A COMPARATIVE-DESCRIPTIVE STUDY OF SIXTY INCARCERATED....

J. Walter, 1968

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A COMPARATIVE-DESCRIPTIVE STUDY OF SIXTY INCARCERATED CRIMINALS UTILIZING THE VARIABLES OF PERSONALITY AS MEASURED BY THE SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTIONS

James I. Walter

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A COMPARATIVE-DESCRIPTIVE STUDY OF SIXTY INCARCERATED CRIMINALS UTILIZING THE VARIABLES OF PERSONALITY AS MEASURED BY THE SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTIONS

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THESIS ABSTRACT

A COMPARATIVE-DESCRIPTIVE STUDY OF SIXTY INCARCERATED CRIMINALS UTILIZING THE VARIABLES OF PERSONALITY AS MEASURED BY THE SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTIONS

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The purpose of this study was to identify and compare personality factors, as measured by the Sixteen Personality Factor Questionnaire--Form A, of a sample group of 60 prisoners incarcerated in Draper Correctional Center, Elmore, Alabama. The variables of reading scores, age, time in prison and number of disciplinary actions were also used to determine differences among the prisoners. The total sample group was subdivided into four subgroups of 15 subjects each of student first offenders, student recidivists, non-student first offenders and non-student recidivists. The Sixteen Personality Factor Questionnaire was used as an instrument to obtain the following information:

1. Are there differences in the Sixteen Personality factor raw score means (1) among the four Draper subgroups of student first offenders, student recidivists, non-student first offenders and non-student recidivists; (2) between students and non-students; (3) between first offenders and recidivists?
2. Are there differences in the Sixteen Personality factor raw score means between the total Draper sample and (1) the general population norm of males and (2) the clinical profile of convicted male criminals in prison?
3. What is the relationship between the Sixteen Personality factor raw score means and (1) ages of the total sample, (2) time in prison, (3) disciplinary actions and (4) reading scores?
4. Can the independent variables of Sixteen Personality factor raw score means, age and reading scores predict (1) student versus non-student status, (2) first offender versus recidivist status, (3) time in prison and (4) disciplinary actions?

The 60 subjects were each administered the 16 PF during a two weeks period. Only prisoners who had scored a 7.0 grade level equivalent score or above on reading tests were permitted to serve as subjects.

Significant differences were found among the four Draper subgroups on the following 16 PF scales: B (intelligence), C (affected by feelings-emotionally stable), E (humble-assertive), I (tough minded-

tender minded), L (trusting-suspicious) and Q_4 (relaxed-tense). No significant differences were found on 16 PF scales between students versus non-students nor between first offenders versus recidivists.

Significant differences were found between the total Draper sample and the general population norm of males on the following 16 PF scales: C, F (desurgent-surgent), G (expedient-conscientious), L, N (forthright-shrewd), O (placid-apprehensive), Q_1 (conservative-experimenting), and Q_4.

Significant differences were found between the total Draper sample and the clinical profile of convicted male criminals in prison on the following 16 PF scales: B, C, E, F, I, N, O, Q_1 and Q_3 (undisciplined self conflict-controlled).

Correlation coefficients indicated the following relationships: a positive relationship between the 16 PF scale G and age; a negative relationship between I and age; a negative relationship between I and time in prison; a positive relationship between I and reading scores; a negative relationship between O and reading scores. Disciplinary actions were not related to the 16 PF scales.

The independent variables 16 PF raw scores, age and reading scores did predict first offender versus recidivist status and time in prison but did not predict student versus non-student status nor number of disciplinary actions.

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I. INTRODUCTION

It now seems generally true that the emphasis in penology in the United States has shifted from punishment only of the criminal offender to more concern for his rehabilitation (Toby, 1964; Glaser, 1966). As a recent study stated, "No expose of prison scandal and prisoner abuse is as dramatic as the revelation of the aims and methods of the new penology, whereby the rehabilitation of society and the convicted felon is pursued by dedicated individuals within a framework of treatment designed to effect a social cure from 'within and without' the asocial member of society" (Stahl, 1965 p. 174).

Evidence of this apparent growing concern for the rehabilitation of the criminal is reflected in current attitudes toward capital punishment, which may be thought of traditionally as the apex of punishment. A recent study indicated the existence of a significant worldwide trend toward decreasing the use of capital punishment (Patrick, 1965).

Experimental psychology presented evidence thirty years ago which indicated that, although punishment can and does suppress a response, by itself punishment is an ineffective way to control or eliminate the behavior of the punished organism (Skinner, 1938).

There are at least three ways in which punishment is utilized in modern American society (Appel and Peterson, 1965). The first

way suggested by these authors is to re-assert legal, ethical and/or moral principles; second, to deter others from committing an offense; third, to suppress an individual's disposition to behave in a certain manner.

In the first two examples punishment is used to promote the welfare of the punishing agency with no benefit to the punished person either implied or intended. The third example presupposed that such treatment can modify the behavior of the punished individual in such a way that will make him a more socially desirable person. However, punishment used alone is likely to create avoidance and escape behaviors, rather than lawabiding behavior; punishment must also be applied near the time of the occurrence of the forbidden act, if it is to be effective[1] (Jefferey, 1965). Due to such temporal factors as selection of juries, lawyer preparation for defense, testimony of all witnesses and consideration of all relevant evidence it would be practically and judicially impossible to utilize this latter point. Indeed, it is logical to assume that miscarriages of justice would occur more often if punishment was always applied near the time of occurrence of the crime.

If the purpose of American penology is to rehabilitate the criminal rather than to only punish him, then an understanding of the factors related to recidivism must be developed (Arnold, 1965; Mandel et al., 1965a; Laulicht, 1963). The criteria for the adequacy or

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[1] In the case of criminal behavior, "effectiveness" could be defined as decreasing the emission of anti-social behavior and increasing pro-social behavior.

inadequacy of any prison rehabilitation program is finally defined in terms of its recidivists--how many men return to prison after being released (Laulicht, 1962). Criminal behavior needs to be understood in terms of variables which are operating that are associated with recidivism and/or non-recidivism. As Warden John Watkins of Draper Correctional Center (the location of this study) stated: "In a rehabilitative prison setting, as the prisoner acquires an education and learns a trade, he will at some point decide whether he wishes to remain an anti-social convict or a pro-social member of society" (personal communication to the author). Anti-social behavior is exhibited by criminals who continue to recidivate; pro-social behavior is exhibited by those criminals who extinguish their anti-social responses and begin to emit pro-social responses.

A primary problem of studies involving criminal or prison populations is determining critical variables related to the continuation of criminal behavior as manifested by recidivism (Davis, 1964 a; Lytle, 1963 a). Several past studies have indicated a relationship between criminal behavior and certain personality functions (Kanun and Monachesi, 1960; Healy and Bronner, 1936; Walter, 1967). At least one study has indicated a relationship between criminal behavior and educational aspirations (Pine, 1964 a). Not only are there personality and educational differences between the criminal and non-criminal, but there are also differences within the criminal population (Wilcock, 1964; Lindesmith and Dunham, 1941).

According to the vocational development theory of Super, there is a relationship between one's personality, as defined by a

self-concept scale, and his vocational adjustment (Super, 1957). This theory would be of importance in studying criminal behavior because the criminal, in many instances, is a person who has made an inadequate vocational adjustment. In Super's theoretical framework, the criminal's inability to adjust either vocationally or socially is associated with the criminal's self-concept or his personality as perceived by himself. Thus, any study of criminal behavior would be more embracing or conclusive if it included variables that are related to rehabilitative measures to aid in the prisoner's vocational and social adjustment.

Based on these previous studies, there seems to be a need for a study of a prisoner population that focuses on variables related to (1) the prisoner's personality, (2) his educational level, (3) some measurement of his social adjustment with his peers or prison authorities and (4) his present rate of recidivism. It would also be important to study subgroupings of the total prisoner sample in order to determine variable differences among the prisoners.

The variables employed in this study were age, reading level as defined by a grade level score on the Metropolitan Achievement Test, length of time in prison, adjustment in prison as measured by the number of disciplinary actions since being incarcerated at Draper, personality as measured by the Sixteen Personality Factor Questionnaire-Form A, educational position defined as a student or non-student in the Draper vocational school, and criminal rate, defined as a first offender or recidivist.

Statement of the Problem

The purpose of this study was to identify and compare personality factors, as measured by the Sixteen Personality Factor Questionnaire - Form A, of a sample group of prisoners incarcerated in Draper Correctional Center, Elmore, Alabama. The total sample group of 60 prisoners was subdivided into four groups of student first offenders, student recidivists, non-student first offenders and non-student recidivists. Specifically, the Sixteen Personality Factor Questionnaire - Form A (hereafter designated 16 PF) was used as an instrument to obtain the following information:

1. The Sixteen Personality Factor Questionnaire - Form A was administered to the total Draper sample of 60 subjects in order to present a composite profile for this total sample and the four subgroup samples.
2. Are there differences in the Sixteen Personality factor raw score means among the four Draper subgroups of student first offenders, student recidivists, non-student first offenders and non-student recidivists?
3. Are there differences in the Sixteen Personality factor raw score means between Draper students (1st offenders and recidivists) and non-students (1st offenders and recidivists)? In addition other statistical procedures were utilized to determine the relationship between 16 PF scores and student versus non-student categories.
4. Are there differences in the Sixteen Personality factor raw score means between Draper first offenders (students

and non-students) and recidivists (students and non-students)? In addition, other statistical procedures were utilized to determine the relationship between 16 PF scores and 1st offender versus recidivist categories.

5. Are there differences in the Sixteen Personality factor raw score means between the total Draper sample and the 16 PF general population norm of males which is presented on page 19 of the Supplement of Norms for Forms A and B of the 16 PF?

6. Are there differences in the Sixteen Personality factor raw score means between the total Draper sample and the clinical profile of convicted male criminals in prison which is presented in a "hand-out" sheet published by the Institute for Personality and Ability Testing?

7. What is the relationship between the Sixteen Personality factor scores and ages of subjects of the total Draper sample?

8. What is the relationship between the Sixteen Personality factor scores and time in prison of subjects of the total Draper sample?

9. What is the relationship between the Sixteen Personality factor scores and disciplinary actions of subjects of the total Draper sample?

10. What is the relationship between the Sixteen Personality factor scores and reading scores of subjects of the total Draper sample?
11. In addition, other statistical procedures were utilized to determine the predictability of student versus non-student status, first offender versus recidivist status, time in prison and disciplinary actions from the independent variables of reading scores, age and 16 PF raw scores.

The results of this study should provide information that would be useful in rehabilitative prison programs. For example, if this study found significant relationships between the variables studied and student versus non-student status, this information could serve as a criteria for prison school officials in determining selection of prisoners for school enrollment. Also, any significant relationships found between the variables studied and first offender versus recidivist status could aid prison officials in determining which prisoners would most likely profit from rehabilitative measures.

II. REVIEW OF RELATED LITERATURE

In a five year follow up (ex-post-facto) study of 446 inmates of the Minnesota State Reformatory for Men, 53 variables were utilized to detail the characteristics of each subject (Mandel et al., 1965 b). Their data were related to pre, intra and post-institutional variables. One of the intra-institutional variables was concerned with the prison's educational program (In contrast to Draper's self-instructional school, the Minnesota Prison utilizes the conventional teacher-pupil method). This Minnesota study found that recidivists showed a significantly greater participation in the formal school program than did the non-recidivists; the non-recidivists achieved at a higher, though not significantly higher, level than did the recidivists. The Minnesota findings related to institutional schooling failed to differentiate between recidivists and non-recidivists.

In another aspect of this Minnesota study, five clinical psychologists conducted, independently, a blind sort on admission Minnesota Multiphasic Personality Inventory (hereafter referred to as MMPI) profiles and pre-release MMPI profiles pertaining to the 446 inmates. The judges were to indicate whether or not they would have predicted recidivism or non-recidivism after prison release for each profile examined by them. Agreement by three or more judges

was taken as the basis for consensus. Based on this criteria, there was no significant difference in the judges' ability to correctly predict recidivism or non-recidivism from either admission or pre-release profiles.

In a study of 683 pupils, grades nine through twelve, it was found that delinquent behavior is significantly related to educational aspirations (Pine, 1964 b). This study found that adolescents planning to go to college were less involved in delinquency than those not planning college enrollment. The relatedness of this study of delinquents to adult crime is seen in another study which found that offenses of gang-member delinquents increased in frequency and violence with increasing age into adulthood (Robin, 1964).

The single most important variable for predicting recidivism among convicted criminals has been shown to be the extent of prior criminal experience (Guze, 1964). This study also found that recidivism falls as middle age (40 and older) is approached and reached. The author states that this finding confirms results of other studies which have found that criminal activity diminishes after the age of 40 or 50. The variable effect of education on recidivism was found to be inconclusive. This study is of particular importance because the total sample had an average period of risk (time out of prison) of 34 months; another study of 278 recidivists found that half of the subjects recidivated within 18 months following release and the mean time before becoming a recidivist following release was 24 months (Mandel et al., 1965 c). The 34 months time interval in Guze's follow up study would indicate that

those who had not yet recidivated would continue in that direction.

The relationship between intelligence and criminal or delinquent behavior has been the focus of several studies. One such study concluded that the relationship between intelligence and delinquent behavior could not be expressed as a single fixed value (Caplan and Powell, 1964 a). This study involved 104 delinquents of average intelligence and 104 delinquents of superior intelligence. It was found that both groups were identical as to the number of second official offenses but differed radically when compared for three or more detected offenses. Twenty per cent of the average IQ delinquents eventually got into trouble at least three official times; only three per cent of the superior IQ delinquents were later arrested for as many offenses. The authors conclude that a relationship exists between intelligence and delinquency but this relationship cannot be expressed as a single invariant value.

