8.7	80.	12.0
3.	4.4	42.	7.3	3.	5.3	42.	8.7	81.	12.0
4.	4.9	43.	7.3	4.	5.3	43.	8.7	82.	12.0
5.	4.9	44.	7.4	5.	6.0	44.	9.0	83.	12.0
6.	5.1	45.	7.4	6.	6.0	45.	9.0	84.	12.0
7.	5.2	46.	7.7	7.	6.1	46.	9.2	85.	12.0
8.	5.3	47.	7.7	8.	6.1	47.	9.2	86.	12.0
9.	5.4	48.	7.9	9.	6.2	48.	9.6	87.	12.0
10.	5.6	49.	7.9	10.	6.3	49.	9.7	88.	12.0
11.	5.6	50.	7.9	11.	6.3	50.	9.7	89.	12.0
12.	5.6	51.	7.9	12.	6.3	51.	9.8	90.	12.0
13.	5.7	52.	8.0	13.	6.3	52.	9.9	91.	12.0
14.	5.8	53.	8.0	14.	6.3	53.	9.9		
15.	5.9	54.	8.0	15.	6.4	54.	9.9		
16.	6.0	55.	8.2	16.	6.6	55.	9.9		
17.	6.0	56.	8.5	17.	6.7	56.	9.9		
18.	6.1	57.	8.7	18.	6.7	57.	9.9		
19.	6.2	58.	8.7	19.	7.0	58.	9.9		
20.	6.3	59.	8.8	20.	7.0	59.	10.0		
21.	6.3	60.	8.8	21.	7.0	60.	10.2		
22.	6.3	61.	9.0	22.	7.1	61.	10.2		
23.	6.3	62.	9.2	23.	7.3	62.	10.2		
24.	6.4	63.	9.2	24.	7.3	63.	10.8		
25.	6.5	64.	9.2	25.	7.3	64.	10.8		
26.	6.5	65.	9.2	26.	7.5	65.	11.0		
27.	6.5	66.	9.9	27.	7.5	66.	11.0		
28.	6.6	67.	10.2	28.	7.6	67.	11.0		
29.	6.8	68.	10.4	29.	7.9	68.	11.2		
30.	6.8	69.	10.7	30.	7.9	69.	11.2		
31.	6.8	70.	10.7	31.	7.9	70.	11.2		
32.	6.8	71.	10.7	32.	7.9	71.	11.3		
33.	6.9	72.	11.0	33.	8.4	72.	11.3		
34.	6.9	73.	11.6	34.	8.4	73.	11.3		
35.	7.0	74.	11.6	35.	8.4	74.	11.5		
36.	7.0	75.	11.6	36.	8.6	75.	11.6		
37.	7.0	76.	12.0	37.	8.6	76.	11.6		
38.	7.1	77.	12.0	38.	8.6	77.	11.8		
39.	7.1	78.	12.0	39.	8.6	78.	12.0		

Mean = 7.4

Mean = 10.7
t Score 5.8

and highly specific. Therefore, as a matter of convenience and simplification, a four-category system of felony classification was developed.

Type 1 includes the property offenses, such things as burglary, grand larceny, auto theft, check over $50.00, and other similar types of offenses. Type 2 offenses were offenses against persons. These include manslaughter, assault, armed robbery, and murder. Type 3 offenses are the drug offenses. These crimes would include, possession of narcotics paraphernalia, driving while intoxicated, and possession of marijuana. Type 4 offenses were sexual and family offenses. These would include bigomy, assault to rape, child molestation, and homosexuality.

Table IV shows the type of offenses that were committed by the inmate group and the length of time served. It shows that 61 of the offenders were initially sentenced for Type 1 offenses. Type 2 offenses account for nine of the offenders. Type 3 offenses account for six of the offenders; and type 4 account for two of the offenders. Thus crimes involving property account for 78% of all the offenses which were committed by these inmates for this study.

The actual time served at the prison for these inmates varies from a low of 8 months to a high of 6.7 years. The mean time served for the group was 2.6 years.

Vocational Training of the Inmates

Out of the 78 inmates, 4 of them had been in vocational training programs within the prison. One of the inmates worked on small gasoline engines as a trainee of the prison in a shop, but this was not a part of the vocational education program. The majority of the inmates worked

TABLE IV

TYPE OF CRIME AND LENGTH OF TIME SERVED

	Type of Crime	Code	Time Served
1.	Burglary	1	2 yrs. 5 mos.
2.	Burglary	1	1 yr. 8 mos.
3.	Robbery by Assault	2	3 yrs. 4 mos.
4.	Theft	1	3 yrs. 2 mos.
5.	Forgery	1	2 yrs. 8 mos.
6.	Forgery	1	6 yrs. 7 mos.
7.	Burglary	1	2 yrs. 3 mos.
8.	Burglary	1	1 yr. 3 mos.
9.	Driving W/O Consent	1	1 yr. 2 mos.
10.	Burglary	1	1 yr. 2 mos.
11.	Forgery	1	1 yr.
12.	Defraud by Credit Card	1	1 yr. 8 mos.
13.	Theft	1	2 yrs.
14.	Shoplifting	1	1 yr. 8 mos.
15.	Burglary	1	1 yr. 3 mos.
16.	Robbery by Assault	2	6 yrs. 10 mos.
17.	Burglary	1	4 yrs.
18.	Driving while Intoxicated	3	9 mos.
19.	Theft	1	1 yr. 9 mos.
20.	Theft	1	1 yr. 9 mos.
21.	Burglary	1	2 yrs. 10 mos.
22.	Driving W/O Consent	1	1 yr. 9 mos.
23.	Forgery	1	3 yrs. 9 mos.
24.	Rape	4	2 yrs. 9 mos.
25.	Worthless Checks	1	1 yr. 8 mos.
26.	Burglary	1	2 yrs. 7 mos.
27.	Burglary	1	1 yr. 10 mos.
28.	Break & Enter. Mtr. Veh.	1	1 yr. 7 mos.
29.	Theft over $50	1	2 yrs. 2 mos.
30.	Burglary	1	2 yrs. 1 mos.
31.	Theft over $50	1	1 yr. 1 mo.
32.	Forgery	1	1 yr. 9 mos.
33.	Escaped Jail	2	2 yrs. 5 mos.
34.	Embezzlement	1	1 yr. 10 mos.
35.	Assault to Rape	4	3 yrs. 1 mo.
36.	Forgery	1	1 yr. 6 mos.
37.	Burglary	1	1 yr. 3 mos.
38.	Robbery	2	1 yr. 5 mos.
39.	Robbery by Assault	2	2 yrs. 5 mos.
40.	Forgery	1	2 yrs. 7 mos.
41.	Burglary	1	1 yr. 5 mos.
42.	Driving while Intoxicated	3	8 mos.
43.	Burglary	1	1 yr. 3 mos.
44.	Forgery	1	2 yrs. 5 mos.

IV (Continued)

	Type of Crime	Code	Time Served
45.	Burglary	1	1 yr. 4 mos.
46.	Poss. of Narc. Paraphernalia	3	2 yrs. 4 mos.
47.	Theft	1	1 yr.
48.	Burglary	1	2 yrs. 8 mos.
49.	Burglary	1	3 yrs. 1 mo.
50.	Poss. of Marijuana	3	1 yr. 5 mos.
51.	Theft over $50	1	11 mos.
52.	Arson	1	1 yr. 6 mos.
53.	Theft over $50	1	3 yrs. 6 mos.
54.	Break, & Enter, Motor Vehicle	1	1 yr. 9 mos.
55.	Assault W/Int. to Rob	2	1 yr.
56.	Shoplifting	1	1 yr.
57.	Burglary	1	3 yrs. 3 mos.
58.	Theft over $50	1	2 yrs.
59.	Defraud W/Worthless Checks	1	1 yr.
60.	Burglary	1	1 yr.
61.	Burglary	1	1 yr. 6 mos.
62.	Burglary	1	2 yrs.6 mos.
63.	Burglary	1	1 yr.
64.	Poss. of Narcotics	3	2 yrs. 2 mos.
65.	Passing Forged Instr.	1	3 yrs. 6 mos.
66.	Passing Forged Instr.	1	3 yrs. 3 mos.
67.	Bigamy	4	1 yr. 9 mos.
68.	Burglary	1	1 yr. 5 mos.
69.	Assault W/Int. to Rob	2	2 yrs. 5 mos.
70.	Robbery W/Firearms	2	2 yrs. 6 mos.
71.	Burglary	1	1 yr. 4 mos.
72.	Theft	1	1 yr.
73.	Burglary	1	2 yrs. 1 mo.
74.	Passing Forged Inst.	1	1 yr. 2 mos.
75.	Forgery	1	1 yr. 1 mo.
76.	Theft	1	3 yrs. 8 mos.
77.	Driving while Intoxicated	3	8 mos.
78.	Burglary	1	3 yrs. 9 mos.

as laborers both in agriculture and in construction. Out of the 78 inmates, 68 of them had occupations called laborer or labor-oriented titles such as, maintenance, fencing squad, tire plant, textile mill. One inmate was an academic instructor for the education program in the prison. A general description of the inmates occupation while in prison would be unskilled and menial labor.

All of the control group had Vocational Education of at least one week or more.

Age and Race

Both groups were matched on the range of the age of the subjects and the percent of ethnic make-up. The mean age for the inmate group was 28.4 and ranged from 17 to 49. The mean age for the control group was 26.9 and ranged from 17 to 51. There was no significant difference in age between the 2 groups. The t-score for the two groups was -1.17.

The ethnic make-up of the two groups was nearly the same. There was 24% black, 1% Indian or Latin American and 75% white for the inmate group. There was 27% black and less than 1% Indian or Latin American and 72% white for the control group.

Differences Between the Two Groups

Both inmate and control group were closely matched on nearly every variable. There was a significant difference between the number of years of school completed and the mental maturity of the two groups. The control group being higher in both areas. It should be kept in mind that many of the control group were being trained for skilled positions which called for high school graduate or high school equivalent. Both

groups were matched on age, race, and I.Q. Four of the inmates had vocational education; all of the control group did.

Data Analysis

A factor analysis program of the Fortran type was available for the present research. This program was taken from Donald Veldman (1967) series of programs for the social sciences. The t-test and the z-score programs were written in Fortran language. Appendixes A and B give the programs and statistical tests used for this study.

The factor analysis program is a very useful procedure for a multi-variable study. The single most distinctive characteristics of factor analysis is its data-reduction capability. Given an array of correlation coefficients for a set of variables, factor-analytic techniques enable us to see whether some underlying pattern of relationships exists such that the data may be "rearranged" or "reduced" to a smaller set of factors or components that may be taken as source variables accounting for the observed interrelations in the data. Rummel discusses the uses of factor analysis and says:

> Nevertheless, the most common applications of the method may be classified into one of the following categories: (1) exploratory uses--the exploration and detection of patterning of variables with a view to the discovery of new concepts and a possible reduction of data; (2) confirmatory uses--the testing of hypotheses about the structuring of variables in terms of the expected number of significant factors and factor loadings; and (3) uses as a measuring device--the construction of indicies to be used as new variables in later analysis. The exploratory uses of Factor analysis are the most common but should not be taken as the sole rationale for factor analysis. As more factor-analytic studies are made, the confirmatory uses of factor analysis, or hypotheses testing, will take on greater importance. (Rummel, 1967, pp. 444-445)

Types of Factor Analysis

The term factor analysis is not a unitary concept, and it incorporates a fairly large variety of procedures, the most general classification of which may be organized around the major alternatives available at each of the three customary steps of factor analysis. The three ordinary steps are (1) the preparation of the correlation matrix; (2) the extraction of the initial factors--the exploration of possible data reduction; and (3) the rotation to a terminal solution--the search for simple and interpretable factors. Major options at each stage may be summed up by three dichotomies: R-type versus Q-type factor analysis in step 1, defined versus inferred factors in step 2, and orthogonal versus oblique in step 3.

The first step in this factor analysis program involved the calculation of appropriate measures of association for a set of relevant variables. The factor analysis program used for this study used the R-type. The R-type is a method of correlation used between variables.

The second step in this factor analysis program was to reduce the number of variables down on the basis of the interrelations exhibited in the data.

The third step was to use an orthogonal rotation method.

t-Scores

The t-Test program written for this data was t values calculated for two independent samples. (See Appendix B)

z-Scores

The z-score program written for this data was z-values calculated for the inmate group using the mean and standard deviation of the control group.

Inmates Selected to Recidivate

The computer program which calculated the t and z-scores was designed to select those inmates who were one or more standard deviations above or below the mean of the control group.

Out of the 21 variables, there were 19 which were shared by both groups. From the 19 there were 8 variables that were significantly different at the .001 level of confidence. They were: (1) Conversion Hysteria (Hy); (2) Depression (D); (3) Hypochondriasis (Hs); (4) Psychopathic Deviate (Pd); (5) Psychasthenia (Pt); (6) Schizophrenia (Sc); (7) Purpose in Life (PIL); and (8) Years of school completed (Ed). Mental maturity (Ea) was found to be significant at the .01 level of confidence. In all there were nine variables that were significantly different between the test group and the control group.

