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PERSONALITY CORRELATES OF ILLEGAL DRUG USERS, ALCOHOLICS, AND CONTROLS IN CRIMINAL AND NON-CRIMINAL POPULATIONS

by

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ABSTRACT

The aim of this study was to find personality correlates that would differentiate alcoholics, illegal drug users and controls in criminal and non-criminal populations. Six measures were chosen to be used. These were three scales from the "California Personality Inventory" (CPI) (Gough, 1957), responsibility, socialization and well-being; two measures of hostility as presented in the "Hostility and Direction of Hostility Questionnaire, amount of hostility and direction of hostility; and one measure of anxiety taken from Wolpe's (1958) version of the Willougby Emotional Maturity Scale (Willoughby, 1932).

There were three basic hypotheses. First, that illegal drug users and alcoholics would not score as highly as the controls on the three CPI scales but would score higher than controls on the amount of hostility measure. Second, that the criminals would score lower than the non-criminals on the CPI measures and higher on the amount of hostility measure. Third on the direction of hostility score, it was predicted that an interaction would occur as a result of the postulation that non-criminal illegal drug users would respond as would criminal illegal drug users.

The first hypothesis was basically accepted. Two limitations have to be considered. First two of the CPI measures (socialization and well-being) were highly correlated suggesting that only one element was differentiating. Second, alcoholics had significantly higher scores on responsibility than did illegal drug users.

The second hypothesis also appeared valid. Every difference occurred significantly in the direction predicted. Because all of these

differences were highly correlated and dropped to insignificance when socialization was used as a covariate in an Analysis of Covariance it was suggested that one basic element was differentiating.

The third hypothesis was not accepted. An interaction did occur on the direction of hostility measure but not for the reason predicted. It occurred because non-criminal alcoholics had the only inwardly directed hostility score.

In conclusion three differentiating elements were suggested that could separate these groups. These were "SWb(-AH)," an interpersonal skill; the variable responsibility and the measure direction of hostility.

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TO MY GRANDMOTHER,

MRS. MYRTLE ESTEY

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INTRODUCTION

Drug usage is not a discovery of modern man. Egyptian farmers made their own beer in 4500 B.C. (Linton, 1955). Opium was used in Cyprus, Crete and Greece around 2000 B.C. (Kritikos and Papadaki, 1963; Merrillees, 1962, 1963, in Blum, 1969). The earliest verifiable use of cannabis is thought to be approximately 430 B.C. (Rudenko, 1953, in Blum, 1969). Drug usage has been a behaviour pattern available to man throughout recorded history. However, the concern with the frequency of drug use in the last five years is increasing. New laws prohibiting use of previously unknown drugs are being strictly enforced. The federal government, realizing the existence of this social problem, has appointed the Le Dain Commission to investigate extensively the "Non Medical Use of Drugs."

The general purpose of this study is to compare some of the important personality traits of individuals who use legal or illegal drugs with individuals who do not use drugs. The traits of primary concern are those of socialization, responsibility, well-being, anxiety and hostility. These measurements are being undertaken in the belief that if the predominant characteristic of those individuals who have chosen the alternative of drug usage were known this knowledge would certainly add to an understanding of the phenomena.

Illegal Drug Use. In the past decade information concerning the incidence of illegal drug use has been collected. Studies of university populations indicate an increase in the incidence of drug use since 1965. In that year Pearlman (1967) reported that at Brooklyn College

4% had used marijuana while in 1969, at the University of Michigan, 44% of the students stated that they had used marijuana (Francis and Patch, 1969). In three successive studies carried out on the campus of the University of Maryland, the use of marijuana increased from 15% in 1967 to 24% in 1968 to 36% in 1969 (McKenzie, 1969). Similiar rises in the use of more exotic drugs have also been recorded (Berg, 1970).