One author believes that criminology can become a science only through a multifaceted approach which integrates relevant facts from many disciplines (Glueck, 1965 a). In a study designed to discriminate delinquents from non-delinquents, he found delinquents to differ from non-delinquents in the following five ways:

1. They are, physically, more mesomorphic (solid and muscular) than non-delinquents.
2. They are, temperamentally, more restless, energetic, impulsive and aggressive than non-delinquents.
3. They are, in attitude, more hostile, suspicious and non-submissive to authority than non-delinquents.

4. Delinquents are psychologically different in that they tend to be directive and concrete in intellectual expression whereas non-delinquents express themselves more symbolically.
5. Delinquents are different socioculturally, in having been reared to a far greater extent than non-delinquents in homes of little understanding, affection and stability.

The authors concluded that tendencies of delinquents toward uninhibited energy expression are imbedded in soma, psyche and in malformations of character during early childhood (Glueck and Glueck, 1950).

Recidivism studies suffer from several deficiencies including utilization of improper bases for calculating the rate of violation, inaccurate follow-up data on released prisoners, and varying interpretations of recidivism arising out of the influence of court procedures and policies (Davis, 1964). This author goes on to suggest that the proper way to measure recidivism is to follow a group throughout their probationary period and to calculate the per cent of success and failure at successive periods of time.

Sentencing procedures, crime definitions and revocation procedures served to contaminate the results of a study designed to develop a personality scale from the MMPI[2] which would discriminate between potentially successful (non-recidivists) and unsuccessful

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[2]Although this present study utilized the Sixteen Personality Factor Questionnaire-Form A, it would seem appropriate to quote this MMPI study for both tests contain a common factor of expressed anxiety or general maladjustment (La Forge, 1965).

(recidivists) probation candidates (Lytle, 1963 a). No statistically significant differences could be found between the two groups. This author suggested that test instruments need to be restandardized for use with specific sub-populations.

Using case histories and two types of personality tests, marked differences were found (many of them statistically significant) between psychiatrically diagnosed homogeneous groups of prisoners (Magaw, 1959). The two personality tests were the MMPI and the Gordon Personal Profile. Case histories were examined for such factors as alcoholism, work and service record, family status and type of offense committed. Subjects were equated for age, intelligence, environmental background and willingness to cooperate.

Oversensitivity[3] and personal adjustment have been shown to be important factors related to recidivism in male juvenile delinquents (Siegel, 1963 a). This study indicated that oversensitive boys had a significantly greater chance of becoming recidivists after being released. Follow-up studies of 100 white youths, 16-17 years of age, indicated that 11 per cent of the boys who were not oversensitive upon their release became recidivists; 33 per cent of the oversensitive boys became recidivists. The author makes a tentative conclusion that oversensitivity makes it difficult to make an adequate adjustment in marriage and employment.

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[3]Oversensitivity, which was measured by an adaptation of the Neuropsychiatric Screening Adjunct, was determined by the presence of such traits as irritability, easily offended and resentment of criticism; personal adjustment was indicated by the presence of self assurance, lack of depression and a non-anxious personality.

A follow-up study over a two and one-half year period of 311 men released from prison found the three most discriminating variables related to recidivism to be prior penal commitments, prior arrests and type of offense (Metzner and Weil, 1963 a). This study utilized variables which were objective and easily coded from department records. Recidivist rates were also computed for each of six groupings of prisoners, classified according to the three variables just mentioned plus age and race. The authors believe their type study can aid penal authorities in making parole decisions and determine baselines for estimating the effectiveness of treatment programs.

Metzner and Weil found the overall recidivist rate for the 311 releases to be 56 per cent. This figure is very close to previously published recidivism rates from other prisons. For example, a study of 345 men released from the Minnesota State Reformatory during 1944-1945 found that 53 per cent returned within a five year period (Zuckerman, Barron and Whittier, 1953 a). However, it should be noted that both the Massachusetts and Minnesota studies report lower recidivist rates than national reported averages. One study reports a nation-wide recidivist rate of 66.6 per cent (Mattick, 1960). Another author, without giving substantiating references, states, "the recidivism rate in most prison systems hovers around 65 per cent" (Panton, 1962 p. 133). These small but differing reported recidivist rates probably indicate the difficulty in trying to ascertain true local and national rates.. Part of this difficulty is attributable to the lack of a careful definition of "recidivism" (Zuckerman, Barron and Whittier, 1953 b).

It is surprising that so few studies concerning recidivism have appeared in the literature and no standard methods for measuring recidivism have been developed or agreed upon by criminologists (Laulicht, 1962 b). And yet recidivism continues to be an important criterion for the success or failure of treatment programs.

Perhaps the difficulty in defining "recidivism" in a way acceptable to the majority of people engaged in correctional work is a reflection of the incompatibility of various value systems. For example, one recent study questioned the assumption that the internalization of middle class success goals is a universal phenomena (Spiller, 1965). This study found that juvenile delinquent gang members are motivated to achieve prestige based on standards and values of their own subcultural environment. These gang members considered such anti-social behavior as fighting and theft to be highly valued because this type behavior gained them prestige within their own peer group.

Evidence to support the results of Spiller's study was found in a study of 1,154 students (grades six to twelve) from rural, urban and industrial settings (Clark and Wenninger, 1963). This study found that illegal behavior can arise from two sources: (1) pursuit of goals peculiar to a population segment; (2) pursuit of the same type goals for all but the means of achieving them are different.

Middle class values then are culturally distant and not well understood by the potential adult criminal, the boy gang member. Considered from the viewpoint of Spiller's study, the criminal must first come to see middle class goals and values, such as the acquiring

of an education, learning a trade, skill or profession and becoming a pro-social member of society -- the criminal must perceive these things as giving him prestige and status.

The idea that vocational adjustment and personal adjustment are related is held by several prominent vocational development theorists (Ginzberg et al., 1951; Hoppock, 1963; Roe, 1956; Super, 1957 a). For example, Roe and Hoppock believe that vocational choice and/or adjustment is influenced by one's needs. That is, job satisfaction is a reflection of need satisfaction. Super believes that vocational adjustment is an implementation of one's self concept. Ginzberg believes that vocational choice is a compromise between one's interests, goals and values and realistic opportunities in the current occupational field. It is also interesting to note that Ginzberg believes that a person must be willing and able to postpone certain gratifications in setting a realistic vocational goal.

If acquiring an education and learning a trade are important aspects of a prisoner's rehabilitation, then a relevant question is, what is the most expedient way for a prisoner to acquire an education and a trade? At Draper Correctional Center, Elmore, Alabama, where this study was conducted, programmed instruction (self-instrucational method) has been utilized as a rehabilitative device since 1961.[4] In the vocational school, prisoner students are given remedial courses, via the programmed instructional method, in basic

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[4]Based on data accumulated from October 1, 1964 to May 1, 1967, the recidivist rate of graduates of the Draper School is 22%. (See Appendix).

education courses such as reading, grammar and arithmetic. These remedial courses are in addition to the student's regular vocational course. It would now seem appropriate to define and discuss programmed instruction as related to rehabilitation of prisoners.

Programmed instruction is any instruction presented by means of a program, which is designed to present material to the learner, to control the student's behavior during his learning by exposing stimulus material, to require some overt or covert response to the material and finally to provide some form of knowledge of results for each response (Arnstine, 1964). It is a program in the sense that it is a list of items, steps or frames each of which performs these functions. The material to be taught is broken down into very small teaching units, each closely related to the preceding one. This method of presentation makes it relatively errorless for the student to acquire the entire body of material. When it is remembered that these prisoners are men who have failed at nearly everything they have attempted, even crime, or else they would not be in prison, the importance of learning with a minimum of failures can be understood. The average student finds that 70 per cent of his responses will be correct. This percentage increases as he progresses.

With programmed instruction, the student's learning is immediately confirmed. That is, he is presented with immediate knowledge of his results. This aspect of programmed instruction would tend to increase the motivation of these prisoners. For these men need tangible rewards and immediate gratification in order

to increase their motivation. The middle class values of symbolic rewards and postponed gratification do not work as a motivating force with the culturally deprived (Gordon, 1965). The vast majority of Draper prisoners could be defined as culturally deprived. Nearly all these men come from a background of low family income, limited parental education, low aspirations for parents and children and very limited social, economic and political participation in community affairs (John Watkins, warden of Draper, personal communication to the author). These are characteristics often used to classify the culturally deprived (Daniel, 1964).

The point has been raised that the culturally deprived value education but dislike school (Riessman, 1964). This claim is based on the results of an anonymous survey conducted several years ago in which 70 per cent of the people in a lower socio-economic group replied "education" as to what they missed most and would like their children to have. Riessman goes on to say that the culturally deprived are alienated from school and resent teachers as they do most authority figures. Therefore, their attitude towards education and towards the school must be considered separately. If Riessman's claims are correct, they would seem to offer some justification for the use of programmed instruction in a prison setting. The emphasis on self-instruction and lack of emphasis on teacher might help the prisoner to develop a more adequate attitude toward authority figures and also increase his learning skills.

The criminal does have his own set of behavioral rules which enable him to identify with a group that has anti-social mores

(Keith and Stramm, 1964). The authors state that much of the criminal's behavior arises out of a need which protects him from identifying with feared and hated authority figures. This identification would cause him anxiety, guilt and dissatisfaction with his anti-social behavior. It would be logical, therefore, to assume that the criminal perceives the classroom teacher as an authority figure of the society of which he is not a member. Based on this reasoning, it perhaps can be understood why the programmed instructional method, which is relatively impersonal without the presence of a teacher, should meet with success in a criminal population.

Dr. McKee states: "Many of these students exhibit patterns of deviant behavior which alienate them from their teachers and peers and, in general, interfere with their ability to receive adequate reinforcement from their environment. The use of self-instructional programmed material with this population offers the possibility of raising the academic standing of the group and at the same time contributing to their behavioral adjustment. Self-instructional programmed material, with its potential for accelerated learning, might well develop feelings of confidence and achievement in the student, leading to adaptive rather than maladaptive classroom behavior" (McKee, 1963).

Summary

The main points which emerged from this review of related literature were the following:

1. Personality factors, educational level, vocational adjustment, intelligence and sociocultural factors are related to recidivism and/or criminal behavior but not as single invariant values (Glueck, 1965 b; Siegel, 1963 b; Pine, 1964 c; Super, 1957 b; Caplan and Powell, 1964 b).
2. There are no tests or other measures that will predict recidivism or non recidivism (Mandel et al., 1965 d; Metzner and Weil, 1963 b).
3. Variations in court policies and procedures as found in sentencing, revoking paroles and defining criminal acts, contaminate the results of studies concerned with determining variables related to recidivism and/or criminal behavior (Lytle, 1963 b).

Based on this review of related literature, there seems to be a need for research studies that are concerned with understanding how such variables as personality, education and vocational adjustment are related to recidivism and/or criminal behavior. These studies not only would add to theoretical knowledge needed for defining recidivism but would also add to practical knowledge needed for structuring prison rehabilitation programs.

III. METHODS AND PROCEDURE

Sample and Population

The sample for this study consisted of 60 male prisoners who were incarcerated at Draper Correctional Center in Elmore, Alabama.

For purposes of the research design of this study, the sample group of 60 prisoners was divided into four subgroups of fifteen prisoners each:

1. Student first offenders (hereafter designated SFO) - These men were enrolled in the vocational school at Draper which is supported by the Manpower and Development Training Act of the United States Government. At the time of testing (May 9 and 16, 1967), all these subjects had been enrolled as students in this school for five months. They were presently imprisoned for having been convicted of their first felony offense.[5]

2. Student recidivists (hereafter designated SR) - These men were also enrolled in the same vocational school as the SFO group. Eleven of these subjects had been enrolled as students for five months; three had been students for four months; one had been a student for three months. All these men had recidivated twice or more: nine were imprisoned for the second time; four were imprisoned for the third time; two were imprisoned for the fourth time.[6]

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[5]Many subjects in the SFO group had juvenile delinquent records ranging from warnings to probations to actual detention.

[6]No attempt was made to discriminate between recidivists who were imprisoned for committing a new offense and those who had committed a technical violation of parole. Previous studies had indicated the fallacy of attempting this (Lytle, 1963 b; Bates, 1958). As these and other authors point out, a technical violator will have many times actually committed a new offense, but they will plead guilty to a technical violation rather than be charged with a new criminal offense.

3. Non-student first offenders (hereafter designated NSFO) - These men were not at the time of testing and never had been enrolled as students in any school at Draper. Their classification as first offenders is the same as for the SFO group.

4. Non-student recidivists (hereafter designated NSR) - These men were not at the time of testing and never had been enrolled as students in any school at Draper. All these men had recidivated twice or more: seven were imprisoned for the second time; five were imprisoned for the third time; three were imprisoned for the fourth time.

Method of Data Collection

Beginning April 3, 1967 and ending April 14, 1967 an examination of prisoner classification files of those men enrolled in the vocational school was made by the investigator of this study. Only those students who scored 7.1 grade level or above on the reading section of the Metropolitan Achievement Test Advanced Form A-M, were selected as possible subjects.[7] An attempt was made to limit as subjects those 30 years of age or younger; however, this was impossible for the SR (student-recidivist) group. Thirty-six men were finally selected as possible subjects for the two student groups (SFO and SR) with 18 in each group.