For an inmate to be selected as a member of the recidivist group he had to be significantly different on four or more of the nine variables. A total of 40 inmates out of the 78 were selected to be the recidivist group.

The period of time in which the inmate was to recidivate was broken into four time periods of three months separation. The inmates selected to go into the various time periods were calculated on an averaging of all the z-scores. Example: Inmate 151 had an average

of 2.764, whereas inmate 170 had an average of 1.738; thus inmate 151 would recidivate in the first three months after release and inmate 170 would be in the last three months. There were four time periods of three months each. Table V gives the z-score average and the number of variables for each inmate. Table VI gives the inmate numbers for each of the four time periods.

TABLE V

AVERAGE Z-SCORE COMBINATION FOR THE RECIDIVIST GROUP

Number	Average	Number of Variables
1. 104.	1.88	7
2. 105.	1.19	7
3. 108.	3.03	6
4. 109.	2.32	8
5. 110.	1.90	6
6. 111.	1.96	7
7. 113.	2.48	5
8. 117.	1.64	5
9. 122.	1.71	5
10. 123.	2.43	7
11. 125.	3.25	7
12. 126.	1.37	6
13. 127.	1.81	7
14. 129.	2.20	5
15. 131.	3.19	8
16. 132.	2.30	6
17. 134.	1.44	7
18. 136.	1.71	6
19. 139.	2.73	5
20. 140.	2.06	5
21. 141.	1.65	5
22. 142.	1.54	5
23. 144.	2.13	6
24. 148.	1.77	5
25. 151.	2.76	8
26. 153.	2.31	6
27. 154.	1.57	5
28. 155.	1.96	5
29. 156.	2.07	8
30. 158.	1.75	6
31. 159.	3.24	8
32. 162.	1.77	6
33. 165.	2.72	7
34. 167.	1.96	8
35. 169.	2.10	6
36. 170.	1.74	5
37. 171.	1.81	6
38. 173.	1.59	6
39. 175.	2.13	6
40. 178.	2.32	8

TABLE VI

INMATE NUMBER AND THE TIME PERIOD PREDICTED FOR RECIDIVATION

Period One: First Three Months		Period Four: Fourth Three Months	
Inmate Number	Average	Inmate Number	Average
105.	3.18	104.	1.88
108.	3.03	110.	1.90
125.	3.25	111.	1.96
131.	3.19	117.	1.63
159.	3.23	122.	1.71
		126.	1.36
		127.	1.80
Period Two: Second Three Months		134.	1.43
		136.	1.70
109.	2.32	141.	1.65
113.	2.48	142.	1.53
123.	2.42	148.	1.77
151.	2.76	154.	1.57
178.	2.31	155.	1.96
		158.	1.74
		162.	1.72
Period Three: Third Three Months		167.	1.95
		170.	1.73
129.	2.19	171.	1.81
132.	2.29	173.	1.58
140.	2.06		
144.	2.12		
153.	2.31		
156.	2.06		
169.	2.09		
175.	2.13		

CHAPTER IV

RESULTS

Analysis Procedure

First the data was analyzed by the use of a t-test to calculate the difference in the raw score mean for the inmate and control group on the 19 variables.

The next step was to compute z-scores. The mean and variance of the control group and the inmate raw score for each variable were the values used to compute the z-scores. Only those values found to be significant by the use of the t-test had between group differences computed.

The next step was to compute z-scores on the differences within the inmate group and test for significance.

The next step was to analyze the factor analysis data, which included the loaded variance on each significant factor and the inner correlation matrix.

Finally, the z-scores on each inmate recidivist were averaged together and those with the highest average were predicted to return first, the next highest second, next third, and finally last. There were four time periods three months apart, or a total of one year.

The Minnesota Multiphasic Personality Inventory

The Minnesota Multiphasic Personality Inventory is a test designed

to provide an objective assessment of some of the major personality characteristics that affect personal and social adjustment. The 13 scales provide a means for measuring the personality status of literate adolescents and adults together with a basis for evaluating the acceptability and dependability of each test record. These 13 scales are: (1) Hypochondriasis (Hs), (2) Depression (D), (3) Hysteria (Hy), (4) Psychopathic Deviate (Pd), (5) Masculine-feminine (Mf), (6) Paranoia (Pa), (7) Psychasthenia (Pt), (8) Schizophrenia (Sc), (9) Hypomania (Ma), (10) Social Introversion (Si), (11) Lie (L), (12) Validity (F), (13) Correction (K).

The L, K, F, are validity scales. These scales tell if the subject is telling the truth as he responds to the test items. These scales are read in combinations and within certain mean limits they measure reliability of the test. The K scale in particular also measures test-taking attitude appearing either as personal defensiveness or as an exhibition of personal defects and troubles.

The Hs scale attempts to measure the personality characteristics related to the neurotic pattern of hypochondriasis. Persons diagnosed with this disorder show an abnormal concern for their bodily functions.

The D scale is a measure of the degree of depression. This mood state is characterized generally by pessimism of outlook on life and the future, feelings of hopelessness or worthlessness, slowing of thought and action and frequently pre-occupied with death and suicide.

The Hy scale is a measure of conversion hysteria. People who possess this in the extreme appear to use physical symptoms as a means of solving difficult conflicts or avoiding mature responsibilities.

The Pd scale was developed to measure the personality

characteristics of the amoral and asocial subgroup of persons with psychopathic personality disorders. The major features of this personality pattern include a repeated and flagrant disregard for social customs and mores, an inability to profit from punishing experiences as shown in repeated difficulties of the same kind, and an emotional shallowness in relations to others, particularly in sexual and affectional display.

The Mf scale was designed to identify the personality features related to the disorder of male sexual inversion. This symptom, like the psychopathic deviate, shows considerable more uniformity than is found in the psychopathic personality category as a whole. The femininity of these men appears in their values, attitudes and interests, and styles of expression and speech, as well as in sexual relationships.

The Pa scale was developed to evaluate the clinical patterns of paranoia. The concept of paranoia involves a set of delusional beliefs, frequently including delusions of references, influence, and granduer.

The Pt scale was derived to help in the evaluation of the neurotic pattern of psychasthenia, or the obsessive-compulsive syndrome. The personality features included, in addition to the obsessive ruminations and the compulsive behavior rituals, are some forms of abnormal fears, worrying, difficulties in concentrating, guilt feelings, and excessive vacillations in making decisions.

The Sc scale was derived to measure the psychotic pattern of schizophrenia. Most commonly persons showing this psychiatric reaction are characterized as constrained, cold, and apathetic or indifferent. Delusions of varying degrees of organization, hallucinations, and disorientations may appear in various combinations.

The Ma scale was derived to measure hypomania. Three features characterize this pattern: overactivity, emotional excitement, and flight of ideas. The activity may lead to a great deal of accomplishment but is frequently inefficient and unproductive.

The Si scale was derived to measure concepts of introversion. Most generally introversion is characterized by withdrawal from social contacts and responsibilities. Little real interest in people is displayed.

The MMPI was completed on 90 control group members and 78 inmates. High F scores were not considered invalidating, since it appears from previous research that using elevated scores on F alone to invalidate profiles may result in the loss of valid clinical materials (e.g. Dahlstrom and Welsh, 1960).

The mean and variance values on the three validity and ten clinical scales for both the inmate and the control group are shown on Table VII.

A t-test was computed on the inmate and control MMPI scores as well as on the PIL and various demographic variables. Nine variables were found to be significant. There were 6 scales from the 13 MMPI scales among the 9 variables. These six were: (1) Hs, (2) D, (d) Hy, (4) Pd, (5) Pt, (6) Sc. Table VIII gives the mean score comparisons and calculated t-values for all 19 variables.

Inmate Recidivist Selection

Z-scores were calculated on the 78 inmates, using the raw scores of each inmate on the various test data scales and demographic variables, with the mean and variance of the control group. Criteria for selection as a member of the inmate recidivist group, was to have a z-score on

TABLE VII

CONTROL AND INMATE GROUP MEANS AND VARIANCES

Control Group (N=90)			Inmate Group (N=78)		
K	$\bar{X}$	12.30	K	$\bar{X}$	12.44
	SD	4.90		SD	4.54
F	$\bar{X}$	9.89	F	$\bar{X}$	9.61
	SD	7.24		SD	6.48
Hs	$\bar{X}$	7.76	Hs	$\bar{X}$	16.38
	SD	4.84		SD	6.38
D	$\bar{X}$	20.09	D	$\bar{X}$	22.50
	SD	4.79		SD	6.85
Hy	$\bar{X}$	19.36	Hy	$\bar{X}$	22.78
	SD	5.45		SD	6.98
Pd	$\bar{X}$	20.61	Pd	$\bar{X}$	28.25
	SD	4.52		SD	5.21
Mf	$\bar{X}$	22.81	Mf	$\bar{X}$	21.66
	SD	4.39		SD	4.46
Pa	$\bar{X}$	10.53	Pa	$\bar{X}$	11.85
	SD	4.02		SD	4.22
Pt	$\bar{X}$	15.40	Pt	$\bar{X}$	29.70
	SD	8.10		SD	6.97
Sc	$\bar{X}$	17.53	Sc	$\bar{X}$	30.60
	SD	11.31		SD	8.98
Ma	$\bar{X}$	20.95	Ma	$\bar{X}$	22.20
	SD	4.95		SD	4.76
Si	$\bar{X}$	28.37	Si	$\bar{X}$	27.76
	SD	9.20		SD	9.15
L	$\bar{X}$	4.40	L	$\bar{X}$	3.89
	SD	2.30		SD	2.11
PIL	$\bar{X}$	105.62	PIL	$\bar{X}$	92.60
	SD	16.90		SD	19.54
Ed	$\bar{X}$	10.75	Ed	$\bar{X}$	9.13
	SD	1.48		SD	2.04

VII (Continued)

Control Group (N=90)			Inmate Group (N=78)		
Ea.	$\overline{X}$	9.95	Ea.	$\overline{X}$	7.40
	SD	8.90		SD	1.93

TABLE VIII

t- VALUE AND MEANS SCORES ON 19 VARIABLES
(Control: N=93, Inmate: N=78)

	Control Mean	Prison Mean	Computed t
Correction	12.31	12.45	-0.19
Validity	9.89	9.62	0.26
Hypochondriasis	7.77	16.38	-9.75
Depression	20.10	22.50	-2.60
Conversion Hysteria	19.36	22.78	-3.50
Psychopathic Deviate	20.62	28.26	-10.09
Masculine-Feminine	22.81	21.67	1.68
Paranoia	10.54	11.86	-2.07
Psychasthenia	15.41	29.71	-12.33
Schizophrenia	17.54	30.60	-8.36
Hypomania	20.96	22.21	-1.67
Social Introversio n	28.37	27.77	0.43
Lie	4.41	3.90	1.50
Purpose in Life	105.62	92.60	4.59
Education	10.75	9.13	5.80
Educational Achievement	9.95	7.40	2.84
IQ	101.81	92.17	1.05
Race	1.46	1.46	0.00
Age	26.93	28.42	-1.17

four or more of the variables found to be significantly different by the use of the t-test, one or more standard deviations above or below the mean of the control group. Table IX gives the calculated z-score for those inmates who were predicted to be in the recidivist group.

There were 40 inmates in all who were selected from the 78 inmate group to be recidivists.

From an examination of Table IX we find that only one variable out of the 6 MMPI scales is common to all of the 40 inmate recidivist group. The Pt scale which is a measure of psychasthenia or obsessive compulsive behavior.

The Hs scale, a measure of hysteria, was common to all but one member of the inmate recidivists group.

The Pd and the Sc scales, the former a measure of psychopathic deviancy and the latter a measure of schizophrenia, were common to all but five members of the inmate recidivists group.

The D and the Hy scales, the former a measure of depression and the latter a measure of hypochondriasis, were the two MMPI scales which were the least common to the inmate recidivists group. Fifteen members of the inmate recidivists group were not above or below the mean on these two scales. However, they were not the same fifteen members on both scales but varied within the whole group. Some of the fifteen members were high on depression but not on hysteria and vice versa. Some were not high on either one but at the mean.

The z-scores ranged from -3.899 to -.1060 for the Pt scale. The Hs had a range of -5.203 to -1.079. The Pd had a range of -4.505 to -1.190. The Sc had a range of -3.223 to -1.013. The D had a range of -4.990 to -1.023. The Hy had a range of -4.335 to -1.034.