This sizable increase in the use of illegal drugs is also occurring in non-university populations. In the Haight-Ashbury district a population from a hippie sub-culture indicated nearly 100% had used marijuana (Shick, et. al., 1968). In a study conducted by the Boston Globe (March, 1970) 26% of a sample of employed youth between the ages of 16 and 23 reported having used marijuana (Berg, 1970). Drug addiction among minority groups is increasing (O'Donnell and Ball, 1966). In a Gallup Poll conducted in the United States in 1969 surveying the adult population 21 years and over, marijuana use was reported by 12% of the 21 to 29 year old group, 3% of those 30 to 49 years old and 1% of those 50 years old and over (Gallup, 1969).

Berg (1970) has compiled 69 studies dealing with the incidence of drug use. She says, "What may have been a social problem affecting one sector of our society (inner city residences) suddenly embraced, and had consequence for, all sectors of American society." This rise in the use of illegal drugs has resulted in research into the etiology of illegal drug use.

Personality measures have been used to investigate the personality types of illegal drug users. Gerard & Kornetsky (1955) found that their adolescent addicted group projected differently from a control group on

six of the nine Rorschach measures predicted to differentiate. They state, "The addicts showed little ability to respond with fantasy or with emotionally-determined material." This study has interesting sociological overtones. They found that the drug addict rated higher on the variables "maternal educational status," and "occupational status of the major wage earner of the family." The authors conclude from this that a crucial prerequisite to addiction is high parental expectencies in educational and vocational areas in the absence of realistic appraisal of their off-spring's ability to achieve. They note that there is "an orientation toward status goals rather than toward goals of satisfaction and security," (Gerard, et. al., 1955). If this impression is an accurate one, the drug users' attitude toward himself would be negative. His feelings of well-being would not be high because of his inability to achieve the goals set by his parents.

The Minnesota Multiphasic Personality Inventory (MMPI), a quantifiable measure of personality, has been used by Hill, Haertzen and Davis (1962), Gilbert and Lombardi (1967), McAree, Steffenhagen, and Zheutlin (1969), and Gendreau & Gendreau (1970) in studying illegal drug users. On the average, in all of the studies illegal drug users had scores which fell in the abnormal range. The "psychopathic deviate" score was the highest mean score for drug addicts in all of the studies except that of McAree, Steffenhagen and Zheutlin (1969). There group of drug users was younger in age than the other addicted groups showing high "psychopathic deviate" scores and in addition was described not as addicted, but as "gross multiple users of drugs." They pointed out that:

"In terms of pathology, the outstanding scale for the gross

> multiple user is the schizophrenic (Sc) scale. Out interpretation of this has not been one of overt psychosis but a feeling that this represents such schizoid personal characteristics as withdrawal and poor interpersonal relationships, aloofness and an inability to express emotions" (McAree et. al., 1969).

Similarily, Gilbert et. al.'s (1967) drug group was also a young group. They reported abnormally high scores on the scales of "depression" and "psychasthenia" as well as the "psychopathic deviate" scale. All of these MMPI studies except one found significant differences between the drug group and the control group.

Gendreau & Gendreau (1970) found no significant differences on MMPI scores between addicts and controls. Their control samples were drawn from a population made up of non-addicted drug "pushers," drug users, and heavy drinkers. Also, the control group and the experimental group had served penitentiary sentences of two years or more. Thus the lack of significant differences may reflect the large overlap between these two groups. The failure of the study may lie in the effort to distinquish criminal addicts from criminal heavy drug users.

Results from the MMPI indicate that measures recording hostility may differentiate between drug users and non-drug users. Also, as pointed out by McAree et. al. (1970) the high schizophrenic score of the multiple drug user may be indicative of immature socialization ability.

Edwards, Bloom & Cohen (1969) in an article titled "The Psychedelics: Love or Hostility Potion" were particularly interested in the drug users response to frustration. They compared an experimental group, containing individuals who had taken LSD fifteen or more times with a primarily non-drug group. Each group completed the "Comprey Personality

Inventory" and the "Rosenzweigh Picture Frustration Study." For the five bipolar personality traits of the Comprey Personality Inventory (Shyness, Dependency, Empathy, Neuroticism, Compulsion and Hostility) only hostility and dependency significantly differentiated between the two groups. "The drug group were less dependent and more hostile than their controls" (Edwards, et al., 1969). Thus again hostility appears to be of importance with regard to the drug phenomenon.