When the 16 PF was administered to the two student groups on May 9, 1967 and May 16, 1967 the following absentees were noted: two men were in solitary confinement for disciplinary reasons; one man was in the infirmary; two men had been released from Draper;

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[7]Dr. Herbert Eber, co-author of the 16 PF, believes a minimum reading level of 7.1 is necessary in order to read and comprehend the 16 PF-Form A (personal communication to the author).

one man did not wish to participate as a subject. These absentees resulted in two groups of fifteen subjects each for the SR and SFO groups. These 30 subjects were paid fifty cents each by the investigator for taking the 16 PF test.[8]

Beginning April 17, 1967 and ending April 28, 1967 an examination of prisoner classification files of those men not currently enrolled in the vocational school was made by the investigator. Only those men who claimed a ninth grade education or above were selected as possible subjects. An attempt was made to limit subjects to those 30 years of age and younger, but again this became impossible for the recidivist group. Fifty-four men were finally selected as possible subjects for the non-student groups.

These 54 men were first administered the reading section of the Metropolitan Achievement Test which is a time test of 25 minutes. They were told by the investigator before being administered the reading test: (1) they would be paid twenty-five cents after completing the reading test; (2) if they scored "high enough" on the reading test, they would then be administered a personality test for which they would be paid fifty cents.

Ten of the 54 prospective subjects did not score 7.1 grade level or above on the reading test and could not be used as subjects to take the 16 PF test; eight did not wish to participate in either test; two men had been enrolled in the Draper school while "serving

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[8]A precedent for paying delinquents and criminals has been established in an earlier study by another author (Slack, 1960).

time" there for a previous conviction; two men were in solitary confinement for disciplinary reasons; two had been released just prior to the time of testing, May 20 and 23, 1967. These absentees and inadequacies resulted in two groups of fifteen subjects each for the non-students (NSFO and NSR).

Instrumentation

The Sixteen Personality Factor Questionnaire-Form A, published by the Institute for Personality and Ability Testing, was developed by R. B. Cattell and H. W. Eber. It is a self-report personality questionnaire which purports to measure, inclusively, main dimensions of personality as derived by factor analysis.

Form A, 1962 edition of the 16 PF, which was used in this study, is one of six possible forms of this test. Forms A & B are most appropriate for the adult with a high school reading level. Forms A & B each have 187 items in trichotomous form; ten to thirteen items are utilized to measure each of 16 personality traits. Forty to sixty minutes are usually required to complete either form. The questionnaire items concern interest, preferences, and other customary self reports of behavior.

The personality factors which the 16 PF purports to measure are:

Factor	low score direction	high score direction
A	tends to be stiff, cool and aloof. Likes things rather than people. Prefers to work alone. Avoids clashing viewpoints.	good natured and easy going, attentive to people, ready to cooperate and adaptable.

Factor	low score direction	high score direction
B	is slow to learn, has little capacity for higher forms of knowledge.	a fast learner and is quick to grasp ideas.
C	lacks frustration tolerance, has neurotic symptoms such as phobias, sleep disturbances and psychosomatic complaints.	emotionally mature and posseses ego strength, is realistic about life, has an integrated philosophy of life.
E	is dependent and takes action which goes along with the group.	is independent, self assured, at times may be solemn, tough-minded and authoritarian.
G	is fickle, undependable, irresolute, lacks internal standards, can be demanding and obstructive.	is persevering, determined and responsible, consistent and well organized, has high regard for moral standards.
H	is cautious, withdrawn and shy, slow to express himself, has inferiority feelings, prefers 1 or 2 close friends to large groups.	is sociable, spontaneous and abundant in emotional responses, can face grueling emotional situations without fatigue.
I	is practical and can be hard, cynical and smug, operates on a practical and realistic basis.	is artistic, introspective and tender minded, can be demanding and impatient, often upsets group morale by negative remarks.
L	is relatively free of jealous tendencies, adaptable, concerned about others.	is mistrusting and doubtful, unconcerned about others, usually deliberate in his actions.
M	is anxious to do the right thing, often rather narrowly correct and unimaginative.	unconventional and unconcerned, often makes emotional scenes, is somewhat irresponsible and impractical.
N	is unsophisticated, is often crude and awkward, is sentimental.	is polished and shrewd, has an intellectual and unsentimental approach to problems.
O	relatively free from anxiety, is placid and calm, has confidence in himself to deal with things.	is depressed, moody and a avoids people, often does not feel accepted in groups, becomes easily upset.

Factor	low score direction	high score direction
Q_1	is opposed to any change, usually goes along with tradition, is not interested in analytical thought.	usually takes issue with ideas, both old and new; more inclined to experiment in life generally; more tolerant of inconvenience.
Q_2	likes and depends on social approval and admiration, prefers to work and make decisions with others.	is accustomed to going his own way; makes decisions and takes action on his own.
Q_3	is not too considerate, careful or conscientious; lacks will control and character stability.	has strong control of his emotions and general behavior; usually considerate and evidences what is commonly termed self-respect.
Q_4	is relaxed, composed and satisfied; is not frustrated.	is tense, excitable restless and fretful; often overfatigued but unable to remain inactive.

The 16 traits are classified as source traits as opposed to surface traits. Source traits are considered to be more important than surface traits because source traits are the underlying variables tha affect, influence and determine overt behavior. In essence, source traits would appear to represent the structure which underlies personality. Surface traits are produced by the interaction of source traits. Therefore, source traits are more useful in predicting and accounting for behavior.

Reported split-half reliabilities for each of the 16 factor scales range from +.71 to +.96 averaging about +.83 or +.84; internal construct validities range from +.73 to +.96 averaging approximately +.88 (Cattell and Eber, 1965 a). These reliabilities and validities

are for Forms A and B combined; however, the authors suggest that estimates of these values for Form A, although lower, will be very close on all factors (Cattell and Eber, 1957 a).

Construct validity involves a correlation between test scores and values of another variable. The outside variable is not actually a criterion; however, it is a variable that should relate logically to the test. For example, in the case of the 16 PF, each of the questionnaire factors has been found to correspond to a primary personality factor found elsewhere -- ratings of real life behavior situations in social response patterns and in abnormal behavior (Cattell and Eber, 1957 b). Thus, in construct validity, results are predicted which logically should be obtained if the test is valid. In this way, both the validity of the test and its underlying theory are checked. In essence, construct validity is concerned with the psychological meaningfulness of the test (Lyman, 1963).

Evaluations of the 16 PF by other authorities appear to vary greatly. For example, one reviewer states, "We conclude the 16 PF test could be used in a harmful manner...either the statement about the diagnostic value of the factor scores should be confirmed, or the present handbook withdrawn and rewritten" (Lubin, 1953 p. 87). While another reviewer says, "The 16 PF test bids fair to become the standard questionnaire-type personality test of the future. It provides a comprehensive range of trait scores which should be useful for occupational guidance and as a background to clinical examination" (Adcock, 1959 p. 114).

The 16 PF is regarded by some authorities as still primarily a research instrument (Lorr, 1965). Lorr goes on to say that the 16 PF represents a high order of technical skill and is the best factor based personality inventory available. However, it has two major shortcomings: (1) it is questionable, based on past investigations, whether or not the 16 factors emerge as independent sources of variance; (2) many of the statements making up a factor are introspectively quite diverse which would suggest a further critical examination of the scale structure.

One reported factor analysis of the 16 PF showed only eight distinguishable factors (Becker, 1961). Becker suggested the need for a new factored personality questionnaire which would focus on measuring fewer independent factors reliably.

The authors of this instrument now report the 16 PF can be scored for four broad second order factors (Cattell and Eber, 1962). These four factors are: (1) adjustment versus anxiety, (2) introversion versus extraversion, (3) tenderminded emotionality versus alert poise, (4) subduedness versus independence.

Method of Data Analysis

An identification number, ranging from one to sixty, was assigned to each subject of the sample. Each subgroup was arranged alphabetically with the first group (SFO) assigned the identification numbers 1 through 15; the second group (SR) 16 through 30; the third group (NSFO) 31 through 45; the fourth group (NSR) 46 through 60.

Subjects were also assigned numbers for the following variables:

Subjects of each subgroup were assigned combination numbers of one and two according to the categories of student versus non-student and first offender versus recidivist. Each subject's reading score was given, based on grade level and corrected to the nearest tenth. For example, a reading score of 10.6 is interpreted as a reading level equivalent to a student who has completed 10.6 grades. Age was given in terms of years to the nearest tenth. For example, an age of 24.5 is interpreted as one who is 24 years and 6 months old. Time in prison was given in terms of months spent in prison as a convicted criminal. Disciplinary action was given in terms of the number of days spent in solitary confinement at Draper.

The 16 personality factor scores were given for each subject in terms of his raw score.

Appropriate numbers, based on the previously mentioned variables, were then transferred to IBM cards for each subject.

Hypotheses Tested

This study hypothesized a homogeneous population according to 16 PF measures. The following nine hypotheses were tested.

1. There is no difference in 16 PF raw score means among the four Draper subgroups of student first offenders, student recidivists, non-student first offenders and non-student recidivists.

2. There is no difference in 16 PF raw score means between Draper students and non-students.
3. There is no difference in 16 PF raw score means between Draper first offenders and recidivists.
4. There is no difference in 16 PF raw score means between the total Draper sample and the general population norm of males.
5. There is no difference in 16 PF raw score means between the total Draper sample and the clinical profile of convicted male criminals in prison.
6. There is no relationship between 16 PF raw score means and ages for the total Draper sample.
7. There is no relationship between 16 PF raw score means and time in prison for the total Draper sample.
8. There is no relationship between 16 PF raw score means and disciplinary actions for the total Draper sample.
9. There is no relationship between 16 PF raw score means and reading scores for the total Draper sample.

Although it was not tested as a hypothesis, the predictability of student versus non-student status, first offender versus recidivist status, time in prison and disciplinary actions from the independent variables of 16 PF scores, age and reading scores was also determined.

Scoring of the 16 PF

The 16 PF answer sheets of the 60 subjects were hand scored by the investigator, using two cardboard stencils. Each stencil, with punched holes, is applied in succession to the answer sheet; each stencil gives eight scores which are entered in the raw score column on the right hand edge of the answer sheet. The "right" answer scores two points; the intermediate answer scores one point; the "wrong" answer scores zero points.

Statistical Procedure

The analysis of variance statistical method was used to determine the following 16 PF raw score differences: among the four subgroups of student first offenders, student recidivists, non-student first offenders and non-student recidivists; between students and non-students; between first offenders and recidivists (Walker and Lev, 1953 a). The Auburn University Computer Center, using electrical computing equipment, calculated the F - ratios.

The t-test statistic was used to determine the following differences: between the total Draper sample and the general population norm of males; between the total Draper sample and the clinical profile of convicted male criminals in prison (Walker and Lev, 1953 b). The 16 PF raw scores were used to determine these differences. Dr. Herbert Eber and his staff of the Institute for Personality and Ability Testing - Southern calculated the t-values.

The Pearson Product Moment Formula was used to determine the relationship of 16 PF raw scores to the following variables: age, time in prison, disciplinary actions and reading scores (Walker and Lev, 1953 c). This formula was also used to collect data concerning the relationship of 16 PF scores to student versus non-student status and first offender versus recidivist status. The Auburn University Computer Center calculated the correlation coefficients.

Discriminant analysis was used to predict the discrete variables of student versus non-student status and first offender versus recidivist status (Anderson, 1958; Rao, 1952). Multiple regression was used to predict the continuous variables of time in prison and number of disciplinary actions (Cooley and Lahnes, 1962; Ostle, 1954). In both the discriminant analysis and multiple regression, independent variables of 16 PF raw scores, ages and reading scores were used to predict the dependent variables. The Auburn University Computer Center calculated the appropriate statistical values for the discriminant analysis and the multiple regression.

Statistical data collected in this study that reached the .05 level of probability or less was considered to be significant. Although some data were significant at a probability level beyond the .05 level, this data was reported as being significant only at the .05 level.

IV. RESULTS

Presented in this chapter are the description of the total Draper sample and subgroups; the results of the analysis of variance which determined 16 PF raw score differences among the four Draper subgroups of student first offenders, student recidivists, non-student first offenders and non-student recidivists; between students and non-students and between first offenders and recidivists; results of the t - test which determined 16 PF raw score differences between the total Draper sample and the general population norm of males and between the total Draper sample and the clinical profile of convicted male criminals in prison; results of correlation testing which determined the relationship of 16 PF raw scores to ages of Draper subjects, their length of time in prison, disciplinary actions and reading scores. Each hypothesis will be presented separately and discussed.

Also included in this chapter are the results of the discriminant analysis and the multiple regression statistical techniques which determined the predictability of student versus non-student status, first offender versus recidivist status, time in prison and disciplinary actions from the independent variables of 16 PF raw scores, age and reading scores.

Hypothesis one, which stated there will be no difference in 16 PF raw score means among the four Draper subgroups of student first

offenders, student recidivists, non-student first offenders and non-student recidivists, was rejected. Presented in Table 1 are the results of the analysis of variance for these four subgroups of Draper subjects.

The F-ratio presented in Table 1 indicates that something other than chance is operating to cause these differences in 16 PF raw score means among student first offenders, student recidivists, non-student first offenders and non-student recidivists.

TABLE 1

DIFFERENCES OF THE 16 PERSONALITY FACTORS AMONG STUDENT FIRST OFFENDERS, STUDENT RECIDIVISTS, NON-STUDENT FIRST OFFENDERS AND NON-STUDENT RECIDIVISTS COMPUTED BY THE ANALYSIS OF VARIANCE

Source	df	S.S.	M.S.	F
Between Groups	15	422.14	28.14	1.92*
Within Groups	840	12326.24	14.67	
TOTAL	855	12748.38	42.81	

*Significant at the .05 level of confidence

Since it has been statistically demonstrated that a significant amount of variation exists among these four Draper subgroups, it must be determined which 16 PF scales contribute to this variation. Presented in Tables 2 through 7, inclusively, are t-values which indicate the differences in the mean scores between each of the 16 PF scales.