TABLE IX

RECIDIVIST GROUP Z-SCORES ON NINE SIGNIFICANT VARIABLES

Number	Hs	D	Hy	Pd	Pt	Sc	PIL	Ed	Ea
1. 104.	-1.491	-1.858	0.000	-2.516	-2.048	-2.693	1.397	1.175	0.000
2. 105.	-5.203	-3.946	-3.052	-3.842	-2.788	-1.897	1.574	0.000	0.000
3. 108.	-4.790	-2.067	-4.335	-3.842	-1.677	-1.455	0.000	0.000	0.000
4. 109.	-2.522	-2.484	-1.034	-1.853	-4.022	-2.870	2.638	1.175	0.000
5. 110.	-1.285	0.000	0.000	-2.074	-1.431	-1.102	2.343	3.193	0.000
6. 111.	-1.491	0.000	-1.034	-2.074	-2.048	-1.455	1.160	3.865	0.000
7. 113.	-4.378	0.000	-2.868	-1.632	-1.801	-1.270	0.000	0.000	0.000
8. 117.	-1.079	-1.023	0.000	-2.516	-2.294	-1.278	0.000	0.000	0.000
9. 122.	-2.728	2.108	0.000	-1.190	-1.307	0.000	1.219	0.000	0.000
10. 123.	-3.965	-1.858	-2.865	0.000	-2.541	-1.632	2.461	1.848	0.000
11. 125.	-2.728	-4.990	-1.584	-3.179	-4.762	-3.046	2.461	0.000	0.000
12. 126.	-1.903	0.000	-1.034	-1.411	-1.677	-1.013	0.000	1.175	0.000
13. 127.	-3.141	-1.023	-1.034	-2.074	-2.665	-1.544	0.000	1.175	0.000
14. 129.	-1.903	0.000	0.000	0.000	-2.418	-1.013	2.461	3.193	0.000
15. 131.	-3.347	-4.363	-2.318	-4.505	-2.911	-3.223	2.343	2.520	0.000
16. 132.	-2.934	-2.484	-1.401	0.000	-3.405	-1.720	0.000	1.848	0.000
17. 134.	-1.285	-1.441	1.167	-1.411	-1.677	-1.809	-1.265	0.000	0.000
18. 136.	0.000	-1.232	0.000	-2.295	-2.171	-1.367	1.337	1.848	0.000
19. 139.	-3.759	0.000	-2.501	-3.621	-2.048	-1.720	0.000	0.000	0.000
20. 140.	-1.491	0.000	0.000	-2.737	-1.307	-2.251	0.000	2.520	0.000
21. 141.	-1.079	0.000	0.000	-1.411	-2.294	-1.632	0.000	1.848	0.000
22. 142.	0.000	-1.203	0.000	-1.411	-1.801	0.000	2.284	1.175	0.000
23. 144.	-2.316	-2.067	-2.685	-2.958	-1.554	0.000	0.000	1.175	0.000
24. 148.	-1.697	0.000	0.000	-3.842	-1.184	-1.102	-1.028	0.000	0.000
25. 151.	-3.347	-2.484	-2.318	-2.737	-3.899	-3.577	2.579	1.175	0.000
26. 153.	-4.172	0.000	-2.868	-1.411	-2.418	-1.278	-1.738	0.000	0.000
27. 154.	-2.110	0.000	-1.034	-1.853	-1.060	0.000	1.810	0.000	0.000
28. 155.	-1.903	0.000	0.000	-2.516	-1.677	-1.190	0.000	2.520	0.000
29. 156.	-2.522	-2.276	-2.318	-1.411	-1.677	-1.102	2.698	2.520	0.000
30. 158.	-1.079	-1.649	0.000	0.000	-1.431	-1.013	1.456	3.865	0.000
31. 159.	-3.759	-3.946	-2.501	-4.284	-2.788	-3.135	1.633	3.865	0.000
32. 162.	-2.522	1.273	0.000	0.000	-1.554	-1.102	1.633	2.520	0.000
33. 165.	-4.790	-3.528	-3.235	0.000	-2.294	-1.809	1.574	1.848	0.000
34. 167.	-2.316	-2.067	-1.951	-1.190	-2.541	-1.013	2.047	2.520	0.000
35. 169.	-3.141	0.000	-2.501	-2.295	-1.554	-1.278	1.810	0.000	0.000
36. 170.	-1.491	0.000	0.000	-1.853	-2.541	-1.632	0.000	1.175	0.000
37. 171.	-1.079	-2.276	0.000	-2.295	-2.294	-1.367	1.574	0.000	0.000
38. 173.	-2.316	0.000	-1.217	-2.074	-1.307	0.000	1.337	1.175	0.000
39. 175.	-1.491	0.000	0.000	-1.632	-2.418	-1.986	2.757	2.520	0.000
40. 178.	-2.522	-1.858	-1.584	-3.179	-2.788	-1.720	3.703	1.175	0.000

There seems to be no apparent pattern in the range of the combined z-score for the recidivists group. It is possible to find an inmate with an extreme z-score of -5.203 or -4.790 on Hs yet be only -1.023 on one or more of the other variables. Some of the inmate recidivists show a consistently extreme score on many of the scales. The pattern only emerges when we look at the correlations among the variables. The results of correlation will be covered later in the chapter under the subtitle "Factor Analysis".

MMPI T Scores of 70 and Above

The Minnesota Multiphasic Personality Inventory T-scores independent of any group of scales were examined. A T-score is a raw score on any scale in the MMPI which exceeds the scaleable normal limits of the profile. For example, the normal amount of responses for Depression is a raw score not to exceed 25. Twenty-five raw score points is a T-scale score of 70. It was felt that inmate recidivists should have more T-scores above 70 than non-recidivists independent of mean score differences for the control group. If recidivists have common characteristics their scale profiles should be extreme within the criterion group since the other members are normal and should closely resemble the control group.

The T-scores of 70 and above are presented in Table X for both the recidivists and non-recidivists inmate group. Within this Table, seven scales are significant.

A z-score was calculated (see Appendix B) on the proportion of those who scored a T of 70 or above on each of the scales. The F scale was found to be significant at the .01 level, 19 out of 40 as compared

TABLE X

MMPI T SCORES OF 70 AND ABOVE BY SCALE

Scale	A	B	z-Scores	Probabilities
L	0	1	-1.03	.049
F	19	5	3.28	.0006
K	0	1	-1.03	.849
Hs	17	5	2.88	.0020
D	15	2	3.44	.0003
Hy	14	1	3.63	.0002
Pd	22	17	0.90	.183
Mf	0	1	-1.03	.849
Pa	10	3	2.03	.022
Pt	17	4	3.18	.0007
Sc	26	4	4.94	.00001
Ma	15	10	1.05	.145
Si	12	7	1.19	.117

A Recidivists N=40

B Non-recidivist

to 5 out of 38 (z=3.29).

Although the F scale was not significantly different from that of the control group, it was within the inmate group. Using the T-score of 70 which is a raw score of 12 for the F scale, 19 of the recidivists had T = 70 or above. Previous research (Hathaway and Monachesi) found that a raw score of 16, which is a T-score of 80, was a good predictor of recidivism for a single scale.

Thirteen of the inmates had an F raw score of 16 or more. Twelve of those are among the recidivists group predicted by the z-score combination. Also, 12 of them are among the 19 with T-scores above 70.

The t-test, using the control group mean and variance, did not detect a difference. The difference was detected, however, by a z-score calculation within the criterion group.

A high F score can also mean a resistance to taking the test. Since the MMPI takes nearly two and one-half hours to complete, and since it was administered to persons taken away from their Manpower Training sessions, a high resistance to the test might possibly explain the reason for no difference in F mean scores between groups.

When the inmates are administered the MMPI, they are taken from their cells to the Diagnostic Center. It is a treat and not a punishment to take the test and be out of the cells in a room with other inmates. The resistance to the test as such, would be minimal. Thus, high F scores in the case of the control group could be a resistance to the test; while, in the case of the inmates, it is an indicator of recidivism. Since 12 of the 13 were among the recidivists inmate group, this is probably the case.

A higher proportion of elevations over 70 on the Hs scale was also detected. Out of 40 subjects, 17 were higher as compared to 5 out of 38 (z-scores 2.88). This was significant at the .01 level.

The t-test found a significant difference between the inmates and the control group mean on this scale. It was significant at the .001 level. There was a greater between-group difference than a within group difference for this scale, but only slightly.

The D scale also showed a higher proportion of elevated T-scores over 70. There were 15 out of 40 compared to 2 out of 38 (z-score = 3.46). This was significant at the .001 level.

The t-test found the Depression (D) scale to also be significantly different at the .001 level for between group difference. Both between group and within group differences are the same for the inmate group on the D scale.

The Conversion Hysteria (Hy) scale also showed a higher proportion of elevated T-scores above 70. There were 14 out of 40 compared to 1 out of 38 (z-score = 3.64). This is significant at the .001 level.

The t-test found the Hy scale to also be significantly different at the .001 level for between inmate and control group difference. Both between group and within group differences are the same.

The Schizophrenia (Sc) scale also showed a higher proportion of elevated T scores over 70. There were 26 out of 40 compared to 4 out of 38 (z-score = 4.95). This was significant at the .001 level.

The t-test found the Sc scale to be significantly different for between group differences at the .001 level. Both the between group and within group differences are the same.

The Psychasthenia (Pt) scale showed a higher proportion of

elevated T-scores over 70. There were 17 out of 40 compared 4 out of 38 (z-score = 3.19). This was significant at the .01 level.

The t-test also found the Pt scale to be significantly different. It found it to be significant at the .001 level. The between group differences was a little different than the within group difference.

The Paranoia (Pa) scale showed a higher proportion of elevated T-scores above 70. There were 10 out of 40 compared to 3 out of 38 (z-score = 2.08). This was significant at the .05 level.

The t-test did not detect a between group difference on the scale.

The Pa was different between groups but it did not show up on the t-test. The difference does show up in the factor analysis.

The Psychopathic Deviate (Pd) scale was also different between groups. A t-test shows it to be significantly different at the .001 level. The within group difference does not show up with a z-score test of significance. Twenty-two out of 40 inmate recidivists had T-scores over 70 as did 17 out of 38 non-recidivists. The z-score calculation was not significant at any level of confidence. The within group difference does show up in the factor analysis.

The Hypomania (Ma) and the Social Introversion (Si) were not significant. The between group t-test did not find any difference either. Also, the factor analysis shows little or no difference.

In general the within and the between group mean scores are the same on all but the F and the Pa and the Pd for the control group and for the non-recidivists inmate group.

Purpose in Life

The Purpose in Life (PIL) was completed by 90 control group members

and 78 inmates. A t-test was computed on the difference between the mean of the control group and the mean of the inmate group and it was found to be significant at the .001 level.

Using the within group comparison we find that 28 out of 40 were below the mean of the control group for the recidivists inmate group. Sixteen out of 38 were below the control group mean for the non-recidivist group (z-score = 2.148). This was significant at the .05 level.

The range of the PIL z-scores was from 3.703 to 1.219. It should be kept in mind that the higher the raw score on the PIL, the higher is a person's "purpose in life". Therefore, we would expect positive scores from the inmate group in computing the z-scores which would be interpreted to mean that the inmate recidivists group had less "purpose in life" than the control group.

Three of the recidivists group were above the mean of the control group. They were 134 with a z-score of -1.265; number 148 with a z-score of -1.028; and number 153 with a z-score of -1.738.

Twelve of the recidivists group had no difference in "purpose in life" from that of the control group. Twenty-seven, or 67%, of the recidivists group were significantly different, see Table XI.

Education

There was a significant difference between the control group and the inmate group in the area of education. A t-score was calculated and it was found to be significantly different at the .01 level of confidence. The mean for the control group was 10.7. The mean for the inmate group was 9.9. (See Table VII, Page 44.) The range of

TABLE XI

PIL RAW AND Z-SCORES FOR THE INMATES

Inmate Number	Raw Score	z-Score	Inmate Number	Raw Score	z-Score
104	82	1.397	141	101	0.000
105	79	1.574	142	67	2.284
108	103	0.000	144	93	0.000
109	61	2.638	*148	123	-1.028
110	66	2.343	151	62	2.579
111	86	1.160	*153	135	-1.738
113	91	0.000	154	75	1.810
117	109	0.000	155	94	0.000
122	113	1.219	156	60	2.698
123	64	2.461	158	81	1.456
125	64	2.461	159	79	1.633
126	114	0.000	162	78	1.633
127	107	0.000	165	79	1.574
129	64	2.461	167	71	2.047
131	66	2.343	169	75	1.810
132	106	0.000	170	101	0.000
*135	127	-1.265	171	79	1.574
136	83	1.337	173	83	1.337
139	122	0.000	175	59	2.757
140	101	0.000	178	43	3.703

*Those above the mean of the control group

the control group was 13.0 to 7.0. The inmate range was 15.0 to 5.0. Table XII gives the number of years of education completed in their rank order for the inmate group. The median for the control group was 11.0.

For the inmate recidivists group, 13 of the group were not above or below the mean of the control group. Approximately 65% of the recidivists group were below the mean of the control group. The z-score range of the recidivists group was 3.86 to 1.17. Table XIII shows the number of years of school completed and computed z-scores for the 27 who were below the mean of the control group.

From Table XII we can see that 10 of the 27 had 9th grade educations, and were at the mean of the inmate group but below the control group. Seventeen were below the inmate mean; five had an eighth grade education; seven had seventh grade education; one had sixth grade education; and three had fifth grade education. Approximately 42% of the recidivists group were sub-standard to the inmate group and far below the control group.