The t-values presented in Table 2 indicate there is a significant difference between non-student first offenders and student recidivists on the 16 PF scales E (humble-assertive) and I (tough minded-tender

TABLE 2

COMPUTED t-VALUES FOR NON-STUDENT FIRST OFFENDERS (NSFO) VERSUS STUDENT RECIDIVISTS (SR) FOR THE VARIABLES OF THE 16 PERSONALITY FACTORS, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTIONS

Variable	Interpretation low - high			Means NSFO N = 15	Means SR N = 15	t Value
Reading score				10.58	9.67	1.79
Age				21.95	25.51	-2.42*
Time in Prison				11.00	39.14	-4.29*
Disc. Actions				8.07	4.13	0.94
A	Reserved	-	Outgoing	9.80	9.40	0.35
B	Less intelligent	-	More intelligent	5.73	7.00	-1.66
C	Affected by feelings	-	Emotionally stable	12.60	13.20	-0.50
E	Humble	-	Assertive	11.87	15.00	-1.96*
F	Desurgent	-	Surgent	14.67	15.13	-0.30
G	Expedient	-	Conscientious	11.53	10.20	0.97
H	Shy	-	Venturesome	11.53	12.07	-0.30
I	Tough minded	-	Tender minded	9.73	7.27	2.42*
L	Trusting	-	Suspicious	10.73	11.33	-0.60
M	Practical	-	Imaginative	12.67	11.60	0.75
N	Forthright	-	Shrewd	10.67	10.13	0.48
O	Placid	-	Apprehensive	13.40	12.93	0.40
Q_1	Conservative	-	Experimenting	8.20	8.33	-0.11
Q_2	Group dependent	-	Self sufficient	11.00	10.93	0.07
Q_3	Undisciplined self-conflict	-	Controlled	11.40	9.60	1.52
Q_4	Relaxed	-	Tense	13.40	15.53	-1.24

*Significant at the .05 level of confidence

minded). There are also significant differences on the variables of age and time in prison. The scores on these four variables indicate the following: student recidivists are older and have been in prison a longer period of time than non-student first offenders; student recidivists are more assertive and more tough minded than non-student first offenders.

The t-values presented in Table 3 indicate there is a significant difference between student first offenders and non-student recidivists on the 16 PF scale B (intelligence). There are also significant differences on the variables of reading scores, age and time in prison. The scores on these four variables indicate the following: student first offenders score higher on reading tests than do non-student recidivists; student first offenders are younger and have been in prison a shorter time than have non-student recidivists; student first offenders are more intelligent than non-student recidivists.

The t-values presented in Table 4 indicate there are no significant differences between student first offenders and student recidivists on the 16 PF scales. However, there are significant differences on the variables of age and time in prison. The scores on these two variables indicate that student recidivists are older and have been in prison a longer period of time than have student first offenders.

The t-values presented in Table 5 indicate there is a significant difference between student recidivists and non-student recidivists on the 16 PF scales B (intelligence), C (affected by feelings - emotionally stable), E (humble-assertive), L (trusting-suspicious) and Q_4 (relaxed-

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1 OF 3

TABLE 3

COMPUTED t-VALUES FOR STUDENT FIRST OFFENDERS (SFO) VERSUS NON-STUDENT RECIDIVISTS (NSR) FOR THE VARIABLES OF THE 16 PERSONALITY FACTORS, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTIONS

Variable	Interpretation low - high			Means SFO N = 15	Means NSR N = 15	t value
Reading Score				10.27	8.82	2.68*
Age				21.12	26.57	-4.82*
Time in Prison				9.53	40.07	-6.77*
Disc. Actions				3.00	1.33	1.36
A	Reserved	-	Outgoing	9.27	8.93	0.30
B	Less intelligent	-	More intelligent	6.93	4.47	4.47*
C	Affected by feelings	-	Emotionally stable	15.40	15.93	-0.38
E	Humble	-	Assertive	13.13	11.13	1.39
F	Desurgent	-	Surgent	16.60	16.33	0.17
G	Expedient	-	Conscientious	11.33	12.00	-0.52
H	Shy	-	Venturesome	14.87	13.33	0.76
I	Tough minded	-	Tender minded	8.13	7.67	0.42
L	Trusting	-	Suspicious	10.33	8.67	1.36
M	Practical	-	Imaginative	11.93	12.00	-0.06
N	Forthright	-	Shrewd	10.07	10.93	-0.96
O	Placid	-	Apprehensive	11.27	12.27	-0.69
Q_1	Conservative	-	Experimenting	8.67	8.40	0.20
Q_2	Group dependent	-	Self sufficient	11.13	9.87	0.88
Q_3	Undisciplined self-conflict	-	Controlled	10.60	11.93	-0.87
Q_4	Relaxed	-	Tense	12.87	12.00	0.45

*Significant at the .05 level of confidence

TABLE 4

COMPUTED t-VALUES FOR STUDENT FIRST OFFENDERS (SFO) VERSUS STUDENT RECIDIVISTS (SR) FOR THE VARIABLES OF THE 16 PERSONALITY FACTORS, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTION

Variable	Interpretation low - high		Means SFO N = 15	Means SR N = 15	t Value
Reading Score			10.27	9.67	1.05
Age			21.12	25.51	-3.36*
Time in Prison			9.53	39.13	-4.57*
Disc. Actions			3.00	4.13	-0.52
A	Reserved	- Outgoing	9.27	9.40	-0.11
B	Less intelligent	- More intelligent	6.93	7.00	-0.09
C	Affected by feelings	- Emotionally stable	15.40	13.20	1.51
E	Humble	- Assertive	13.13	15.00	-1.24
F	Desurgent	- Surgent	16.60	15.13	0.91
G	Expedient	- Conscientious	11.33	10.20	0.70
H	Shy	- Venturesome	14.87	12.07	1.42
I	Tough minded	- Tender minded	8.13	7.27	0.82
L	Trusting	- Suspicious	10.33	11.33	-0.76
M	Practical	- Imaginative	11.93	11.60	0.24
N	Forthright	- Shrewd	10.07	10.13	-0.07
O	Placid	- Apprehensive	11.27	12.93	-1.11
Q_1	Conservative	- Experimenting	8.67	8.33	0.25
Q_2	Group dependent	- Self sufficient	11.13	10.93	0.15
Q_3	Undisciplined self-conflict	- Controlled	10.60	9.60	0.67
Q_4	Relaxed	- Tense	12.87	15.53	-1.26

*Significant at the .05 level of confidence

tense). The scores on these 16 PF scales indicate the following: student recidivists are more intelligent, less emotionally stable, more assertive, more suspicious and more tense than are non-student recidivists.

The t-values presented in Table 6 indicate there is a significant difference between student first offenders and non-student first offenders on the 16 PF scale B (intelligence). The score on this factor (B) indicates that student first offenders are more intelligent than non-student first offenders.

The t-values presented in Table 7 indicate there are significant differences between non-student first offenders and non-student recidivists on the 16 PF scales B (intelligence), C (affected by feelings-emotionally stable) and L (trusting-suspicious). There are also significant differences on the variables of reading scores, age and time in prison. The scores on these six variables indicate the following: non-student first offenders are more intelligent, less emotionally stable and more suspicious than are non-student recidivists; non-student first offenders score higher on reading tests, are younger and have been in prison a shorter length of time than have non-student recidivists.

Hypothesis two, which stated there will be no difference in 16 PF raw score means between Draper students and non-students, was not rejected. Presented in Table 8 are the results of the analysis of variance for the student versus non-student groupings. The F ratio presented in Table 8 is not significant at the .05 level of confidence. Thus, no significant difference between the 16 PF raw score means of students and non-students was found.

TABLE 5

COMPUTED t-VALUES FOR STUDENT RECIDIVISTS (SR) VERSUS NON-STUDENT RECIDIVISTS (NSR) FOR THE VARIABLES OF THE 16 PERSONALITY FACTORS, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTIONS

Variable	Interpretation low - high			Means SR N = 15	Means NSR N = 15	t Value
Reading Score				9.67	8.83	1.46
Age				25.51	26.57	-0.68
Time in Prison				39.13	40.07	-0.12
Disc. Actions				4.13	1.33	1.36
A	Reserved	-	Outgoing	9.40	8.93	0.43
B	Less intelligent	-	More intelligent	7.00	4.47	3.44*
C	Affected by feelings	-	Emotionally stable	13.20	15.93	-2.43*
E	Humble	-	Assertive	15.00	11.13	2.23*
F	Desurgent	-	Surgent	15.13	16.33	-0.71
G	Expedient	-	Conscientious	10.20	12.00	-1.44
H	Shy	-	Venturesome	12.07	13.33	-0.64
I	Tough minded	-	Tender minded	7.27	7.67	-0.42
L	Trusting	-	Suspicious	11.33	8.67	2.60*
M	Practical	-	Imaginative	11.60	12.00	-0.33
N	Forthright	-	Shrewd	10.13	10.93	-0.76
O	Placid	-	Apprehensive	12.93	12.27	0.48
Q_1	Conservative	-	Experimenting	8.33	8.40	-0.06
Q_2	Group dependent	-	Self sufficient	10.93	9.87	0.98
Q_3	Undisciplined self-conflict	-	Controlled	9.60	11.93	-1.70
Q_4	Relaxed	-	Tense	15.53	12.00	2.06*

*Significant at the .05 level of confidence

TABLE 6

COMPUTED t-VALUES FOR STUDENT FIRST OFFENDERS (SFO) VERSUS NON-STUDENT FIRST OFFENDERS (NSFO) FOR THE VARIABLES OF THE 16 PERSONALITY FACTORS, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTIONS

Variable	Interpretation low - high			Means SFO N = 15	Means NSFO N = 15	t Value
Reading Score				10.27	10.58	-0.69
Age				21.12	21.95	-0.81
Time in Prison				9.53	11.00	-0.85
Disc. Actions				3.00	8.07	-1.32
A	Reserved	-	Outgoing	9.27	9.80	-0.45
B	Less intelligent	-	More intelligent	6.93	5.73	2.04*
C	Affected by feelings	-	Emotionally stable	15.40	12.60	1.92
E	Humble	-	Assertive	13.13	11.87	0.99
F	Desurgent	-	Surgent	16.60	14.67	1.38
G	Expedient	-	Conscientious	11.33	11.53	-0.14
H	Shy	-	Venturesome	14.87	11.53	1.85
I	Tough minded	-	Tender minded	8.13	9.73	-1.35
L	Trusting	-	Suspicious	10.33	10.73	-0.33
M	Practical	-	Imaginative	11.93	12.67	-0.55
N	Forthright	-	Shrewd	10.07	10.67	-0.62
O	Placid	-	Apprehensive	11.27	13.40	-1.69
Q_1	Conservative	-	Experimenting	8.67	8.20	0.34
Q_2	Group dependent	-	Self sufficient	11.13	11.00	0.09
Q_3	Undisciplined self-conflict	-	Controlled	10.60	11.40	-0.59
Q_4	Relaxed	-	Tense	12.87	13.40	-0.28

*Significant at the .05 level of confidence

TABLE 7

COMPUTED t-VALUES FOR NON-STUDENT FIRST OFFENDERS (NSFO) VERSUS NON-STUDENT RECIDIVISTS (NSR) FOR THE VARIABLES OF THE 16 PERSONALITY FACTORS, READING SCORES, AGE, TIME IN PRISON AND DISCIPLINARY ACTIONS

Variable	Interpretation low - high			Means NSFO N = 15	Means NSR N = 15	t-Value
Reading Score				10.58	8.83	3.71*
Age				21.95	26.57	-3.50*
Time in Prison				11.00	40.07	-6.28*
Disc. Actions				8.07	1.33	1.78
A	Reserved	-	Outgoing	9.80	8.93	0.80
B	Less intelligent	-	More intelligent	5.73	4.47	2.29*
C	Affected by feelings	-	Emotionally stable	12.60	15.93	-2.96*
E	Humble	-	Assertive	11.87	11.13	0.46
F	Desurgent	-	Surgent	14.67	16.33	-1.11
G	Expedient	-	Conscientious	11.53	12.00	-0.49
H	Shy	-	Venturesome	11.53	13.33	-0.99
I	Tough minded	-	Tender minded	9.73	7.67	1.90
L	Trusting	-	Suspicious	10.73	8.67	2.33*
M	Practical	-	Imaginative	12.67	12.00	0.57
N	Forthright	-	Shrewd	10.67	10.93	-0.26
O	Placid	-	Apprehensive	13.40	12.27	1.02
Q_1	Conservative	-	Experimenting	8.20	8.40	-0.17
Q_2	Group dependent	-	Self sufficient	11.00	9.87	0.99
Q_3	Undisciplined self-conflict	-	Controlled	11.40	11.93	-0.43
Q_4	Relaxed	-	Tense	13.40	12.00	0.66

*Significant at the .05 level of confidence

TABLE 8

DIFFERENCES OF THE 16 PERSONALITY FACTORS BETWEEN STUDENTS AND NON-STUDENTS AS COMPUTED BY ANALYSIS OF VARIANCE

Source	df	S.S.	M.S.	F
Between Groups	15	302.38	20.16	1.374
Within Groups	840	12326.24	14.67	
TOTAL	855	12628.62	34.83	

However, the Pearson Product Moment Correlation statistical procedure indicated that Factors B (intelligence) and E (humble-assertive) are negatively related to student versus non-student status. Presented in Table 9 are the correlation coefficients which reflect the relationship between 16 PF raw scores and student versus non-student status.

These negative correlation coefficients presented in Table 9 indicate that Factor B (intelligence) and Factor E (humble versus assertive) are inversely related for students versus non-students. This scoring of Factor B indicates that students score higher on Factor B than non-students. The scoring of Factor E indicates that students score higher on Factor E than non-students.