Proportionately, we found 27 out of 40 who were below the inmate mean and 16 out of 38 below the inmate mean in the non-recidivists group (z-score = 3.173, $p = .01$). Not only was there between group significance, but also within group significance.

Educational Achievement

A t-test was computed on the variable or educational achievement and found to be significant at the .01 level. The control group had a mean of 9.95 and the inmate had a mean of 7.40 (see Table VII, Page 44). A z-score was computed and none of the inmates were one

TABLE XII

RANK ORDER NUMBER OF YEARS IN SCHOOL

Rank	Years of School	Rank	Years of School	Rank	Years of School
1.	15	27.	10	53.	8
2.	14	28.	10	54.	8
3.	12	29.	10	55.	8
4.	12	30.	10	56.	8
5.	12	31.	10	57.	8
6.	12	32.	10	58.	8
7.	12	33.	10	59.	8
8.	12	34.	10	60.	7
9.	12	35.	9	61.	7
10.	11	36.	9	62.	7
11.	11	37.	9	63.	7
12.	11	38.	9	64.	7
13.	11	39.	9	65.	7
14.	11	40.	9	66.	7
15.	11	41.	9	67.	7
16.	11	42.	9	68.	7
17.	11	43.	9	69.	7
18.	11	44.	9	70.	7
19.	11	45.	9	71.	7
20.	11	46.	9	72.	6
21.	11	47.	9	73.	6
22.	10	48.	9	74.	6
23.	10	49.	8	75.	6
24.	10	50.	8	76.	5
25.	10	51.	8	77.	5
26.	10	52.	8	78.	5

TABLE XIII

INMATES Z-SCORES AND YEARS OF EDUCATION COMPLETED FOR INMATES BELOW THE MEAN OF THE INMATE GROUP

Inmate Number	Years Completed	z-Scores	Inmate Number	Years Completed	z-Scores
104	9	1.175	144	9	1.175
109	9	1.175	151	9	1.175
110	6	3.193	155	7	2.520
111	5	3.865	156	7	2.520
123	8	1.848	158	5	3.860
126	9	1.175	159	5	3.860
127	9	1.175	162	7	2.520
129	6	3.193	165	8	1.848
131	7	2.520	167	7	2.520
132	8	1.848	170	9	1.175
136	8	1.848	173	9	1.175
140	7	2.520	175	7	2.520
141	8	1.848	178	9	1.175
142	9	1.175			

standard deviation above or below the control group mean.

If we examine the variance of the control group, we find that it is 8.29 (see Table VII, Page 44). The variance of the inmate group is 1.9. Using the control group variance and the inmate raw score, we find no subjects one standard deviation above or below the mean of the control group.

An F test (see Appendix B) was calculated on the variance between the control group and the inmate group and was found to be significant at the .05 level.

Table XIV lists in rank order the educational achievement for the 40 inmates. The mean for the recidivists inmate group is approximately 6.8. Twenty-nine out of 40, or 72% of those selected to recidivate are below the mean of the inmate group.

Five out of 40 of the inmate recidivists are at the mean of the control group; whereas, 11 out of 38 of the non-recidivists inmate group are at the mean (z-score of -1.97). This is significant at the .05 level. If we use the inmate mean of 7.40; we find that 18 out of 40 are at the mean or above and 20 out of 38 are at the mean or above. The z-score for this is -3.03 which is significant at the .01 level.

The inmate educational achievement for the inmate recidivists group is not only significantly different between the groups but also within the group.

Race

A t-test was calculated on the control group and the inmate group and there is no significant difference. The control group mean was 1.4615 with a variance of .6343 (see Table VII, Page 44). The inmate

TABLE XIV

RANK ORDER OF INMATE EDUCATIONAL ACHIEVEMENT

Inmate Number	Educational Achievement	Inmate Number	Educational Achievement
144	3.6 yrs.	175	6.8 yrs.
129	3.7 yrs.	151	6.9 yrs.
110	4.4 yrs.	156	7.0 yrs.
173	4.9 yrs.	134	7.0 yrs.
178	5.1 yrs.	122	7.1 yrs.
158	5.2 yrs.	170	7.1 yrs.
109	5.3 yrs.	169	7.2 yrs.
131	5.4 yrs.	167	7.3 yrs.
111	5.6 yrs.	162	7.3 yrs.
123	5.6 yrs.	141	7.7 yrs.
104	5.7 yrs.	105	7.9 yrs.
165	5.8 yrs.	148	7.9 yrs.
126	5.9 yrs.	108	8.0 yrs.
140	6.0 yrs.	127	8.2 yrs.
159	6.1 yrs.	132	8.7 yrs.
117	6.3 yrs.	142	8.8 yrs.
153	6.3 yrs.	154	10.4 yrs.
113	6.5 yrs.	155	10.7 yrs.
136	6.6 yrs.	171	11.6 yrs.
139	6.8 yrs.	125	11.6 yrs.

mean was 1.4615 and a variance of .6923. The racial composition of both groups was the same.

The inmate recidivists group did, however, show a difference in racial make-up. Table XV lists the race of the inmate recidivists group. Eleven of the 40, or 27%, were black, five of the 40, or 12%, were Latin American and 24 of the 40, or 60% were white. This is a higher percentage of minorities than in the original composition of 78. The inmate group as a whole had 23% black, 12% Latin American, and 65% white. Thus, 11 out of the original 18 blacks were in the recidivists group; 5 of the original 9 Latin Americans, and 24 out of the original 51 whites. The difference in proportion was not significant for race.

Age

A t-test was calculated on both groups and there was no significant difference between the mean age of the control group and the mean age of the inmate group. The control group mean and variance was 26.9 and 8.80 (see Table VII, Page 44). The inmate mean and variance was 28.4 and 7.78 respectively. Table XVI is the age of the recidivists inmate group. They ranged from 49 to 17. The mean age is 27.9 and slightly higher than the inmate group as a whole. Two were in their teens, 19 were in their twenties, 10 were in their thirties, and 3 were in their forties. This represents about the same proportion in the inmate group as a whole.

IQ

A t-test was computed on the control and inmate groups and there

TABLE XV

RECIDIVIST INMATE RACIAL MAKE-UP

Inmate Number	Race	Inmate Number	Race
104	L.A.	141	W
105	W	142	W
108	B	144	L.A.
109	B	148	B
110	W	151	W
111	W	153	W
113	W	154	B
117	B	155	W
122	B	156	L.A.
123	L.A.	158	W
125	W	159	W
126	B	162	W
127	W	165	W
129	B	167	W
131	W	169	B
132	W	170	W
134	B	171	W
136	W	173	B
139	W	175	W
140	W	178	L.A.

B = Negro
L.A. = Latin American
W = White

TABLE XVI

RECIDIVIST INMATE AGE

Inmate Number	Age	Inmate Number	Age
104	19	141	27
105	45	142	29
108	25	144	25
109	18	148	21
110	28	151	24
111	26	153	29
113	31	154	36
117	21	155	28
122	18	156	39
123	22	158	33
125	49	159	45
126	20	162	28
127	21	165	24
129	33	167	30
131	26	169	19
132	38	170	35
134	19	171	26
136	17	173	38
139	36	175	31
140	25	178	23

was no significant difference between the IQ's for both groups. The mean for the control group was 101.8 and the variance was 8.66. The mean for the inmate group was 92.16 and the variance was 12.61. (See Table VII, Page 44.) An F statistic was calculated and it was found to be significant at the .01 level. Table XVII is a list of the recidivists inmate group IQ scores. Eighteen of the 40, or 45%, of the inmate recidivists group are below the mean of the inmate group and all but 5 are below the control group mean.

Types of Crimes Committed

The most common type of crime committed was against property for the inmate group as a whole. Seventy-eight percent of the inmates were convicted of property offenses. Eleven percent were convicted for crimes against persons. Less than one percent were convicted for drugs and alcohol. And less than one-half of one percent were convicted of sexual and family offenses. Table XVIII gives the offenses of the inmate recidivists group. Property offenses are the most common offenses. Thirty-one of the 40 predicted as recidivists, or 77%, were convicted for crimes against persons as compared with 11% for the whole inmate group. Only three of the nine were among the recidivists group. Approximately eight percent were convicted for drugs and represent four of the six drug offenders. Two of the seventy-eight were convicted for sexual and family offenses and both of those were among the recidivists inmate group.

Amount of Time Served

The amount of time served by the inmate group ranged from 6.7 to

TABLE XVII

RECIDIVIST INMATE IQ SCORES

Inmate Number	IQ	Inmate Number	IQ
104	85	141	96
105	95	142	108
108	90	144	81
109	76	148	97
110	71	151	95
111	81	153	89
113	92	154	92
117	77	155	92
122	91	156	83
123	85	158	86
125	113	159	85
126	83	162	97
127	93	165	70
129	92	167	99
131	82	169	97
132	97	170	93
134	88	171	113
136	75	173	74
139	95	175	92
140	78	178	78

TABLE XVIII

RECIDIVIST INMATE LENGTH OF TIME SERVED

Inmate Number	Time Served	Inmate Number	Time Served
104	3.2	141	.8
105	2.8	142	1.3
108	1.3	144	1.4
109	1.2	148	1.5
110	1.2	151	3.6
111	1.0	153	1.0
113	2.0	154	1.0
117	4.0	155	3.3
122	1.9	156	2.0
123	3.9	158	1.0
125	1.8	159	1.6
126	2.7	162	2.2
127	1.1	165	1.9
129	2.2	167	2.5
131	1.9	169	2.0
132	2.5	170	1.0
134	3.1	171	2.1
136	1.1	173	1.1
139	2.7	175	.8
140	1.5	178	2.1

.8 years. The mean time served was 2.1 years. The amount of time served for the inmate recidivists group ranged from 4.0 to .8. The mean time served for the inmate recidivists group was 1.9 only slightly lower than the inmate group as a whole. Table XIX gives the amount of time served for each member of the recidivists group.

Factor Analysis

A factor analysis program was computed on the 19 variables on both the inmate and the control group. The program used was of the general type and was written in Fortran IV language for computer use (See Appendix A).

Two types of matrixes resulted from the factor analysis. The first was the correlation inverse. This provided a matrix for comparison.

> If a correlation matrix is factored, then the inverse of the correlation matrix is a matrix for comparison. The reciprocal of the diagonal of the inverse is proportional to the squared multiple correlation of each variable with the (m-1) (Rummel, 1970, p. 451).

The second was the factor loading matrices. These are the matrices that give the loadings of variables on factors. There are two major types of matrices, the unrotated factor matrix and the rotated. Among the rotated matrices it is possible for two different types of comparison, the orthogonal and the oblique. The orthogonal was used in this study because between variable comparison was needed.

Factor Loadings and Variables

The factor program reduced the original 19 variables used for both groups down to 5. Table XX indicates factor loads for both the control

TABLE XIX

RECIDIVIST INMATE TYPES OF OFFENSES

Inmate Number	Offenses	Inmate Number	Offenses
104	1	141	3
105	1	142	1
108	1	144	1
109	1	148	3
110	1	151	1
111	1	153	2
113	1	154	1
117	1	155	1
122	1	156	1
123	1	158	1
125	1	159	1
126	1	162	3
127	1	165	4
129	1	167	2
131	1	169	1
132	4	170	1
134	2	171	1
136	1	173	1
139	1	175	3
140	1	178	1

Legend:

1. Property offenses
2. Personal offenses
3. Alcohol and Drug offenses
4. Sexual and Family offenses

and inmate group. The table represents the original variable order of the loadings of the maximum variance. The first group is the control group and the second is for the inmate group.

From Table XX we can see that for the inmate group variables F, Hs, D, Hy, Pd, Pa, Pt, Sc, and PIL clearly are loaded on the first factor. According to Rummel (1970), anything below .35 is considered weak and shows too much communality to be interpreted with much meaning. If we square the loading for each one that is .35 and above we can tell how much variance is accounted for by Factor I on each of the variables. If we square .7218 we get .52100 or 52% of the variance in variable 1 which is accounted for in Factor I. Thus in order we have: (1) F .52; (2) Hs .56; (3) D .66; (4) Hy .58; (5) Pd .36; (6) Pa .55; (7) Pt .67; (8) Sc .76; (9) PIL .12. Clearly these nine variables for the inmates constitute a factor which account for over half the variation in each variable, except for the Pd and PIL, which are less than half. Table XXI is a bar graph of the loadings for Factor I of the inmate group.

From Table XX we can see that the control group variables K, F, Hs, D, Pd, Pa, Pt, Sc, Ma, Si, and PIL are clearly loaded on the first factor. If we square the loadings for each one as we did with the inmate group we get: (1) K .18611; (2) F .76149; (3) Hs .56085; (4) D .27061; (5) Pd .50453; (6) Pa .71318; (7) Pt .70829; (8) Sc .87722; (9) Ma .34904; (10) Si .23361; (11) PIL .27752. These 11 variables represent over half of the variance for each variable on 9 of the 11 in the inmate group. The exceptions are K, D, Ma, Si, and PIL. Table XXII is a bar graph of all the variables and their loadings for the control group.

If we compare both the groups and their loadings on Factor I,

TABLE XX

INMATE AND CONTROL GROUP ROTATED FACTOR LOAD

	1	2	3	4	5
		Inmate Factors			
Percentage Variance	26.7964	12.9771	11.5106	9.5032	6.1450
Correction	-.11	.03	.80	-.21	-.18
Validity	.72	-.19	-.31	.38	-.07
Hypochondriasis	.75	-.02	.38	-.10	.20
Depression	.82	-.09	-.05	-.26	.02
Conversion Hysteria	.76	-.06	.35	-.13	.15
Psychopathic Deviate	.60	.14	.03	.01	-.39
Masculine-Feminine	.34	.37	-.24	.09	.42
Paranoia	.74	-.08	-.09	.15	-.03
Psychasthenia	.82	-.03	-.16	.05	-.05
Schizophrenia	.87	-.07	-.16	.20	-.02
Hypomania	.31	.20	-.10	.79	-.03
Social Introversion	-.06	-.08	-.06	-.05	.81
Lie	.08	-.28	.65	-.04	-.07
Purpose in Life	-.36	.24	.54	.44	.05
Education	-.05	.53	.47	.22	.22
Educational Achivement	-.12	.89	.02	.00	-.07
IQ	-.13	.82	.00	-.05	-.09
Race	.00	-.51	.33	.09	-.03
Age	.09	.26	.04	-.75	.03
		Control Factors			
Percentage Variance	29.5248	11.4796	12.3796	8.0973	8.1877
Correction	-.43	.76	.13	.18	-.04
Validity	.84	.11	.05	.21	.22
Hypochondriasis	.75	.20	-.02	-.22	-.28
Depression	.52	.33	-.37	-.21	-.31
Conversion Hysteria	.34	.64	-.05	-.09	-.48
Psychopathic Deviate	.71	-.21	.06	.06	-.23
Masculine-Feminine	.09	.08	.03	.54	-.52
Paranoia	.84	.08	.06	.05	.12
Psychasthenia	.84	-.36	-.15	.01	-.05
Schizophrenia	.94	-.14	-.00	.11	.06
Hypomania	.59	-.29	.34	.22	.30
Social Introversion	.49	-.17	-.46	-.20	-.20
Lie	.13	.81	.06	-.07	.06
Purpose in Life	.53	.18	.07	-.20	.20
Education	-.01	-.08	.14	.70	.06
Educational Achievement	-.07	-.04	-.95	.00	.10
IQ	-.07	-.04	-.95	.02	.12
Race	.02	-.02	-.09	.15	.72
Age	-.26	-.02	.13	-.64	-.19

we note a great deal of similarity and yet some clear differences.

The total variance extracted by 5 roots for the inmate group was 66.93%. Factor I for the inmate group accounted for 26.7964 of the extracted variance which was accounted for by the factor analysis program. The total variance extracted by 5 roots in the control group was 70.18%. Factor I for the control group extracted 30.8523. The percentage of difference between the two groups is little over 4%.

A comparison of loadings on Factor I for both groups shows basically the same loadings in percent of variance accounted for by each of the variables (See Tables XXI and XXII). The variables which showed gross differences (beyond 15%) were K, D, Ma, and Si. The inmate group had less variation in K than the control group. They also had less variation in Ma and Si than the control group. There was more variation in D than the control group.

Thus from the analysis of the Factor I loadings, we can say that the control group was less homogeneous in defensiveness (K) than the inmate group. The control group was also less homogeneous in Hypomania (Ma) and Social Introversion (Si) than the inmate group. On the other hand, the control group was more homogeneous in Depression (D) than the inmate group.

All 6 of the MMPI variables which we found to be significantly different from the control group at the .001 level are present in Factor I for both groups. Those variables which are common to Factor I for both groups which were not found significant by the use of a t-test are the F variable and the Pa variable. We have already noted in this chapter that 12 of the 40 in the recidivists inmate group had elevated F scores and represented all but 1 subject in the inmate group. Also

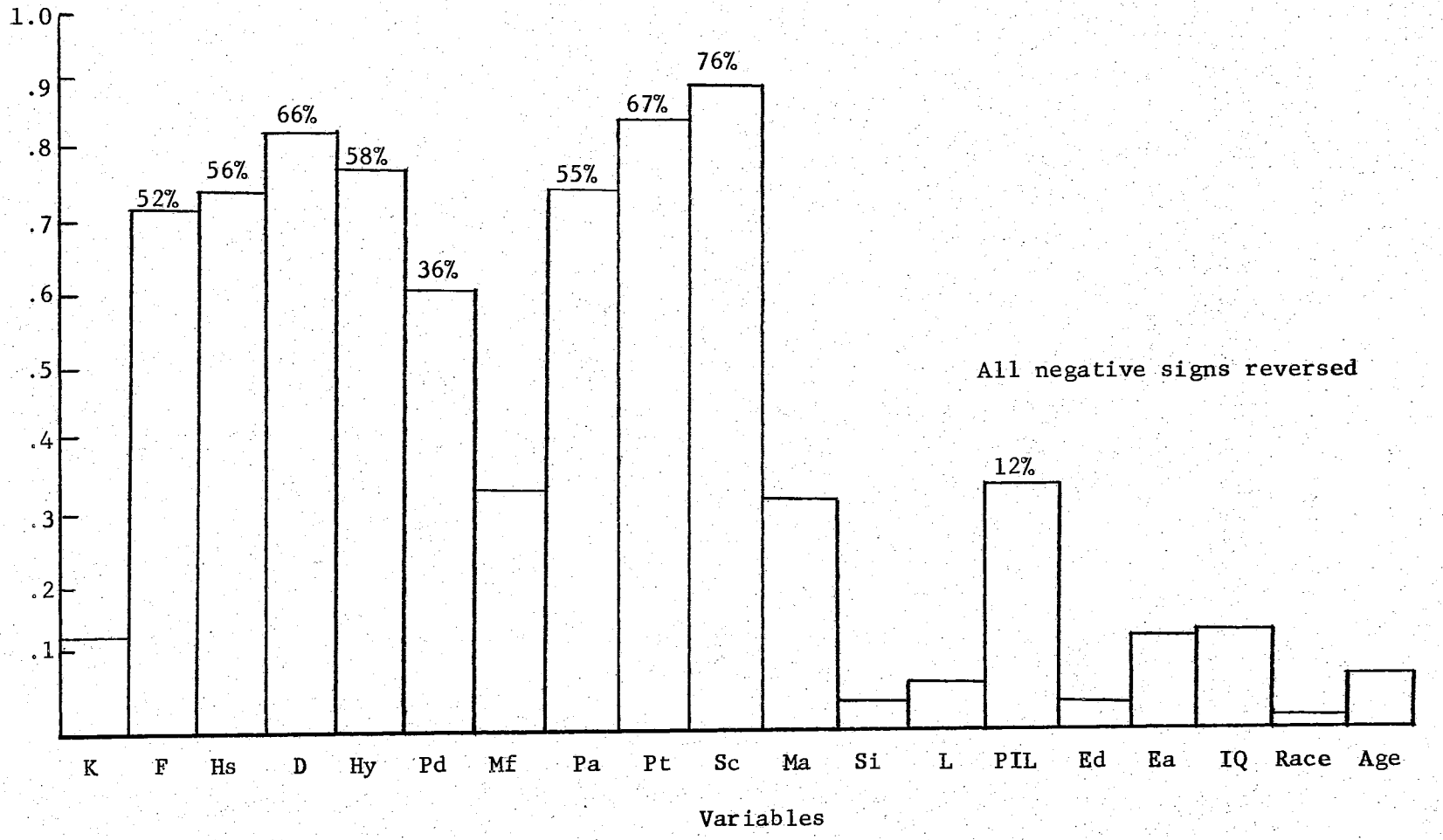

Figure 1. Inmate Group Variance Loadings and Percent of Variance Accounted for by Factor I

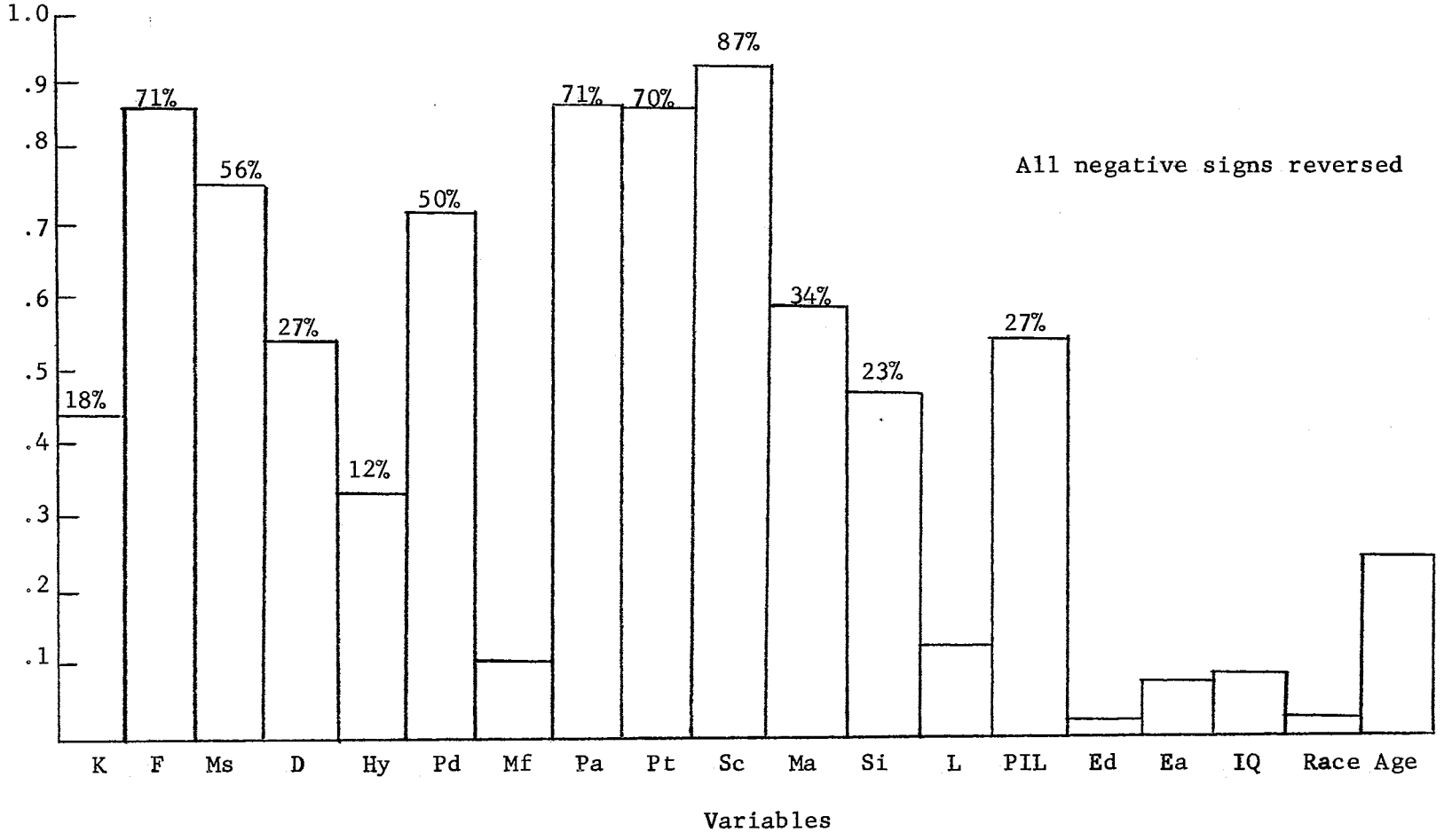

Figure 2. Control Group Variance Loadings and Percent of Variance Accounted for by Factor I

the proportioned z-score showed this to be true for both the F and the Pa.

If we examine the Pa scores of the inmate group, we find that 16 of them have an elevated Pa raw score (15 raw score or 70 T-score). Thirteen of the 16 who have elevated Pa scores are among the 40 recidivsts inmate group.

Previous studies (see Chapter II, p. 15) indicate that recidivists score higher on the F, and Pa. This study did not detect this difference by the use of difference of means test (t-test) but it did detect these differences with the factor analysis program and proportional z-score. Also of interest is the findings from previous studies which show an elevation on the Ma scale with the recidivists group (see Chapter II, p. 15). We did not find this to be true with this group.

Correlations

The scales and values selected for presentation in Table XXIII were chosen from the total number of coefficients resulting from the correlation of every variable with every other variable. Several factors entered into the selection process. Those scales which were -.4333 and above were chosen. Anything below this was considered to be too weak for analysis. Also whether the scales used had t-test significance or not, was a criterion. Also those scales which were found to be significant with the use of the factor analysis and proportioned z-score were used. The scales selected were; F, Pa, Hs, D, Hy, Pd, Sc, Pt, PIL, and Ed.