Hypothesis three, which stated there will be no difference in the 16 PF raw score means between Draper first offenders and recidivists, was not rejected. Presented in Table 10 are the results of the analysis of variance for the first offender versus recidivist groups. The F ratio presented in Table 10 is not significant at the .05 level of confidence. Thus, the analysis of variance statistical technique

failed to discriminate between the 16 PF raw score means of first offenders and recidivists.

TABLE 9

RELATIONSHIP BETWEEN 16 PERSONALITY FACTOR SCORES AND STUDENT VERSUS NON-STUDENT STATUS OF THE TOTAL DRAPER SAMPLE COMPUTED BY THE PEARSON PRODUCT MOMENT CORRELATION

Factor	Interpretation low - high			r
A	Reserved	-	Outgoing	.01
B	Less intelligent	-	More intelligent	-.45*
C	Affected by feelings	-	Emotionally stable	-.00
E	Humble	-	Assertive	-.29*
F	Desurgent	-	Surgent	.04
G	Expedient	-	Conscientious	-.13
H	Shy	-	Venturesome	-.10
I	Tough minded	-	Tender minded	-.16
L	Trusting	-	Suspicious	-.17
M	Practical	-	Imaginative	-.08
N	Forthright	-	Shrewd	.12
O	Placid	-	Apprehensive	10
Q_1	Conservative	-	Experimenting	-.03
Q_2	Group dependent	-	Self sufficient	-.09
Q3	Undisciplined self-conflict	-	Controlled	.20
Q_4	Relaxed	-	Tense	-.14

*Significant at the .05 level of confidence

TABLE 10

DIFFERENCES OF THE 16 PF RAW SCORES BETWEEN DRAPER FIRST OFFENDERS AND RECIDIVISTS COMPUTED BY THE ANALYSIS OF VARIANCE

Source	df	S.S.	M.S.	F
Between Groups	15	69.70	4.65	0.317
Within Groups	840	12326.24	14.67	
TOTAL	855	12395.94	19.32	

An additional statistical procedure utilizing the Pearson Product Moment correlation indicated that no personality factor is significantly related to first offender-recidivist status. Presented in Table 11 are correlation coefficients which reflect the relationship between 16 PF raw scores and first offender versus recidivist status.

TABLE 11

RELATIONSHIP BETWEEN 16 PERSONALITY FACTOR RAW SCORES AND FIRST OFFENDER-RECIDIVIST STATUS OF THE TOTAL DRAPER SAMPLE COMPUTED BY THE PEARSON PRODUCT MOMENT CORRELATION

Factor	Interpretation low - high			r
A	Reserved	-	Outgoing	-.06
B	Less intelligent	-	More intelligent	-.14
C	Affected by feelings	-	Emotionally stable	.07
E	Humble	-	Assertive	.06
F	Desurgent	-	Surgent	.01
G	Expedient	-	Conscientious	-.04
H	Shy	-	Venturesome	-.05
I	Tough minded	-	Tender minded	-.24
L	Trusting	-	Suspicious	-.08
M	Practical	-	Imaginative	-.07
N	Forthright	-	Shrewd	.03
O	Placid	-	Apprehensive	.03
Q_1	Conservative	-	Experimenting	-.01
Q_2	Group dependent	-	Self sufficient	-.10
Q_3	Undisciplined self-conflict	-	Controlled	-.03
Q_4	Relaxed	-	Tense	.06

Hypothesis four which stated there will be no difference in the 16 PF raw score means between the total Draper sample and the general population norm of males, was rejected on eight factors. Presented in Table 12 are t-values which reflect the differences of 16 PF raw

score means between the total Draper sample and the general population norm of males. Results of the Draper and norm 16 PF raw score means presented in Table 12 indicate there are significant differences between the total Draper sample and general population norm of males on 8 of the 16 PF scales.

The 8 factors which indicate a significant difference between the Draper sample and the norm group are Factors C, F, G, L, N, O, Q, and Q_4. The scoring of these particular factors would suggest the following:

Factor C - The norm group is more emotionally stable than the Draper sample.

Factor F - The Draper sample is more surgent than the norm group.

Factor G - The norm group is more conscientious than the Draper sample.

Factor L - The Draper sample is more suspicious than the norm group.

Factor N - The norm group is more shrewd than the Draper sample.

Factor O - The Draper sample is more apprehensive than the norm group.

Factor Q_1- The norm group is more experimenting than the Draper sample.

Factor Q_4- The Draper sample is more tense than the norm group.

No significant difference was found between the Draper sample and the norm group of males on Factors A, B, E, H, I, M, Q_2, and Q_3. This lack of differences on these particular factors would suggest that the Draper sample and the norm group of males score relatively the same regarding reservedness versus outgoingness (A), intelligence

TABLE 12

A COMPARISON OF 16 PF RAW SCORES OF THE TOTAL DRAPER SAMPLE TO THE GENERAL POPULATION NORM OF MALES

Factor	Interpretation low - high			Draper Scores N = 60	Norm Scores N = 1127	t Value
A	Reserved	-	Outgoing	9.35	9.67	-.74
B	Less intelligent	-	More intelligent	6.03	5.92	+.39
C	Affected by feelings	-	Emotionally stable	14.28	16.08	-3.61*
E	Humble	-	Assertive	12.78	13.51	-1.42
F	Desurgent	-	Surgent	15.68	13.38	+3.90*
G	Expedient	-	Conscientious	11.26	13.84	-5.41*
H	Shy	-	Venturesome	12.95	13.76	-1.23
I	Tough minded	-	Tender minded	8.20	8.39	-.41
L	Trusting	-	Suspicious	10.26	8.83	+3.31*
M	Practical	-	Imaginative	12.05	12.15	-.22
N	Forthright	-	Shrewd	10.45	11.70	-3.60*
O	Placid	-	Apprehensive	12.46	9.33	+6.42*
Q_1	Conservative	-	Experimenting	8.40	10.36	-5.16*
Q_2	Group dependent	-	Self sufficient	10.74	10.12	+1.38
Q_3	Undisciplined self-conflict	-	Controlled	10.88	11.13	-.60
Q_4	Relaxed	-	Tense	13.45	10.98	+3.75*

*Significant at the .05 level of confidence

(B), humbleness versus assertiveness (E), shyness versus venturesomeness (H), tough mindedness versus tender mindedness (I), practical versus imaginative (M), independence (Q_2), and self-control (Q_4).

Hypothesis five, which stated there will be no difference in the 16 PF raw score means between the total Draper sample and the clinical profile of convicted male criminals in prison, was rejected on nine factors. Presented in Table 13 are t-values which reflect the differences of 16 PF raw score means between the total Draper sample and the clinical profile of convicted male criminals in prison.

Results of the Draper and criminal profile 16 PF raw score means presented in Table 13 indicate there are significant differences between the total Draper sample and the clinical profile of convicted male criminals in prison on 9 of the 16 PF scales. The nine factors which indicate a significant difference between the Draper sample and the criminal profile are Factors B, C, E, F, I, N, O, Q_1 and Q_3. The scoring of these particular factors would suggest the following:

Factor B - The Draper sample is more intelligent than the criminal profile.

Factor C - The Draper sample is more emotionally stable than the criminal profile.

Factor E - The Draper sample is more assertive than the criminal profile.

Factor F - The Draper sample is more surgent than the criminal profile.

Factor I - The criminal profile is more tender minded than the Draper sample.

TABLE 13

A COMPARISON OF 16 PF RAW SCORES OF THE TOTAL DRAPER SAMPLE TO THE CLINICAL PROFILE OF CONVICTED MALE CRIMINALS IN PRISON

Factor	Interpretation low - high			Draper Scores N = 60	Crim. Prof. N = 891	t Value
A	Reserved	-	Outgoing	9.35	9.2	+.35
B	Less intelligent	-	More intelligent	6.03	4.1	+6.91*
C	Affected by feelings	-	Emotionally stable	14.28	12.2	+4.20*
E	Humble	-	Assertive	12.78	11.8	+4.00*
F	Desurgent	-	Surgent	15.68	10.0	+9.61*
G	Expedient	-	Conscientious	11.26	12.0	-1.52
H	Shy	-	Venturesome	12.95	13.5	-.80
I	Tough minded	-	Tender minded	8.20	9.8	-3.53*
L	Trusting	-	Suspicious	10.26	9.6	+1.53
M	Practical	-	Imaginative	12.05	12.6	-1.20
N	Forthright	-	Shrewd	10.45	11.2	-2.15*
O	Placid	-	Apprehensive	12.46	11.8	+5.05*
Q_1	Conservative	-	Experimenting	8.40	9.8	-3.72*
Q_2	Group dependent	-	Self sufficient	10.74	11.1	-.80
Q_3	Undisciplined self-conflict	-	Controlled	10.88	9.8	+2.57*
Q_4	Relaxed	-	Tense	13.45	12.2	+1.95

*Significant at the .05 level of confidence

Factor N - The criminal profile is more shrewd than the Draper sample.

Factor O - The Draper sample is more apprehensive than the criminal profile.

Factor Q_1 - The criminal profile is more experimenting than the Draper sample.

Factor Q_3 - The Draper sample is more self-controlled than the criminal profile.

No significant difference was found between the Draper sample and the criminal profile on Factors A, G, H, L, M, Q_2 and Q_4. This lack of differences on these particular factors would suggest that the Draper sample and the criminal profile score relatively the same regarding reservedness versus outgoingness (A), expediency versus conscientiousness (G), shyness versus venturesomeness (H), trusting versus suspiciousness (L), practical versus imaginative (M), independence (Q_2) and relaxed versus tense (Q_4).

Hypothesis six, which stated there will be no relationship between 16 PF raw scores and ages of the total Draper sample, was rejected on Factors G and I. Presented in Table 14 are correlation coefficients which reflect the relationship between 16 PF raw score means and ages for the total Draper sample.

The correlation coefficients presented in Table 14 indicate a positive relationship between age and Factor G (expediency versus conscientiousness) and a negative relationship between age and Factor I (tough mindedness versus tender mindedness).

The relatively low (.28) relationship of the ages of Draper inmates to Factor G tends to suggest that the older the inmate becomes

the higher he scores on this factor. The relatively low (-.29) relationship of the ages of Draper inmates to Faction I tends to suggest that the older the inmate becomes the lower he scores on this factor.

TABLE 14

RELATIONSHIP BETWEEN THE 16 PERSONALITY FACTOR RAW SCORES AND AGES OF THE TOTAL DRAPER SAMPLE COMPUTED BY THE PEARSON PRODUCT MOMENT CORRELATION

Factor	Interpretation low - high			r
A	Reserved	-	Outgoing	-.03
B	Less intelligent	-	More intelligent	-.13
C	Affected by feelings	-	Emotionally stable	-.06
E	Humble	-	Assertive	-.10
F	Desurgent	-	Surgent	.02
G	Expedient	-	Conscientious	.28*
H	Shy	-	Venturesome	-.05
I	Tough minded	-	Tender minded	-.29*
L	Trusting	-	Suspicious	-.21
M	Practical	-	Imaginative	-.02
N	Forthright	-	Shrewd	.17
O	Placid	-	Apprehensive	.10
Q_1	Conservative	-	Experimenting	-.03
Q_2	Group dependent	-	Self sufficient	-.05
Q_3	Undisciplined self-conflict	-	Controlled	-.10
Q_4	Relaxed	-	Tense	.00

*Significant at the .05 level of confidence

Hypothesis seven, which stated there will be no relationship between the 16 PF raw scores and time in prison of subjects of the total Draper sample, was rejected only on Factor I. Presented in

Table 15 are correlation coefficients which reflect the relationship between personality factor scores and time in prison for the total Draper sample.

The correlation coefficients presented in Table 15 indicate that something other than chance is operating to cause the relationship between time in prison and Factor I (tough mindedness versus tender mindedness). The relatively low (-.27) relationship of time in prison to Factor I tends to suggest that the longer an inmate remains in Draper the lower he scores on this factor.

TABLE 15

RELATIONSHIP BETWEEN THE 16 PERSONALITY FACTOR RAW SCORES AND TIME IN PRISON OF SUBJECTS OF THE TOTAL DRAPER SAMPLE COMPUTED BY THE PEARSON PRODUCT MOMENT CORRELATION

Factor	Interpretation low - high			r
A	Reserved	-	Outgoing	.04
B	Less intelligent	-	More intelligent	-.05
C	Affected by feelings	-	Emotionally stable	.09
E	Humble	-	Assertive	.13
F	Desurgent	-	Surgent	.07
G	Expedient	-	Conscientious	.02
H	Shy	-	Venturesome	-.05
I	Tough minded	-	Tender minded	-.27*
L	Trusting	-	Suspicious	-.16
M	Practical	-	Imaginative	-.10
N	Forthright	-	Shrewd	-.12
O	Placid	-	Apprehensive	.10
Q_1	Conservative	-	Experimenting	-.10
Q_2	Group dependent	-	Self sufficient	-.08
Q_3	Undisciplined self-conflict	-	Controlled	-.03
Q_4	Relaxed	-	Tense	-.00

*Significant at the .05 level of confidence

Hypothesis eight, which stated there will be no relationship between the 16 PF raw score means and disciplinary actions of subjects of the total Draper sample, was not rejected. Presented in Table 16 are correlation coefficients which reflect the relationship between personality factor raw score means and disciplinary actions for the total Draper sample.

The correlation coefficients presented in Table 16 indicate there is no significant relationship between 16 PF raw scores and disciplinary actions of the total Draper sample.