The F correlates with Depression with a coefficient of .54. It correlates with Psychopathic Deviate with a coefficient of .43 and with Paranoia with a coefficient of .67. It also correlates with Psychasthenia with a coefficient of .58 and with schizophrenia with

TABLE XXI

CORRELATION MATRIX OF TEN SCALES WITHIN THE INMATE GROUP
N=78 (P.01= .28)

	F	Hs	D	Hy	Pd	Pa	Pt	Sc	PIL	Ed
F	1.00	.3765	.5420	.3362	.4333	.6723	.5797	.7536	-.3143	
Hs		1.00	.5181	.8298		.4713	.5108	.5450		
D			1.00	.5942	.4470	.4996	.6611	.6455	-.4333	
Hy				1.00	.4173	.3988	.4942	.4953		
Pd					1.00	.3590	.3746	.4729		
Pa						1.00	.6085			
Pt							1.00	.8194	-.3399	
Sc								1.00	.3135	
PIL									1.00	.4160

a coefficient of .75 and Hypomania with a coefficient of .46.

Hypochondriasis correlates with Depression with a coefficient of .52 with Conversion Hysteria with a coefficient of .83 and Paranoia with a coefficient of .47. It also correlates with Psychasthenia with a coefficient of .51 and Schizophrenia with a coefficient of .54.

Depression correlates with Psychasthenia with a coefficient of .66 with Conversion Hysteria with a coefficient of .59 and with Psychopathic Deviate with a coefficient of .45. It also correlates with Paranoia with a coefficient of .50 and Schizophrenia with a coefficient of .65. It also correlates with Purpose in Life with a coefficient of -.4333.

Conversion Hysteria, Hypochondriasis, Depression, Psychopathic Deviate, Psychasthenia, and Schizophrenia all correlate at .49 and above.

Psychopathic Deviate correlates with the F scale, Depression, Conversion Hysteria, and Schizophrenia at .41 and above.

Paranoia correlates with the F scale, Conversion Hysteria, Depression, Psychasthenia, and Schizophrenia at .47 and above.

Psychasthenia correlates with the F scale, Depression, Hypochondriasis, Conversion Hysteria, Paranoia, and Schizophrenia at .49 and above.

Schizophrenia correlates with the F scale, Hypochondriasis, Depression, Conversion Hysteria, Psychopathic Deviate, and Hypomania at .42 and above.

The PIL correlates with Depression with a coefficient of -.4333 and Education with a coefficient of .4160.

Table XXIV is a list of all of the variables and their correlations

TABLE XXII

NINETEEN VARIABLE INMATE CORRELATION MATRIX

		1 K	2 F	3 Hs	4 D	5 Hy	6 Pd	7 Mf	8 Pa	9 Pt	10 Sc
1	K	1.00	-.3748	.1102	-.0965	.1003	.1536	-.2289	-.1915	-.2186	-.2144
2	F		1.00	.3765	.5420	.3362	.4333	.2064	.6723	.5797	.7536
3	Hs			1.00	.5181	.8298	.2929	.0805	.4713	.5108	.5454
4	D				1.00	.5942	.4470	.2868	.4996	.6611	.6455
5	Hy					1.00	.4173	.2275	.3988	.4942	.4953
6	Pd						1.00	.1613	.3590	.3746	.4729
7	Mf							1.00	.1661	.2082	.2651
8	Pa								1.00	.6085	.2013
9	Pt									1.00	.8194
10	Sc										1.00

TABLE XXIV (Continued)

		11 Ma	12 Si	13 L	14 PIL	15 Ed	16 Ea	17 IQ	18 Rc	19 Age
1	K	-.2734	-.0428	.4604	.3229	.2280	.0721	.0713	.2559	.1253
2	F	.4567	-.0401	-.0963	-.3143	-.1778	-.2256	-.2330	.0424	-.2699
3	Hs	.1116	.0230	.1870	-.0979	.1493	-.1562	-.1071	.0381	.1465
4	D	.0314	-.0163	.1433	-.4333	-.1435	-.1144	-.1847	.0622	.1883
5	Hy	.1165	-.0329	.2387	-.1507	.0477	-.1914	-.1854	.0367	.1014
6	Pd	.2731	-.1468	-.0360	-.1381	-.1233	.0425	-.0238	-.0790	.0561
7	Mf	.2601	.1453	-.1543	-.1539	.1044	.2229	.1504	-.1743	.0048
8	Pa	.2395	.0538	-.0160	-.2673	.0273	-.1512	-.1503	.1143	.0049
9	Pt	.2956	.0519	.0066	-.3399	-.1465	-.1117	-.0670	-.0170	.0047
10	Sc	.4231	.0019	.0215	-.3135	-.1590	-.1496	-.1331	-.0179	-.0863
11	Ma	1.00	.0727	-.1136	.2305	.1314	.0860	.0598	-.0870	-.3666

TABLE XXIV (Continued)

		12 Si	13 L	14 PIL	15 Ed	16 Ea	17 IQ	18 Rc	19 Age
12	Si	1.00	-.0429	-.0668	-.0456	-.0446	-.0320	-.0095	-.0028
13	L		1.00	.1788	-.0384	-.1553	-.1079	.2424	-.0907
14	PIL			1.00	.4160	.1745	.1038	-.0983	-.1156
15	Ed				1.00	.4220	.2891	.0035	.0602
16	Ea					1.00	.8071	-.3107	.1000
17	IQ						1.00	-.2597	.1182
18	Rc							1.00	-.1983
19	Age								1.00

with every other variable.

The one scale which was common to all of the inmate recidivists groups was Psychasthenia. The two scales lease common to the inmate recidivists group as a whole are Depression and Conversion Hysteria.

Psychological Traits

The inmate recidivists in terms of psychological traits had a variety of combinations of these scales. The one scale common to all the inmate recidivists group Psychasthenia (Pt) correlates with all the rest in one manner or another. The most common cluster of traits was six and the least common, eight. Seven inmates had eight various traits as a cluster. These traits and the various combinations constitute the recidivists identity. He is clearly different from the control group and clearly different from his own group.

The demographic information on the recidivists inmate would lead us to conclude that he is in his middle twenties to early thirties, he is more likely to be of the minority races, very sub-standard in education and educational achievement.

The recidivists offender is more apt to be in prison for property offenses, sex-linked crimes, and drugs than for crimes of violence. He has spent anywhere from eight months to six years or more behind bars. The length of his sentence has little, if anything to do with whether or not he returns.

Follow-Up

Thirteen months later a check was made at the prison and with the FBI for those men out of the original 78 who had recidivated.

Out of the 40 predicted to recidivate, 26 were accounted for in the 13-month period. Only one recidivated that was not predicted.

A phi correlation coefficient was calculated and it was .83. This was significant at the .001 level (see Appendix B). The method of predicting recidivists inmates was confirmed.

CHAPTER V

THE PREDICTION OF RECIDIVISM

The purpose of the present study was to determine whether or not the Minnesota Multiphasic Personality Inventory and the Purpose in Life and various demographic variables, held within low levels of fluctuation, would be good predictors of recidivism. Various studies have been done in the past using the MMPI but none have incorporated the PIL and the MMPI. Past studies with the MMPI on inmates have not had a control group that was closely matched with a sub-population taken from the general population. This study is the first to use sub-population characteristics of an inmate population.

The Length of Time Necessary to Measure Recidivism

It is first necessary to determine to what extent recidivism was successfully measured. The follow-up period in the present study was one year following the release of the subjects. Previous studies have frequently used periods of one year or less, but some have used periods as long as 15 years (Glueck and Glueck, 1937). The report that parole revocations and new crimes are committed within the first 6 months by 60% of the violators (Sittler, 1966) is sufficient to establish one year as a reasonable time period under most conditions. We note however, that the majority of those in this study who were predicted to recidivate were not parole violators, or those convicted for new crimes,

and sent back to prison, but were out on bond or in jail waiting trial. Much of the FBI's information was sketchy and incomplete. This is not a fault of the FBI but of the various county court systems sending the FBI the information.

Although this study predicted 40 persons to return within 1 year, we only found 26 of the ones we predicted who were accounted for by the follow-up. Those not accounted for might not have broken the law or had their paroles revoked as a possible explanation for their not being included. It is also possible that the slowness of the courts in processing information through the local police and sheriffs' departments, who then forward this information to the FBI, have kept us from detecting others who have recidivated.

Recidivism and Problems of Definition

The criteria which measured recidivism for this study and hence its definition was twofold. The first criterion was conviction and re-sentencing for a new crime. The second was revocation of parole and/or arrest for a new crime.

An early investigator (Bordin, 1928) commented on the need for more refined and detailed categories of recidivism and parole revocation to which one could predict. These categories would probably include such factors as the number of times a subject was reconvicted, the type of crime committed, the illegal activity which did not result in further incarceration or parole violation, and other factors which would probably require a longer follow-up period and a much greater number of subjects to evaluate. As the number of subjects and the time period of the follow-up is augmented, of course, the accuracy of

the information obtained is usually decreased.

Attempting to include a large number of subjects leads to another problem that has not been sufficiently discussed. Where does one find the subjects? If one uses both parolees and dischargees released within a relatively long time period, e.g. three years, as some investigators have done, results may be confounded due to changes in the institutional policies, in criteria used by courts to select inmates for the institution, and in the policy and/or membership of the board or commission selecting candidates for parole. An alternative to this approach would be to use parolees and dischargees from several different institutions released within a shorter time, and some authors have utilized this technique. Here however, differences in institutional treatments or in the character of inmates selected for placement by the court or commission in a particular institution may result in variations in recidivist outcomes which are not attributable to the various variables with which this study focuses.

It is not surprising that the Gluecks (1946) concluded " . . . one despairs of ever being able to solve such a problem." The difficulty is that it is nearly impossible to sort out and control all the sources of variability that may influence the recidivists adjustment or post-institutional release.

It was felt that although some of the subjects predicted to recidivate were waiting trial and not yet convicted for a new crime that their involvement and arrest for a new crime was sufficient criteria to list them as recidivists.

Hypotheses Tested

It was hypothesized that there would be specific differences between the inmate population and control group as measured by the MMPI. This was confirmed. In comparisons with the total raw score means those scales not significantly different were: (1) Correction (K), (2) Masculine-Feminine (Mf), (3) Hypomania (Ma), (4) Social Introversion (Si), and (5) Lie (L).

Eight scales were different. Six of these scales were found to be significantly different at the .001 level by the use of the t-test and these same 6 were confirmed by the Factor Analysis. Five of the six, all but the Pd, were confirmed by the proportional z-score to have differences within the group.

Two of the MMPI scales which were not identified by the t-test were the F and Pa. These were found to be significant by the factor analysis method and also by the proportional z-score. Thirteen subjects in the inmate group had elevated F scores. All but one of these was included in the inmate recidivists group. Sixteen in the inmate group had elevated Pa scores. Fourteen out of the 16 were among the recidivists group.

Since the MMPI is used clinically, patterns of scores are interpreted on the basis of elevations of scales as patterns of clusters. An attempt was made to analyze the profile configurations to detect differences between the recidivists and non-recidivist inmate group. When the scales were analyzed according to departures from the mean (z-scores) and by the use of correlations among variables, the recidivists showed a variety of patterns and correlations as well

as a variety of z-score differences on 11 variables.

Three of the inmates out of the 40 predicted to recidivate had correlations on 10 of the 11 variables found to be significant. Two of the inmates had correlations on 9 of the variables, 2 on 8 of the variables, 8 on 7 of the variables, 12 on 6 and the remaining on 5. The variety of variables and the various patterns which these variables cluster around are indicative of not one single syndrome which would indicate recidivist patterns but a variety of patterns and a mixture of different variables for the individual.

The scales which were least common to all members of the recidivists group were the D and the Hy scales. Fifteen members were not one standard deviation above or below the mean on either one or both of the two scales. Twenty-five of the 40 either had z-scores below the mean on both these scales or no difference at all. The correlation for the D and the Hy is .59. The D and the Hy scales are more indicative of neurotic and psychotic manifestations as compared to Pd, Pa, Sc scales which is indicative of character disorders. The inmates tend to be more character disorder oriented than neurotic or psychotic.

The next two scales least common to all members of the recidivists group were the Ed and the PIL. Thirteen members of the recidivists group were not one standard deviation or more above or below the mean on education. Twelve members in the group were not one standard deviation above or below the mean on the PIL. Seventeen members out of the 40 were different on these 2 scales. The correlation coefficient for these two scales is .42. Purpose in life and education are characteristics of recidivists in general but they do not in and of themself indicate recidivism. These two factors are present in some

who do recidivate both in combination or alone.

Sixteen members of the 40 were matched on D, PIL, and Ed. For example, if inmate 178 had a -1.86 z-score on D, he had a 3.70 on the PIL and 1.18 on education. The coefficient of correlation of the PIL with D is -.43 and with education .42.

The next two scales which were least common to the whole group were the Pd, and the Sc. All but six members of the recidivists group were more than one standard deviation or more above or below the mean on the Pd scale. All but five members were more than one standard deviation or more above or below the mean on the Sc scale. Eleven of the 40 were different on these 2 scales. The coefficient of correlation for these 2 scales is .47.

Nine of the 40 were matched on D, PIL, Ed, Pd, and Sc.

The next scales the least common to the whole group was the Hs. All but two members were more than one standard deviation or more above or below the mean.

The most common to the whole group was the Pt scale. Every member of the inmate recidivists group were one standard deviation or more above or below the mean. Thirty-eight of the 40 held the Hs and the Pt in common. The coefficient of correlation for the Hs and the Pt is .5108.

Seven of the inmates out of the 40 were matched on D, PIL, Ed, Pd, Sc, Hy, Hs, and Pt.

The 2 scales not part of the t-score findings the F and Pa correlate at .6723. Ten of the 40 held the F and Pa in common.

These eight MMPI scales plus the PIL and Ed in their various combinations constitute a recidivists inmate profile.

Elevations independent of scale combinations were considered. The hypothesis that the recidivists would produce more profiles with T scores of 70 and above was confirmed. T score elevation above 70 independent of any one profile indicates that there are a number of scales in the MMPI which indicate extreme scores on scales which do not have a typical diagnostic pattern. A person can be both extreme on depression and hypomania as indicators of recidivist behavior but as a diagnostic clinical syndrome it might not make any clinical sense as we now understand these scales to operate.

It appears that the MMPI is sensitive to differences between recidivists and non-recidivists. Mean scores on the Validity (F), Depression (D), Conversion Hysteria (Hy), Psychopathic Deviate (Pd), Paranoia (Pa), Psychasthenia (Pt), Schizophrenia (Sc), Purpose in Life (PIL), and Education (Ed) are all relatively high. This would lead us to believe that these characteristics and their various combinations indicate both a social and a psychological combination which identifies the criminal recidivist. Thus there is constellations of characteristics which characterizes the recidivist.

Identifying Characteristics Descriptions

The characteristic descriptions of the inmate recidivists would be those who are in their mid-twenties to mid-thirties. Most would have no more than a seventh to ninth grade education. Their educational achievement would be less than the seventh grade. They would have mean I.Q. less than 90. There would be a larger proportion of minorities represented. They would be persons who were convicted mostly for property offenses. Sexual and drug related offenses play

a minor role, but are confined to this group. They would be persons who had less meaning and goals in their life and showed a variety of psychological characteristics in combination which were beyond normal for their group or a sub-population like their group.

Trait Descriptions of Recidivists Group in General

One convenient method of describing and summarizing the important psychological uniformities running through the basic scales of the MMPI has been suggested by Diamond (1957). His chart adapted for this particular research (Table XXV) provides a convenient scheme for outlining the nine personality characteristics that may operate in various combinations in the clinical scales. Looking first at the horizontal pairings, Diamond (1957) pointed out that an activity dimension is reflected at one extreme by Depression and at the other by Hypomania. Similarly, the Psychasthenia and Psychopathic Deviate scales deal with opposite ends of a personal conscience dimension. Hysteria occupies one end of a social friendliness and suggestibility continuum while Paranoia treats with the opposite attributes of hostility and negativism. The communality relating the Hypochondriasis and Schizophrenia scales is not so apparent; but Diamond suggested that the former reflects the use of somatic symptoms to tie others to oneself by means of emotional bonds, while the latter scale deals with the withdrawal from social relationships.

Diamond also suggested that the vertical groupings show additional psychological dimensions important in personality descriptions. Thus, Depression and Psychasthenia have in common a tendency to self-blame, while Hysteria and Hypochondriasis reflect a common feature of self-pity.

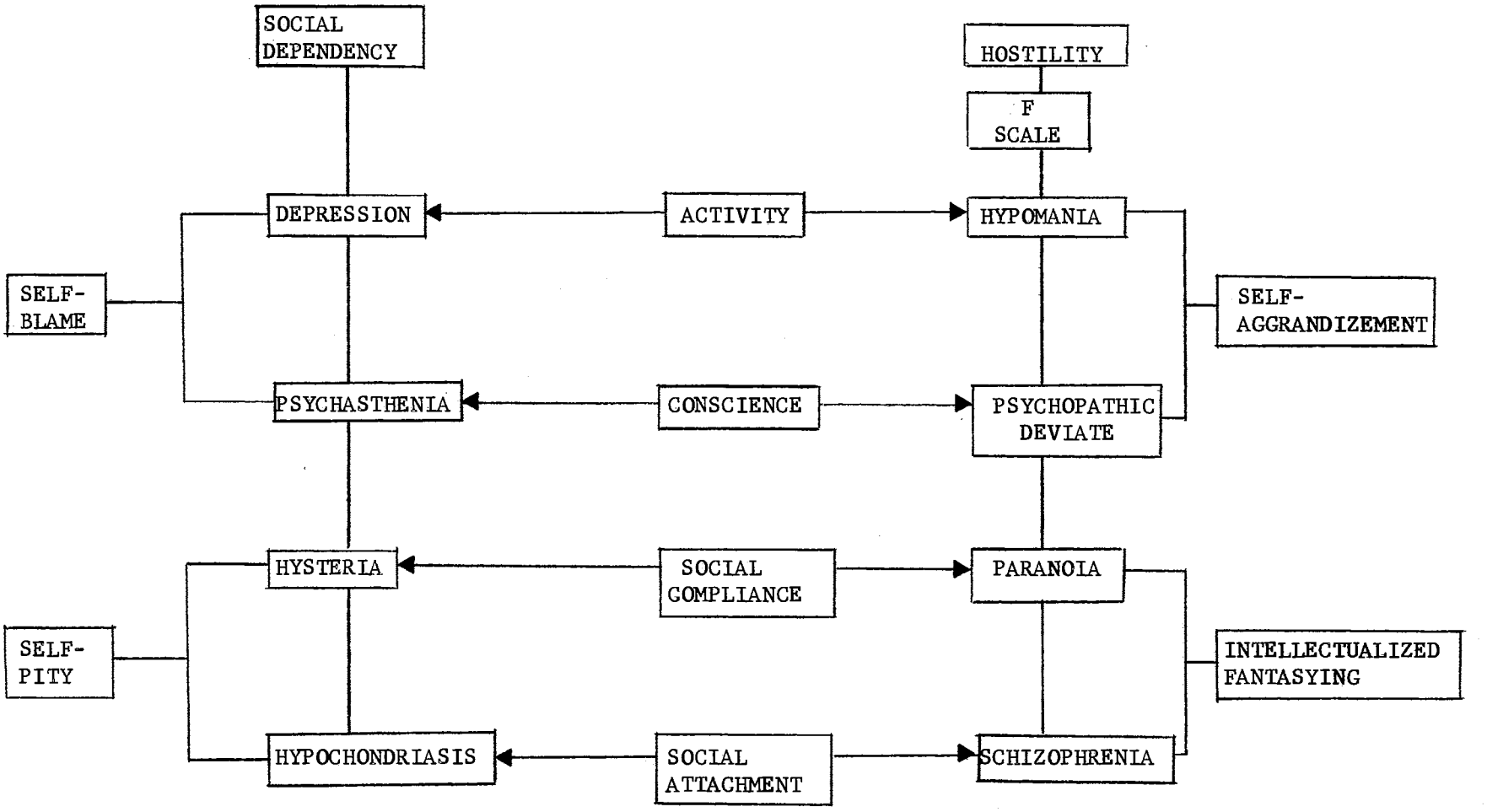

Figure 3. Scheme of Psychological Dimensions Appearing in the Criteria of the Basic MMPI Scales (adapted from Diamond, 1957)

Psychopathic Deviate and Hypomania both deal with self-aggrandizement. The scales Schizophrenia and Paranoia reveal a dependence upon intellectualized fantasies. The four scales at the left all have in common strong social dependency, while the five at the right deal with some form of hostility or aggression.

Factor Analytic Findings

In his review of the factor studies carried out before 1954, Welsh (1956) pointed out that all analyses had identified at least two main sources of variance running through the basic clinical scales on the MMPI. In his own work, the first major source of variance was identified as Factor A, having high loadings from scales Pt and Sc and high but negative loadings from the K scale. This source of variance appears to be personal discomfort or distress. Welsh described it as anxiety, or general emotional upset. One writer (Morris, 1947) working with mean profiles of diagnostically heterogeneious groups has indicated that the only source of variance in the MMPI profile is a general degree of disturbance. From the pervasiveness of the variance in Factor A, it appears likely that averaging out other variations in such group comparisons will leave only this variation in the mean profiles.

Welsh (1956b) labeled the second source of variance that he identified in the basic scales of the MMPI as Factor R. This factor seemed to correspond closely to the findings of previous workers. The first three scales L, F, K, all showed moderate loadings on Factor R, with scale Pa having a moderate but negative loading. This source of variance appeared to relate to a dependence upon mechanisms of denial and rationalization and to a lack of effective self-insight.

> By means of A and R scale combinations, Welsh (1956) has shown that groups can be formed with considerate homogeneity in code and profile patterns. This homogeneity reflects the amount of variance in the basic scales themselves that is summarized in these two scales. However, there remains a large amount of important variation in each of the clinical scales that is common to some but not all of the other scales in the test. These sources of variation cannot be ignored in the utilization and interpretation of the regular MMPI profiles (Dahlstrom and Welsh, 1965, p. 85).

Anxiety and Repression

On the basis of A and R, the entire inmate recidivist group may be described as predominantly in the direction of behavior and character disorder with low levels of experienced anxiety. There is a marked absence of psychosis and anxiety neurosis. For the most part, the recidivists group manifest more lower A and R combinations which denote less neurotic and psychotic types and more character and behavior disorders. Both the Depression and Conversion Hysteria scales bear this out. These were the two scales less associated in the inmate recidivist group.

A General Etiology of a Variety of Characteristics Within Criminal Milieu

Beginning with childhood, dependency, and deprivation of warmth and interpersonal affection are developed within the family. Serious conflicts with authority emerged as the recidivist inmate resisted society's demands for conformity through aggressive, overt forms of behavior that came to the direct and immediate attention of parents, police and school authorities. Many carried this pattern far enough to be expelled from school, they showed little desire for achievement,

lacked a formation of goals and purposes for their life. The typical learning process as they experienced it, or, perhaps, refused to experience it, offered little, if any, gratification. Even when it was gratifying, other matters took precedence, such as the search for a "family" through the gang. The sources of behavior control were often experientially externalized so that they made poor connections or none at all between what they had done and what was happening to them. Through various manipulative strategies, they managed to get others involved with them were often "successful" but not for a self-enhancing outcome. Their sense of autonomy seemed either ultimate within or ultimate without, and a mid-range of compatibility with persons of authority seemed impossible to achieve.

An integral part of similar difficulties is a tendency to misperceive or purposely misconstrue certain interpersonal situations and their roles in them. The individuals in this group seem to perceive other people as a potential "audience" which exists primarily for their use. This strategy provides them distance from close interpersonal involvement with others and serves the purposes of avoiding real intimacy and potential psychic injury. These individuals are prone to dominate a situation, arousing adverse reactions from others.

Furthermore, members of the recidivist group deny that their way of doing things is apt to be misunderstood by others. Very often, however, it is misunderstood. At the same time, the members of the reconvicted group seem overly eager to perceive others as being excessively critical of them and prone to judge them, to evaluate them negatively, to criticize and to punish them for things which, from their vantage point, are quite trivial.

The recidivists group's ability to appraise themselves and their achievements, potential and actual, is fragmentary and ineffectual. Their views of their potential worth appear to be inflated, and they affirm the tendency to believe in "chance" as the source of their inability to achieve that which they want or feel they should achieve. Some view their "good ideas" as being of little worth or non-existent, while others tend to greatly overestimate the value which others might place on their "good ideas." They deny that their hardest battles are with themselves. This denial is suggestive of a number of trends toward unrealistic self-appraisal and certain moral issues in our society at the behavioral level, are denied and by inference, are not experienced as a part of the self.

The recidivists group in general would manifest persons who would be very rigid in situations that require role-taking and conflict of wills. They insist that their way is the only way or the best way. Many recognize and experience few alternatives in solving problems. In the absence of experiential alternatives, they seek to impose their single-final solution on the conflict situation.

The Time Periods and Recidivism

It was felt, that an averaging of the z-scores on the variables that each inmate was one standard deviation above or below would indicate when one would recidivate. The rationale being that the further one departs from normality the faster one will behave in a manner that will constitute an act which will cause one to recidivate. This was not confirmed by the research. Only 6 of the 26 returned as predicted. There seems to be no pattern indicated in the time it took them to

recidivate. Possible explanations for this are numerous. To mention only a few; a person could have been committing acts against the law and they were not detected until a later time than when he was predicted to return. Three month time periods as points of separation, are too gross, or not gross enough. Personality factors do not determine when a person will recidivate, only that he will. Perhaps the scale position are not a measure of intensity of the drive to resume old patterns of behavior. These as well as others could be possible explanations.

CHAPTER VI

SUMMARY

The present study was an attempt to discover relationships between the Minnesota Multiphasic Personality Inventory (MMPI) response patterns and individual elevated scales of offenders and their scores on the Purpose in Life (PIL) and their post-institutional successes and failures in adjusting to society. It was the general premise that post-institutional adjustment is partially a function of personality and character structure.