TABLE 16

RELATIONSHIP BETWEEN THE 16 PERSONALITY FACTOR RAW SCORES AND DISCIPLINARY ACTIONS OF SUBJECTS OF THE TOTAL DRAPER SAMPLE COMPUTED BY THE PEARSON PRODUCT MOMENT CORRELATION

Factor	Interpretation low - high			r
A	Reserved	-	Outgoing	-.01
B	Less intelligent	-	More intelligent	-.08
C	Affected by feelings	-	Emotionally stable	-.03
E	Humble	-	Assertive	.14
F	Desurgent	-	Surgent	-.04
G	Expedient	-	Conscientious	-.23
H	Shy	-	Venturesome	.03
I	Tough minded	-	Tender minded	.10
L	Trusting	-	Suspicious	.14
M	Practical	-	Imaginative	.19
N	Forthright	-	Shrewd	-.21
O	Placid	-	Apprehensive	-.04
Q_1	Conservative	-	Experimenting	-.10
Q_2	Group dependent	-	Self sufficient	.09
Q_3	Undisciplined self-conflict	-	Controlled	-.01
Q_4	Relaxed	-	Tense	.10

Hypothesis nine, which stated there will be no relationship between the 16 PF raw score means and reading scores of subjects of the total Draper sample, was rejected on Factors I and O. Presented in Table 17 are correlation coefficients which reflect the relationship between personality factor raw scores and reading scores for the total Draper sample.

The correlation coefficients presented in Table 17 indicate that something other than chance is operating to cause the positive relationship between reading scores and Factor I (tough minded versus tender minded), and a negative relationship between reading scores and Factor O (placid versus apprehensive).

The relatively low (.27) relationship of reading scores of Draper subjects to Factor I tends to suggest that those inmates who make higher reading scores also score higher on Factor I. The relatively low (-.29) relationship of reading scores of Draper subjects to Factor O tends to suggest that those inmates who score higher on reading also score lower on Factor O.

Although not utilized as part of this study in terms of hypothesis testing, it was felt that additional information would result from utilizing 16 PF raw scores, ages and reading scores of the total Draper sample as independent variables to predict the four dependent variables of student versus non-student status, first offender versus recidivist status, time in prison and disciplinary actions. In order to evaluate the efficacy of such an approach several steps had to be taken. First, the one best combination of all the variables used for

prediction had to be determined. Next, appropriate statistical analyses had to be performed upon this combination to determine if it differed significantly from chance in predicting the dependent variable. Finally, in analyzing the particular components of this combination of variables, each variable had to be examined to determine its relationship to the dependent variable. It also had to be determined if the independent variable explained more variation in the combination of variables than would be expected by chance occurrence alone.

TABLE 17

RELATIONSHIP BETWEEN 16 PERSONALITY FACTOR SCORES AND READING SCORES OF SUBJECTS OF THE TOTAL DRAPER SAMPLE COMPUTED BY THE PEARSON PRODUCT MOMENT CORRELATION

Factor	Interpretation low – high			r
A	Reserved	–	Outgoing	-.07
B	Less intelligent	–	More intelligent	.16
C	Affected by feelings	–	Emotionally stable	.05
E	Humble	–	Assertive	.14
F	Desurgent	–	Surgent	.15
G	Expedient	–	Conscientious	.10
H	Shy	–	Venturesome	.09
I	Tough minded	–	Tender minded	.27*
L	Trusting	–	Suspicious	.05
M	Practical	–	Imaginative	-.06
N	Forthright	–	Shrewd	.12
O	Placid	–	Apprehensive	-.29*
Q_1	Conservative	–	Experimenting	.03
Q_2	Group dependent	–	Self sufficient	.13
Q_3	Undisciplined Self-conflict	–	Controlled	.13
Q_4	Relaxed	–	Tense	-.24

*Significant at the .05 level of confidence

The statistical technique for prediction of a dichotomous variable is discriminant analysis. In this procedure an equation is derived that estimates which group or class an individual will fall based on analysis of the independent variables. Once the discriminant equation has been statistically derived, it is possible to perform certain analyses to determine the magnitude of the discriminant function. Specifically, it is possible to obtain an F ratio from an analysis of variance of the discriminant equation to determine if the equation predicts class membership significantly better than does chance; it is also possible to use the equation to predict class membership to be compared against actual class membership.

Since the dependent variables used in discriminant analysis are dichotomous one's or two's, it can be determined from the discriminant equation how many actual one's were classified or predicted as one's and how many were misclassified as two's.

Multiple linear regressional techniques were applied to the data to derive the one combination of independent variables that would explain the maximum amount of variation in the dependent variable. An analysis of variance statistical technique was then applied to this equation to determine if it explained a greater amount of variation in the dependent variable than would by expected by chance occurence alone. That is, was the regression equation significantly successful in predicting the dependent variables? If the regression equation was successful in predicting dependent variables, then additional steps would be taken to determine (1) which independent

variables were related to the dependent variable and (2) which independent variables contributed a significant amount of variation to the equation used for prediction.

Therefore, the statistical techniques of discriminant analysis and multiple regressional analysis are quite similar in concept, but differ in that the former predicts a discrete variable and the latter predicts a continuous variable. In this study discriminant analysis is used to predict the discrete variables of first offender versus recidivist and student versus non-student; multiple regressional analysis is used to predict the continuous variables of time in prison and disciplinary actions.

Results from a discriminant analysis using student versus non-student status of the total Draper sample as the dependent variable are presented in Tables 18 and 19, respectively.

The computed F ratio does not exceed the value necessary to be significant at the .05 level of confidence. Therefore, the discriminant analysis equation, using 16 PF raw scores, ages and reading scores of the total Draper sample as independent variables to predict student versus non-student status, does not exceed the variation expected on the basis of chance alone. It has not been statistically demonstrated that it is possible to use 16 PF raw scores, ages and reading scores to predict, with measurable accuracy, the dependent variable of student versus non-student status. The analysis of the discriminant function presented in Table 19 data indicates that the discriminant analysis correctly predicted the student versus non-student status of 42 subjects, but wrongly predicted the status of 18 subjects.

TABLE 18

COMPUTED VALUES OF DISCRIMINANT ANALYSIS PREDICTING STUDENT VERSUS NON-STUDENT STATUS OF THE TOTAL DRAPER SAMPLE WITH 16 PF RAW SCORES, AGES AND READING SCORES TREATED AS INDEPENDENT VARIABLES

Variable	Interpretation low - high			Discriminant Function Coefficient
Age				-0.03
Reading Score				-0.00
Factor				
A	Reserved	-	Outgoing	0.13
B	Less intelligent	-	More intelligent	0.89
C	Affected by feelings	-	Emotionally stable	0.00
E	Humble	-	Assertive	0.19
F	Desurgent	-	Surgent	-0.11
G	Expedient	-	Conscientious	-0.02
H	Shy	-	Venturesome	0.11
I	Tough minded	-	Tender minded	-0.12
L	Trusting	-	Suspicious	0.08
M	Practical	-	Imaginative	0.15
N	Forthright	-	Shrewd	0.00
O	Placid	-	Apprehensive	-0.24
Q_1	Conservative	-	Experimenting	-0.05
Q_2	Group dependent	-	Self sufficient	-0.01
Q_3	Undisciplined self-conflict	-	Controlled	0.08
Q_4	Relaxed	-	Tense	0.13
THE CONSTANT TERM FOR THE EQUATION IS				-8.93

TABLE 19

ANALYSIS OF DISCRIMINANT FUNCTION PREDICTING STUDENT VERSUS NON-STUDENT STATUS OF THE TOTAL DRAPER SAMPLE WITH 16 PF RAW SCORES, AGES AND READING SCORES TREATED AS THE INDEPENDENT VARIABLES

F ratio	Classification Table			
1.19			Predicted	
			student	non-student
	actual	student	19	11
		non-student	7	23

Results from a discriminant analysis using first offender versus recidivist status of the total Draper sample as the dependent variable are presented in Tables 20 and 21, respectively.

TABLE 20

COMPUTED VALUES OF DISCRIMINANT ANALYSIS PREDICTING FIRST OFFENDER VERSUS RECIDIVIST STATUS OF THE TOTAL DRAPER SAMPLE WITH 16 PF RAW SCORES, AGES AND READING SCORES TREATED AS INDEPENDENT VARIABLES

Variable	Interpretation low - high			Discriminant Function Coefficient
Age				-0.49
Reading Score				0.74
Factor				
A	Reserved	-	Outgoing	0.01
B	Less intelligent	-	More intelligent	0.01
C	Affected by feelings	-	Emotionally stable	-0.18
E	Humble	-	Assertive	-0.19
F	Desurgent	-	Surgent	0.02
G	Expedient	-	Conscientious	0.20
H	Shy	-	Venturesome	0.13
I	Tough minded	-	Tender minded	-0.05
L	Trusting	-	Suspicious	0.11
M	Practical	-	Imaginative	0.11
N	Forthright	-	Shrewd	-0.03
O	Placid	-	Apprehensive	0.11
Q_1	Conservative	-	Experimenting	0.05
Q_2	Group dependent	-	Self sufficient	0.13
Q_3	Undisciplined self-conflict	-	Controlled	-0.09
Q_4	Relaxed	-	Tense	-0.07
THE CONSTANT TERM FOR THE EQUATION IS				0.69

TABLE 21

ANALYSIS OF DISCRIMINANT FUNCTION PREDICTING FIRST OFFENDER VERSUS RECIDIVIST STATUS OF THE TOTAL DRAPER SAMPLE WITH 16 PF RAW SCORES, AGES AND READING SCORES TREATED AS THE INDEPENDENT VARIABLES

F ratio	Classification Table			
1.89*			Predicted	
			1st offender	recidivist
	actual	1st offender	26	4
		recidivist	7	23

*Significant at the .05 level of confidence

The computed F ratio does exceed the value necessary to be significant at the .05 level of confidence. The analysis of the discriminant analysis correctly predicted the first offender versus recidivist status of 49 subjects but incorrectly predicted the status of 11 subjects. Therefore, the discriminant analysis equation using 16 PF raw scores, ages and reading scores of the total Draper sample as independent variables to predict first offender versus recidivist status does explain an amount of variation in first offender versus recidivist status than would be expected by chance occurrence alone. Since it has been statistically demonstrated that it is possible to use 16 PF raw scores, ages and reading scores of the total Draper sample to predict first offender versus recidivist status, it must be determined which independent variables contributed a significant amount of variation to the discriminant analysis equation used for prediction.

Presented in Table 22 are t-values which indicate the significance of each independent variable in predicting the dependent variable of first offender versus recidivist status.

TABLE 22

COMPUTED t-VALUES USED IN PREDICTING FIRST OFFENDER VERSUS RECIDIVIST STATUS FROM THE INDEPENDENT VARIABLES OF 16 PF RAW SCORES, AGES AND READING SCORES FOR THE TOTAL DRAPER SAMPLE

Variable	Interpretation low - high			Computed t-Value
Age				4.73*
Reading Score				3.05*
Factor				
A	Reserved	-	Outgoing	0.45
B	Less intelligent	-	More intelligent	1.10
C	Affected by feelings	-	Emotionally stable	0.56
E	Humble	-	Assertive	0.49
F	Desurgent	-	Surgent	0.09
G	Expedient	-	Conscientious	0.34
H	Shy	-	Venturesome	0.36
I	Tough minded	-	Tender minded	1.87
L	Trusting	-	Suspicious	0.63
M	Practical	-	Imaginative	0.54
N	Forthright	-	Shrewd	0.23
O	Placid	-	Apprehensive	0.27
Q_1	Conservative	-	Experimenting	0.07
Q_2	Group dependent	-	Self sufficient	0.74
Q_3	Undisciplined self-conflict	-	Controlled	0.23
Q_4	Relaxed	-	Tense	0.47

*Significant at the .05 level of confidence

The independent variables of age and reading scores contribute to a significant amount of variation in the dependent variable of first offender versus recidivist status. There is a significant amount of difference in the ages of first offenders and recidivists with the recidivists being older. Reading scores of first offenders are significantly higher than those of recidivists. None of the 16 PF scales had significant t-values. This would indicate that 16 PF scores did not account for a significant amount of variation in first offender versus recidivist status, when the individual scales are used as predictors.

Results from the multiple regression and an analysis of variance statistical technique using time in prison of the total Draper sample as the dependent variable are presented in Tables 23 and 24, respectively.

The computed F ratio does exceed the value necessary to be significant at the .05 level of confidence. Therefore, the regression equation using 16 PF raw scores, ages and reading scores of the total Draper sample as independent variables to predict time in prison does explain an amount of variation in time-in-prison than would be expected by chance occurrence alone. Since it has been statistically demonstrated that it is possible to use 16 PF raw scores, ages and reading scores of the total Draper sample to predict time in prison, it must be determined which independent variables contributed a significant amount of variation to the equation used for prediction.

TABLE 23

COMPUTED VALUES OF MULTIPLE LINEAR REGRESSION PREDICTING TIME IN PRISON OF THE TOTAL DRAPER SAMPLE WITH 16 PF RAW SCORES, AGES AND READING SCORES TREATED AS INDEPENDENT VARIABLES

Variable	Interpretation low - high			Regression Coefficient
Age				-4.20
Reading Score				2.87
Factor				
A	Reserved	-	Outgoing	0.09
B	Less intelligent	-	More intelligent	0.93
C	Affected by feelings	-	Emotionally stable	1.09
E	Humble	-	Assertive	1.71
F	Desurgent	-	Surgent	0.04
G	Expedient	-	Conscientious	-0.68
H	Shy	-	Venturesome	-1.36
I	Tough minded	-	Tender minded	0.00
L	Trusting	-	Suspicious	-1.17
M	Practical	-	Imaginative	-0.48
N	Forthright	-	Shrewd	-1.19
O	Placid	-	Apprehensive	-0.66
Q_1	Conservative	-	Experimenting	-1.35
Q_2	Group dependent	-	Self sufficient	-0.40
Q_3	Undisciplined self-conflict	-	Controlled	0.98
Q_4	Relaxed	-	Tense	-0.10
THE INTERCEPT VALUE FOR THE EQUATION IS				23.52

TABLE 24

ANALYSIS OF VARIANCE FOR THE MULTIPLE LINEAR REGRESSION PREDICTING TIME IN PRISON OF THE TOTAL DRAPER SAMPLE WITH 16 PF RAW SCORES, AGES AND READING SCORES TREATED AS THE INDEPENDENT VARIABLES

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F-Value
Attributable to regression	18	16306.58	905.92	3.42*
Deviation from regression	41	10869.16	265.10	
TOTAL	59	27175.73		

*Significant at the .05 level of confidence

Presented in Table 25 are t-values which indicate the significance of each independent variable in predicting the dependent variable of time in prison.

TABLE 25

COMPUTED t-VALUES USED IN PREDICTING TIME IN PRISON FROM THE INDEPENDENT VARIABLES OF 16 PF RAW SCORES, AGES AND READING SCORES FOR THE TOTAL DRAPER SAMPLE

Variable	Interpretation low - high			Computed t-Value
Age				4.96
Reading Score				-2.43*
Factor				
A	Reserved	-	Outgoing	0.10
B	Less intelligent	-	More intelligent	0.75
C	Affected by feelings	-	Emotionally stable	1.39
E	Humble	-	Assertive	2.42*
F	Desurgent	-	Surgent	0.06
G	Expedient	-	Conscientious	-0.77
H	Shy	-	Venturesome	-2.29*
I	Tough minded	-	Tender minded	0.00
L	Trusting	-	Suspicious	-1.23
M	Practical	-	Imaginative	-0.65
N	Forthright	-	Shrewd	-1.39
O	Placid	-	Apprehensive	-0.73
Q_1	Conservative	-	Experimenting	-1.77
Q_2	Group dependent	-	Self sufficient	-0.52
Q_3	Undisciplined self-conflict	-	Controlled	1.19
Q_4	Relaxed	-	Tense	-0.13

*Significant at the .05 level of confidence.

The independent variables of age, reading score, Factor E (humble-assertive) and Factor H (shy-venturesome) contribute to

a significant amount of variation in the dependent variable of time in prison. Draper subjects who are on the higher end of the continuum of time in prison have lower reading scores, are older in age, score higher on the humble-assertive scale (E) and score lower on the shy-venturesome scale (H). These latter two scores could be interpreted to mean that the longer a man stays in prison the more assertive he becomes and the more shy he becomes. There are several difficulties in this apparent contradiction in scores on Factors E and H. However, it needs to be remembered that many shy people can become assertive in some type situations. Further interpretation of these scores on Factors E and H will be inserted in the discussion section of this study.

Results from a multiple regression and an analysis of variance statistical techniques using number of disciplinary actions of the total Draper sample as the dependent variable are presented in Tables 26 and 27, respectively. The computed F ratio does not exceed the value necessary to be significant at the .05 level of confidence. Therefore, the regression equation using 16 PF raw scores, ages and reading scores of the total Draper sample as independent variables to predict number of disciplinary actions does not exceed the variation expected on the basis of chance alone. It has not been statistically demonstrated that it is possible to use 16 PF raw scores, ages, and reading scores to predict, with measurable accuracy, the dependent variable of number of disciplinary actions.

TABLE 26

COMPUTED VALUES OF MULTIPLE LINEAR REGRESSION PREDICTING NUMBER OF DISCIPLINARY ACTIONS WITH 16 PF RAW SCORES, AGES AND READING SCORES OF DRAPER SUBJECTS TREATED AS INDEPENDENT VARIABLES AND DISCIPLINARY ACTIONS TREATED AS THE DEPENDENT VARIABLE

Variable	Interpretation low - high			Regression Coefficient
Age				0.03
Reading Score				-0.30
Factor				
A	Reserved	-	Outgoing	-0.27
B	Less intelligent	-	More intelligent	-0.37
C	Affected by feelings	-	Emotionally stable	-0.15
E	Humble	-	Assertive	0.38
F	Desurgent	-	Surgent	-0.18
G	Expedient	-	Conscientious	-0.24
H	Shy	-	Venturesome	0.20
I	Tough minded	-	Tender minded	0.14
L	Trusting	-	Suspicious	0.35
M	Practical	-	Imaginative	0.50
N	Forthright	-	Shrewd	-0.55
O	Placid	-	Apprehensive	-0.34
Q_1	Conservative	-	Experimenting	-0.64
Q_2	Group dependent	-	Self sufficient	0.25
Q_3	Undisciplined self-conflict	-	Controlled	0.53
Q_4	Relaxed	-	Tense	0.18

TABLE 27

ANALYSIS OF VARIANCE FOR THE MULTIPLE LINEAR REGRESSION PREDICTING NUMBER OF DISCIPLINARY ACTIONS OF THE TOTAL DRAPER SAMPLE WITH 16 PF RAW SCORES, AGES AND READING SCORES TREATED AS THE INDEPENDENT VARIABLES

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F-Value
Attributable to regression	18	1140.72	63.37	0.74
Deviation from regression	41	3524.21	85.95	
TOTAL	59	4664.93		

V. DISCUSSION

Before any discussion of this study is begun, it should be emphasized that this study is an "ex-post-facto" research. It was impossible for the investigator to manipulate any variables, for at the time of testing all the variables utilized in this study had already occurred. It was also impossible for the experimenter to randomly select subjects due both to the type of study as well as a limited number of inmates who met the criteria for being subjects. Criteria, including a seventh grade reading level for all 60 subjects and enrollment as a student in the Draper school for 30 of the subjects, definitely limited the number of inmates who could be utilized as subjects. Due to the limitations created by these criteria, an effort was made to match subjects and when this was not possible, to limit the ranges of all variables within narrow limits. For these reasons, the discussion and interpretation of the findings of this study should be considered with care and caution.

Significant differences which were found to exist in 16 PF raw score means among student first offenders, student recidivists, non-student first offenders and non-student recidivists (see Table 1) is attributable to mean differences on Factors B, C, E, I, L and Q_4 (see Tables 2 - 7). The t-values reported in Tables 2 through 7 also

revealed that age, time in prison and reading scores accounted for a significant amount of variation among the four Draper subgroups.

On the 16 PF scale B (intelligence) the non-student recidivists were less intelligent than student first offenders, student recidivists and non-student first offenders; student first offenders were more intelligent than non-student first offenders. On the 16 PF scale C (affected by feelings-emotionally stable) the non-student recidivists were more emotionally stable than student recidivists and non-student first offenders. On the 16 PF scale E (humble-assertive) the student recidivists were more assertive than non-student first offenders and non-student recidivists. On the 16 PF scale L (trusting-suspicious) the non-student recidivists were more suspicious than student recidivists and non-student first offenders. On the 16 PF scale I (tough minded-tender minded) the student recidivists were more tough minded than the non-student first offenders. On the 16 PF scale Q_4 (relaxed-tense) the student recidivists were more tense than the non-student recidivists. The mean score differences on these scales (B, C, E, I, L, Q_4) suggest that personality factors related to intelligence (B) and anxiety level (C, L, Q_4) discriminated prisoners of the four Draper subgroups. Since the E and I scales are also related to one's anxiety level, this would offer supportive evidence that anxiety level is a discriminator for the Draper subgroups.

Another fact emerged from these comparisons of the four subgroups. Scores of non-student recidivists on anxiety level scales indicated a lower anxiety level and better emotional stability than

other subgroups; however, non-student recidivists scored lower on intelligence than other subgroups. Perhaps, these scores of non-student recidivists indicate there is a positive relationship between intelligence and scales related to anxiety level.

The 16 PF scales failed to discriminate between Draper students versus non-students (see Table 8). However, a positive correlation coefficient was found between student versus non-student status, with students scoring higher on Factor B (intelligence) (see Table 9). A correlation coefficient also revealed that the Factor E scale (humble-assertive) is related to student versus non-student status, with students scoring higher; perhaps students are more assertive than non-students. It was expected that students would score higher than non-students on Factor B (intelligence). Prisoners entering Draper score in a narrow range at the lower end of the intelligence continuum as represented by reading tests.

The 16 PF scales failed to discriminate between Draper first offenders versus recidivists (see Table 10).

Perhaps it is most meaningful to discuss the comparison of 16 PF raw score means of the Draper group and the norm group of males in terms of pro-social (norm) behavior versus anti-social (Draper) behavior (see Table 12). That is, would the direction of the differences (higher than or lower than) for each 16 PF score for the norm group versus the Draper group seem to be indicative of pro-social or anti-social behavior. There is an unavoidable problem in this kind of discussion. An arbitrary decision has to be made concerning

the relationship between each 16 PF score and its measurement of pro-social or anti-social behavior. For example, is one who scores low on Factor A and is called "reserved" in his behavior more likely to act in anti-social manner than one who scores high on Factor A and is called "outgoing" in his behavior? Perhaps one way to answer this question is to suggest that reserved or outgoing behavior is conducive to criminal behavior to the degree to which it is unsatisfying to the behaving organism. To determine whether or not a particular factor score is indicative of satisfying behavior would require an individual study of each subject which is not within the realm of this study. However, certain 16 PF scales seem to measure criminal traits or at least measure some potentiality for criminal behavior. For example, previous studies have found criminal behavior related to restlessness, irritability, impulsiveness, depression, suspiciousness, hostility, aggressiveness, non-submissiveness to authority, resentful of criticism, concretistic thinking and a lower educational level (Glueck, 1965 c; Siegel, 1963 c; Pine, 1964 c; Caplan and Powell, 1964 c). These previous findings can aid in alleviating some of the arbitrariness necessary in interpreting the comparative scores of the norm and Draper groups.

Based on previous studies of Glueck (1965 d) and Siegel (1963 d) it would be expected that the total Draper group would score low (affected by feelings) on Factor C and the norm group high (emotionally stable). The norm group did score higher than the total Draper group and the difference was significant.

It is possible, although speculative, that the lack of significant differences of 16 PF scores between the total Draper group and the norm group on 16 PF scales B (intelligence), E (humble-assertive), H (shy-venturesome), I (tough minded-tender minded), M (practical imaginative, Q_2 (group dependent-self sufficient) and Q_3 (undisciplined self conflict-controlled) means that these particular scales are not measuring any personality trait that Glueck (1965 e) and Siegel (1963 e) found to be related to criminal behavior. However, it is especially difficult to understand why a significant difference did not manifest itself on Factor Q_3. The authors of the 16 PF state that this factor is hypothetically related to the extent to which one "has crystallized for himself a clear, consistent, admired pattern of socially approved behavior, to which he strives to conform" (Cattell and Eber, 1957 c, p. 19). This hypothetical definition of Factor Q_3 would seem to indicate that it should be a discriminator between pro-social and anti-social (criminal) behavior. Why it doesn't, remains an open question.

It is possible, although speculative, that significant differences found on certain 16 PF scores between the norm group and total Draper group can be interpreted as meaning that these particular 16 PF scales are measuring personality traits that Glueck (1965 f) and Siegel (1963 f) found to be related to criminal behavior. Those traits whose scores were indicative of significant differences between the norm group and the total Draper group were Factor C (affected by feelings-emotionally stable) which has been

discussed; Factor F (desurgent-surgent) in which the Draper group scored lower (desurgent) than the norm group; Factor G (expedient-conscientious) in which the Draper group scored higher (conscientious) than the norm group; Factor L (trusting-suspicious) in which the Draper group scored higher (suspicious) than the norm group; Factor N (forthright-shrewd) in which the Draper group scored lower (forthright) than the norm group; Factor O (placid-apprehensive) in which the Draper group scored higher (apprehensive) than the norm group; Factor Q_1 (conservative-experimenting) in which the Draper group scored lower (conservative) than the norm group; Factor Q_4 (relaxed-tense) in which the Draper group scored higher (tense) than the norm group. The differences between the norm and Draper groups on Factors C (affected by feelings-emotionally stable), L (trusting-suspicious), O (placid-apprehensive) and Q_4 (relaxed-tense) may indicate that the total Draper group is manifesting more anxiety than the norm group. This interpretation would be supported by the findings of Glueck (1965 g) and Siegel (1963 g).

An inherent problem in comparing a prison sample with a norm group of males is the inability of the testor and/or the testing instrument to determine the societal frame of reference in which the prisoner answers test questions. Does the prisoner answer questions in terms of his membership in the sub-culture of the criminal population or in terms of his striving or non-striving to be a member of society-at-large? (An example of this is the scoring on Factor N (forthright-shrewd) in which the Draper sample

scored lower (more forthright) than the norm group. Does this mean that Draper subjects are more forthright in their relationships with their criminal peers or with those people who manifest pro-social behavior such as prison officials? More research would be needed to answer this question.

In discussing 16 PF raw score mean differences between the total Draper group and the clinical profile of convicted male criminals in prisoners, the relative lack of homogeneity of the clinical profile group should be pointed out. This latter group of 891 prisoners is actually comprised of one group of petty offenders, a group of hardened psychopaths, a group of Australian prisoners and a group of youthful offenders involved in an intensive three weeks physical fitness program. Although the total Draper group is also lacking in complete homogeneity, it is more homogeneous on the variables of culture, rehabilitation and type of crime than the clinical profile of convicted criminals. That is, the total Draper group are from the U.S.A., fifty per cent of them are undergoing rehabilitation in the form of education and the great majority of them are in prison for crimes committed against property.

No significant differences on 16 PF raw score means between the total Draper group and the clinical profile of criminals were found to exist on Factors A (reserved-outgoing), G (expedient-conscientious), H (shy-venturesome), L (trusting-suspicious), M (practical-imaginative), Q_2 (group dependent-self sufficient) and Q_4 (relaxed-tense) (see Table 13). It seems likely that Factors

A, M and Q_2 represent personality traits on which all criminals score within a relatively small range. This interpreation is supported by the fact that there was little difference in 16 PF scores on these three factors (A, M and Q_2) for the four Draper subgroups of student first offenders, student recidivists, non-student first offenders and non-student recidivists. These three factors (A, M and Q_2) also had small score differences between Draper students and non-students and between Draper first offenders and recidivists. It is difficult to speculate why no significant differences were found to exist between the total Draper group and the clinical profile of criminals on 16 PF scores of Factors G, H, L and Q_4. It is possible, although speculative, that significant differences could be found to exist between one or more of the Draper subgroups (SFO, SR, NSFO, NSR) and the clinical profile of criminals on some of these factors (G, H, L, Q_4).