Theoretically, the base for the problem researched was rooted in the nature of personality development and the social milieu which acts as a nexus for generating criminal behavior and personality development.

The two areas which were concentrated on in this study in terms of elements of personality significant for exploration of criminal recidivist behavior were traits and attitudes especially the existential attitude of purpose in life.

Seventy-eight inmates and 90 control group members completed the MMPI and the PIL. Selected demographic variables were controlled. The test data were analyzed in terms of group mean scale differences (t-test), z-scores, variance, factor loadings, and correlations among the scales. The factor loadings and correlations were computed by means of a factor analysis procedure using a computer program.

Recidivists were also expected to have more profiles with scores

above T=70. Thus elevations were looked at independent of any one or group of scales.

One year after the release of 78 inmates a follow-up study was undertaken to determine if the inmates predicted to recidivate had returned to prison, or had their parole revoked, or were waiting trial for a new offense.

Nineteen of the 40 inmates predicted to recidivate had either returned to prison, had their parole revoked, or were waiting trial for a new offense. One not predicted to recidivate was back in prison for parole revocation.

A Phi coefficient was computed and determined to be .83. This was significant at the .0001 level of confidence.

Significant differences between the control group and the inmate group on eight MMPI scales were determined. Six of these were found to be significant by the use of a t-test at the .001 level. The other two were determined by factor loading of variance and proportional z-scores.

The eight MMPI scales which were significantly different from the control group were: (1) Validity (F), (2) Paranoia (Pa), (3) Hypochondriasis (Hs), (4) Depression (D), (5) Conversion Hysteria (Hy), (6) Psychopathic Deviate (Pd), (7) Schizophrenia (Sc), (8) Psychasthenia (Pt). A variety of constellations of these scales plus the PIL and Education were used to predict who would recidivate and when he would recidivate.

We predicted that each MMPI scale and the PIL scale would be different from the mean of the control group and the average of the z-scores would be indicators of who would recidivate and when they would

recidivate. The scales which were not different and therefore no z-scores differences were the Hypomania (Ma), Social Introversion (Si), Masculine-Feminine (Mf), Correction (K), and Lie (L). These scales were not good indicators of recidivism. The rest of the scales were good indicators of recidivism.

The findings on when they would recidivate are not conclusive. Only six came back about the time they were predicted to return.

It was also predicted that there would be no difference in the mean of the Validity (F), Psychopathic Deviate (Pd), Paranoia (Pa), Schizophrenia (Sc), and Hypomania (Ma), scales for recidivists. It was predicted they would be higher on these scales than the non-recidivists. It was further predicted that the non-recidivists would be lower on Hypochondriasis (Hs), Depression (D), Conversion Hysteria (Hy), and Social Introversion (Si), scales.

This was not confirmed by the research. The recidivists were higher on a combination of the Validity (F), Paranoia (Pa), Psychopathic Deviate (Pd), Schizophrenia (Sc), Hypochondriasis (Hs), Depression (D), Conversion Hysteria (Hy), and the Psychasthenia (Pt). No difference was found on the Hypomania (Ma), or the Social Introversion (Si).

It was also predicted that a constellation of characteristics would be indicators of recidivism.

Also it was predicted that the recidivists would show more profiles with T-scores of 70 and above. This was shown to be true. Twenty-eight of the 40 did show elevations of T-scores for the recidivists and 12 out of 38 for the non-recidivists.

Limitations of the Study

This study was limited in the length of the follow-up. A two-year period would have been preferred. The longer period of time would have allowed for a more accurate count of those who recidivated.

The study was also limited to predictions made of this particular group. The patterns which were established for recidivist behavior may not carry over to other groups at different periods of time under different circumstances.

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APPENDIX A

COMPUTER PROGRAMS

FACTOR ANALYSIS PROGRAM ON AUTHENTIC DATA
Veldman (1967)

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      DIMENSION KF(20), R(40,40), V(40,40), W(40,40), X(40), Y(40),
     1 Z(40, KS(40), A(40),S(40)
      ND=40
    5 CALL CCDS (KF, NV, NS, KA, KB, KC)
      K11=KA/10000
      K12= MOD (KA/1000,10)
      K13= MOD (KA/100,10)
      K14= MOD (KA/10,10)
      K15= MOD (KA,10)
      KEV=KB/1000
      K18= MOD (KB/100,10)
      K19= MOD (KB/10,10)
      K20= MOD (KB,10)
      K21= KC/10000
      K22= MOD (KC/10000,10)
      VN=NV
      CALL CORS (NS, NV, R, A, S, KF, ND)
      CALL PRTS (A, NV, 1, 'MEAN', 'S.__', ND)
      CALL PRTS (S, NV, 1, 'SIGM','AS._', ND)
      IF (K13 .EA. 1) CALL PRTS (R, NV, NV, 'r_MA','TRIX', ND)
      PRINCIPAL-AXIS ANALYSIS.
      NF=NV
      C=KEV
      IF (KEV .LE. 1) GO TO 90
      NF=KEV
   90 CALL SEVS (NV, NF, C, R, V, X, Y, ND)
      CALL PRTS (X, NF, 1, 'EIGN','ROOT', ND)
      CALL PRTS (Y, NF, 1, 'PC_T','RACE', ND)
      IF (K18 .EA. 1)CALL PRTS(V, NV, NF, 'P_AX','LOAD', ND)
      COMPUTE PRINCIPAL-AXIS FACTOR-SCORE WEIGHTS.
      DO 95 J= 1,NF
      DO 95 I = 1,NV
   95 R(I,J)=V(I,J(/X(J)
      IF (K19 .EQ. 1) CALL PRTS (R, NV, NF, 'PRAX','_WTS', ND)
      IF (K19 .EQ. 1) CALL PRTS (R, NV, NF, 'PRAX','_WTS', ND)
  130 DO 135 J = 1,NF
      DO 135 I = 1,NV
  135 R(I,J)=R(I,J)/X(J)
      CALL AXBS (R, V, W, NV, -NV, NF, ND)
      VARIMAX ROTATION OF PRINCIPAL AXES.
      CALL VORS (NV, NF, V, X, Y, Z. ND)
      CALL PRTS (X, NF, 1, 'PCT_','VAR.', ND)
      CALL PRTS (Y, NV, 1, 'PCT_','COMM', ND)
      IF (K21 .EQ. 1) CALL PRTS (V, NV, NF, 'VMAX','LOAD', ND)
      IF (K22 .EQ. 1) CALL PRTS (R, NV, NF, 'VMAX','_WTS', ND)
      COMPUTE VARIMAX FACTOR-SCORE WEIGHTS AND FACTOR SCORES.
      CALL AXBS (W, V, R, NV, NF, NV, ND)
      GO TO 5
      STOP
      END
```

t-TEST AND INMATE z-SCORE TEST AND SELECTION OF INMATE RECIDIVISTS GROUP COMPUTER PROGRAM

```
    5=DATT,UNIT=READER,RECORD=10
    6=PR,UNIT=PRINTER

    DIMENSION A( 100,20),B(100,25)
 2  FORMAT(F3.0,13F2.0,F3.0,F2.0,F3.1,F3.0,F1.0,F2.0)
 3  FORMAT(F3.0,13F2.0,F3.0,F2.0,F3.1,F3.0,F1.0,F2.0)
    READ(5,2)((A(I,J),J=1,20),I=1.91)
    READ(5,3) ((B(I,J),J=1,20),I=1,78)
    DO 4 J=2,20
    QSUM=0.0
    CSUM=0.0
    PSUM=0.0
    ZSUM=0.0
    DO 5 I=1,91
    QSUM=QSUM + A(I,J) * A(I,J)
 5  CSUM = CSUM + A(I,J)
    DO 6 I= 1,78
    PSUM=PSUM + B(I,J)
 6  ZSUM = ZSUM + B(I,J) * B(I,J)
    CMEAN=CSUM/91.
    SDC=(QSUM/91,-CMEAN**2)**.5
    A(92,J)=CMEAN
    A(93,J)=SDC
    PMEAN=PSUM/78,
    SCSUM=CSUM*CSUM
    SPSUM=PSUM*PSUM
    TOP= CMEAN-PMEAN
    BOTT=((QSUM/91.-CMEAN**2(/91.+(ZSUM/78.-PMEAN**2(/78.)**.5
    T= TOP/BOTT
 4  WRITE(6,9) J, CMEAN, PMEAN, T
 9  FORMAT (1X,"CASE NUMBER", 15," CONTROL MEAN = ", F6.2,
    1"PRISON MEAN = ",F6.2," COMPUTED T = ", F6.2)
    WRITE (6,11) (J,J=1,9)
11  FORMAT(  "1",26X,9I8)
    DO 20 I=1,78
    KT=0
    DO 18 JJ=4,12
    J=JJ+2*(JJ/8)+3*(JJ/10)
    IF(B(I,J).GT.A(92,J(+A(93,J(( GO TO 12
    IF(B(I,J) .LT.A(92,J)-A(93,J))  GO TO 12
    GO TO 17
12  KT=KT+1
    A(94,J)=(A(92,J)-B(I,J))/A(93,J)
    GO TO 18
17  A(94,J)=0,
18  CONTINUE
    IF(KT.GT,4) WRITE(6,19)B(I,1),(A(94,J),J=4,7),(A(94,J),J=10,11),
    1(A(94,J),J=15,17)
```

```
19   FORMAT(  "  INMATE NO  ",F5.0,"  Z SCORE  ",9F8.3)
20   CONTINUE
     STOP
     END
```

APPENDIX B

TESTS AND STATISTICAL FORMULAS

THE PURPOSE IN LIFE TEST

For each of the following statements, circle the number that would be most nearly true for you. Note that the numbers always extend from one extreme feeling to its opposite kind of feeling. "Neutral" implies no judgment either way. Try to use this rating as little as possible.

1. I am usually:

1	2	3	4	5	6	7
completely bored			(neutral)			exuberant enthusiastic

2. Life to me in general seems:

7	6	5	4	3	2	1
always exciting			(neutral)			completely routine without meaning

3. In life I have:

1	2	3	4	5	6	7
no goals or aims at all			(neutral)			very clear goals and aims

4. My personal existence is:

1	2	3	4	5	6	7
utterly meaningless without purpose			(neutral)			very purposeful and meaningful

5. Everyday in life:

7	6	5	4	3	2	1
is constantly new and different			(neutral)			exactly the same

6. If I could choose, I would:

1	2	3	4	5	6	7
prefer never to have been born			(neutral)			like nine more lives just like this one

7. After I finish my schooling:

7	6	5	4	3	2	1
I am going to do some of the exciting things I have always wanted to do			(neutral)			I will be loafing without purpose

8. In achieving life goals I have:

1	2	3	4	5	6	7
made no progress whatever			(neutral)			progressed to complete fulfillment

9. My life is:

1	2	3	4	5	6	7
empty, filled only with despair			(neutral)			running over with exciting good things

10. If I should die today, I would feel that my life has been:

7	6	5	4	3	2	1
very worthwhile			(neutral)			completely worthless

11. In thinking of my life, I:

1	2	3	4	5	6	7
often wonder why I exist			(neutral)			always see a reason for my being here

12. As I view the world in relation to my life, the world:

1	2	3	4	5	6	7
completely confuses me			(neutral)			fits meaningfully with my life

13. I am a:

1	2	3	4	5	6	7
very irresponsible person			(neutral)			very responsible person

14. Concerning man's freedom to make his own choices, I believe man is:

7	6	5	4	3	2	1
absolutely free to make all life choices			(neutral)			completely bound by limitations of heredity and environment

15. With regard to death, I am:

7	6	5	4	3	2	1
prepared and unafraid			(neutral)			unprepared and frightened

16. With regard to suicide, I have:

1	2	3	4	5	6	7
thought of it seriously as a way out			(neutral)			never given it a second thought

17. I regard my ability to find meaning, purpose, or mission in life as:

7	6	5	4	3	2	1
very great			(neutral)			practically none

18. My life is:

7	6	5	4	3	2	1
in my hands and I			(neutral)			out of my hands and controlled by external factors

19. Facing my daily tasks is:

7	6	5	4	3	2	1
a source of pleasure			(neutral)			a painful and boring experience

20. I have discovered:

1	2	3	4	5	6	7
no mission or purpose in life			(neutral)			clear-cut goals and a satisfying life purpose

STATISTICAL FORMULAS

t-test Formula

$$SN_1-M_2 = \frac{SS1 + SS2}{N1 + N2-2} \quad \frac{1}{N1} + \frac{1}{N2}$$

z-score

$$Zi = \frac{Xi-M}{Sigma}$$

Proportional z-score

$$Z = \frac{P_1 - P_2}{PQ \ \frac{1}{N1} + \frac{1}{N2}}$$

$$Phi = \frac{bc - ad}{(a+b)\ (c+d)\ (a+c)\ (b+d)}$$

$$F = \frac{MSb}{MSW}$$

VITA

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Doctor of Philosophy

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