Significant differences in 16 PF raw score means on Factors B (intelligence), C (affected by feelings-emotionally stable), E (humble-assertive), F (desurgent-surgent), I (tough minded-tender minded), N (forthright-shrewd), O (placid-apprehensive), Q_1 (conservative-experimenting) and Q_3 (undisciplined self conflict-controlled) were found to exist between the total Draper sample and convicted criminals in prison (see Table 13). It is possible, although speculative, that the direction of some of these differences is related to rehavilitative efforts made on the Draper prisoners and the relative lack of rehabilitative measures made on the clinical profile of

prisoners. For example, Draper prisoners scored higher on Factor B (intelligence); Draper prisoners scored higher on Factor C (emotionally stable); Draper prisoners scored higher on Factor E (assertive); Draper prisoners scored higher on Factor F (surgent); Draper prisoners scored higher on Factor Q_3 (controlled); Draper prisoners scored lower on Factor N (forthright). At first glance, it appears that the direction of differences on 16 PF scores of Factors I (tough minded-tender minded) and O (placid-apprehensive) between the total Draper group and the criminal profile of prisoners contradicts rehabilitative efforts made on Draper prisoners. That is, Draper prisoners scored lower (tough minded) on Factor I and higher (apprehensive) on Factor O. However, the authors of the 16 PF believe a lower score on Factor I is related to a realistic orientation; the authors of the 16 PF also state that higher scores on Factor I tend to be significantly associated with mental breakdown (Cattell and Eber, 1957 d). The authors of the 16 PF report that Factor O scores are "very low in convicts and most distinguishes those who act out their maladjustment from those who suffer it as an internal conflict" (Cattell and Eber, 1957 e, p. 18). Thus, scores of Draper prisoners on Factor I and O, when compared to a clinical profile of prisoners, give some evidence that Draper prisoners are more inclined to behave in a pro-social manner than the clinical profile of prisoners.

A positive correlation coefficient was found between ages of the total Draper sample and Factor G (expedient-conscientious); a negative correlation coefficient was found between ages and Factor I (tough minded-tender minded) (see Table 14).

These two relationships suggest that the older a Draper inmate becomes he tends to have more regard for moral standards (G+) and becomes more reality oriented (I-).

A negative correlation coefficient was also found between Factor I and time in prison, with the Draper prisoner tending to become more reality oriented the longer he remains in prison (see Table 15). Perhaps this reality orientation is in terms of society's demands for pro-social behavior or obedience to its laws, which the prisoner learns in prison through the disciplinary demands of prison authorities.

A positive correlation coefficient was found between Factor I and reading scores; a negative correlation coefficient was found between Factor O and reading scores (see Table 17). The positive relationship suggests that better readers tend to score as I+ (tender minded); the negative relationship suggests that better readers tend to score as O- (placid).

The fact that 16 PF raw scores, ages and reading scores did not predict student versus non-student status is a matter for conjecture (see Table 19). This could possibly mean that personality, or at least personality as measured by the 16 PF, is not a primary factor in determining whether or not an inmate becomes a student or remains a non-student. Perhaps scores on some other instrument such as the Minnesota Multiphasic Personality Inventory could predict student versus non-student status. Further research would have to be undertaken to determine whether personality is unrelated in

determining student versus non-student status or present tests are not measuring some unique personality factors of the male criminal that influence his educational aspirations.

Age as a non-predictor of student versus non-student status would be some indication that the Draper inmate does not let increasing age prevent him from continuing his education.

Insofar as the inmate's reading score is an index to his current educational level, perhaps the inability of reading scores to predict student versus non-student status means that the educational level (low or high) does not determine student versus non-student status.

The 16 PF raw scores, ages and reading scores did predict first offender versus recidivist status (see Table 21). The t-values indicated that age and reading scores account for a significant amount of variation in the first offender versus recidivist status. There is a tendency for first offenders to make higher reading scores. To express this another way, as reading scores decrease the number of recidivists increase. Also, as age increases, the number of recidivists increase. None of the 16 PF scales contributed to a significant amount of variation in first offender versus recidivist status.

Age as a predictor of first offender versus recidivist status would indicate that criminal behavior, defined as number of convictions and imprisonments, continues and increases with age. Further research would be needed to determine if recidivism as related to age reaches a point of diminishing returns. That is, at a certain age does recidivism tend to decrease and eventually be extinguished?

The fact that t-values of the 16 PF scales indicated a failure of the scales to predict first offender versus recidivist status could mean that personality factors are unrelated to the rate of recidivism (see Table 22). It could also mean that the 16 PF is measuring personality factors that are unrelated to the rate of recidivism. Further research is needed in this area to find supportive evidence for either possibility.

The 16 PF raw scores, ages and reading scores did predict the dependent variable of time in prison (see Table 24). Insofar as rate of recidivism and time in prison are positively related it would be expected for inmates to have lower reading scores who have been in prison a longer period of time.[9] Reading scores did predict the time in prison of inmates, with those inmates who had been in prison for longer periods of time making the lower reading scores.

Age as a predictor of time in prison would support a previous finding of this study which indicated that rate of recidivism can be predicted from age. Age then would seem to be positively related to both recidivism and time in prison.

There would appear to be an apparent contradiction in the way that 16 PF scales E (humble-assertive) and H (shy-venturesome) predicted time in prison (see Table 25). That is, inmates who have been in prison for longer periods of time scored E+ (assertive) and H- (shy). This is a contradiction to the extent that assertive behavior is generally

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[9]It has already been found in this study that recidivists tend to have lower reading scores.

thought of as the opposite of behavior manifested by shyness. This contradiction could be reconciled by the following tentative construct: In answering questions related to the E scale the inmate answered in terms of his behavior as related to other inmates; the longer he remains in prison the more assertive the inmate becomes toward his fellow inmates. In answering questions related to the H scale the inmate answered in terms of his behavior as related to prison authorities; the longer he remains in prison the more shy or withdrawn the inmate becomes in his relationships with prison authorities. The fact that the criminal or inmate lives in a convict culture which is anti-social in behavior means that his behavior is generally accepted in the convict culture and is not accepted in society-at-large. Thus, the criminal or inmate has to adopt different behavioral attitudes in his own convict culture and in society-at-large. Another possibility would be that these two scales (E and H) of the 16 PF are not measuring personality factors they are purported to be measuring. More research is needed with the 16 PF, utilized as a testing instrument with a criminal population, before any conclusion could be reached in this area.

The 16 PF raw scores, ages and reading scores did not predict number of disciplinary actions (see Table 27). Why these particular independent variables did not predict disciplinary actions is a matter of speculation or conjecture. There may be other variables that are more related to an inmate's ability or desire to adjust to a prison environment, as measured by his number of disciplinary

actions, than the ones used in this study. It is possible, although speculative, that more related variables to prison adjustment would include the inmate's attitude toward authority, his self concept and his socio-cultural classification. At least one author believes these above mentioned variables are related to criminal behavior (Glueck, 1965 h). It seems logical to assume they would also be related to his environmental adjustment in prison. However, further research would be needed to determine which variables are accounting for adjustment to prison environment as measured by the number of disciplinary actions.

An important contaminating factor in trying to determine which variables account for disciplinary actions is the individual inmate's relationships with particular prison authorities. For example, it is possible that the number of disciplinary actions an inmate has is more dependent on the dependency needs of his immediate superior (the guard on his cellblock for example) than any factor or characteristic related to the inmate. The level of behavioral control of the inmate by different prisons and by guards within the same prison varies to some degree. Thus, a prison administration or a prison guard who is very strict and rigid in his behavioral control of inmates may have more or less disciplinary problems than one which is lax in behavioral control. In either case, the determining factor for the number of disciplinary actions is not entirely the behavior of the inmate but is also contaminated or influenced by the prison's attitude toward discipline of the inmate.

VI. SUMMARY AND CONCLUSIONS

The Sixteen Personality Factor Questionnaire-Form A was administered to a sample group of 60 prisoners at Draper Correctional Center in Elmore, Alabama. This sample of 60 prisoners were divided into the following four subgroups of 15 prisoners each; student first offenders who were inmates enrolled as students in the vocational school and were in prison for their first conviction of a felony offense; student recidivists who were enrolled in the vocational school and were in prison for their second conviction or more of a felony offense; non-student first offenders who were not enrolled in the school and were in prison for their first convic of a felony offense; non-student recidivists who were not enrolled in the school and were in prison for their second conviction or more of a felony offense.

The total sample of 60 prisoners had a 7.1 grade level equivalent score higher as determined by their score on the reading subtest of the Metropolitan Achievement Test Advanced Form A-M. All 60 subjects were paid fifty cents each for taking the 16 PF; the non-student subjects were also paid twenty-five cents for taking the reading test because no reading score was available for them.

An analysis of variance statistic was computed to determine differences of 16 PF raw score means among these four subgroups,

between students versus non-students and between first offenders versus recidivists. Significant differences at the .05 level of confidence were found among the four subgroups; no significant differences were found between students versus non-students nor between first offenders versus recidivists.

The 16 PF raw score means were compared for differences between the total Draper sample and a general population norm of males; 16 PF raw score means were compared for differences between the total Draper sample and a clinical profile of convicted male criminals in prison. The t-test statistic was used to test differences between the total Draper sample and the norm population and/or the clinical profile of male criminals in prison. Significant differences at the .05 level of confidence were found on 8 of the 16 PF scales between the total Draper sample and the general population norm of males. Significant differences at the .05 level of confidence were found on 9 of the 16 PF scales between the total Draper sample and the clinical profile of male criminals.

Correlation coefficients indicated the following relationships: a positive relationship between the 16 PF scale G and age; a negative relationship between I and age; a negative relationship between I and time in prison; a positive relationship between I and reading scores; a negative relationship between O and reading scores. Disciplinary actions were not related to the 16 PF scales.

To test the predictability of student versus non-student status and first offender versus recidivist status from the independent

variables of 16 PF raw scores, ages and reading scores, a discriminant analysis statistic was used; to test the predictability of time in prison and number of disciplinary actions from the independent variables of 16 PF raw scores, ages and reading scores, a multiple regression statistic was used. These independent variables predicted first offender-versus recidivist status and time in prison but did not predict student versus non-student status nor number of disciplinary actions.

Based on the results of this study of prison sample groups the following conclusions were reached:

1. School enrollment either aids in raising the intelligence level of prisoners or the more intelligent prisoners become students. (Since this is an ex-post-facto study, this must be a tentative conclusion)
2. Personality factors related to intelligence and anxiety level discriminate prisoners among the four Draper subgroups.
3. Adjustment in prison, as measured by the number of disciplinary actions, is not related to any personality factors, as measured by the 16 PF.
4. Personality, as measured by the 16 PF, is not a predictor of student versus non-student status for Draper prisoners.
5. The age of Draper prisoners does not influence their decisions as to whether or not they continue their education.

6. There was some indication that Draper subjects answered some of the 16 PF test questions in terms of their relationships to their inmate peers and other questions in terms of their relationship to society-at-large. (This would explain some of the apparent contradictions in the 16 PF scores, for the prisoners' perception of these two groups (criminal group and society-at-large) is quite different - in the former he feels accepted and in the latter he feels unaccepted.)
7. Contaminating influences account for some of the variation in the prisoners' ability or inability to adjust to a prison setting.

Recommendations

Based on the results of this study, the following recommendations are made for further study.

1. An experimental study, utilizing the same categories of Draper subgroups (student first offenders, student recidivists, non-student first offenders and non-student recidivists), in which the 16 PF is administered to students before they enter school and after their completion of school; non-students would be administered the 16 PF at the time of their commitment to Draper and again six months later to account for the same time interval between

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tests as for the students. This type study would more adequately indicate what influence, if any, the Draper school is having on the personality of prisoners as measured by the 16 PF.

2. Additional research is needed to determine which personality, behavioral and perceptual aspects of the criminal cause him to answer some questions in terms of his membership in the sub-culture of the criminal population and to answer others in terms of his perception of society-at-large.
3. Additional research is needed to determine what environmental and behavioral factors are related to the prisoners' ability or inability to adjust to a prison environment.

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APPENDIX A

SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE-FORM A

PLEASE NOTE:

"Sixteen Personality Factor Questionnaire-Form A", Appendix A, © 1962 by The Institute for Personality & Ability Testing not microfilmed at request of author. This is available for consultation at Auburn University Library.

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APPENDIX B

FACT SHEET

FACT SHEET

Experimental and Demonstration Project
MDTA of 1962 (Public Law 89-15)
Draper Correctional Center
Elmore, Alabama 36025

Grantors: U. S. Department of Health, Education, and Welfare
U. S. Department of Labor
Grantee: Rehabilitation Research Foundation

Data Accumulated from October 1, 1964, to May 1, 1967

INMATE DATA

810	Applied for training
610	Received prevocational training
331	Accepted for vocational training
231	Completed training
63	Currently in training
38	Dropped before completion of training
18	Good cause
20	Bad cause
56	Waived early parole to complete training
7	Gave up good time to complete training
207	Graduates released (1 graduate deceased)
153	Paroled
44	Completed sentence
9	Holdovers
197	Placed in jobs
161	Training related
36	Non-related
24	Graduates awaiting release
46	Graduates returned to prison or jail (22%)
32	Technical violation (70%)
14	Committed new crime (30%)