Cockett and Marks (1969) conducted a study dealing with juvenile delinquents that had been directed to a remand home. They used the 16PF (Cattell and Eber, 1954) and the HDHQ (Hostility and Direction of Hostility Questionnaire, Caine et. al., 1967). Using a liquid chromatography method of urine analysis they separated those who had positive indications of amphetamine use, 6.9% (67/972), from those who showed no indication through urine analysis of amphetamine taking. Upon comparing 32 positives and 50 negatives they found that the positives had slightly and significantly higher total hostility scores and a mean direction of hostility score which was positive (i.e., intro-punitive) and significantly different from the mean of zero for the negative controls. They state:

> "The amphetamine-takers thus appear more self-critical and guilty in feelings than non-takers suggesting more conflict within themselves" (Cockett and Marks, 1969).

The 16PF test was used and

> ". . . differences were found in mean scores at a significant ($p < .05$) or near significant ($p < .10$) level on five factors: MD (lie scale), H (adventuresome vs. timid), L (suspecting vs. accepting), O (guilt prone vs. confident) and Q (radicalism vs. conservatism)" (Cockett and Marks, 1969).

In summary, within a number of studies that compared illegal drug users with non-users differences in hostility expression were found. It was also suggested that feelings of well-being and socialization ability would be lower for the illegal drug user. Similar characteristics have been found in alcoholic populations.

Legal Drug Use--Alcoholism. The search for an "alcoholic" personality has been conducted for a number of years in the hope of isolating a personality configuration unique for alcoholics. The results have been meagre. No specific pattern of personality traits that can be associated with alcoholism alone have been found. But certain more general characteristics have been pointed out. Halpern (1946) found that alcoholics scored highly on adventure items as presented on the Strong Vocational Interest Blank. Specific occupations such as 'auto racer' and 'state trooper' often predominated. He concluded that this adventure seeking nature of the alcoholic was indicative of immature personality development.

Manson (1949) also found certain general characteristics of alcoholics. He compared 404 alcoholics with 474 non-alcoholics on personality tests and found that 63 percent of male alcoholics and 71% of female alcoholics revealed "large numbers" of psychoneurotic symptoms compared with 18% of the non-alcoholic group.

Hurwitz and Lelos (1968) commented on the alcoholics ability to express hostility. They studied one group of thrity-six alcoholics and attempted to take into account their assumption that the personality operates at different levels. One conclusion they drew from the study of this group of alcoholics was that "Sixty-nine per cent [of alcoholics]

when sober, do not give overt expression to their underlying feelings which are generally those of hostility." They also found that none of the alcoholics perceived other men as being passive. This suggests that alcoholics see other males as being potentially threatening. Hostility, its expression and its perceived nature in others, appears to be a contributing factor in the development of alcoholism.

Button (1956) used the MMPI in assessing 64 institutionalized alcoholics. The two high scores that consistently appeared were: "psychopathic deviate" and "depression." Neither score mean for the group was in the abnormal range. Button also comments upon the expression of hostility as being of key importance. He says, "It [psychopathic anxiety] is a condition that can be resolved unsuccessfully by liquor, which simultaneously allows expression of hostility implied in psychopathy (whether inwardly or outwardly) and dulling of the concommitant anxiety." When a cluster analysis was applied to the MMPI scores the basic high "psychopathic deviate/depression" profile did not change.

When alcoholics are assessed immaturity, hostility and depression are general descriptive terms that are often used. Alcoholics and illegal drug users appear to manifest similar personality characteristics in this regard.

Comparison Studies

Legal and Illegal Drug Users. One study previously mentioned compared legal and illegal drug users. Hill, Haertzen, and Davis (1962) compared three groups of social deviates: alcoholics, drug addicts and criminals and factor analyzed the MMPI scores of these groups. They arrived at three significant factors. All three groups loaded highly on

factor 1, primarily scoring high on the "psychopathic deviate" scale. Of the three groups, the alcoholics had the lowest score on this factor. Factor 2 differentiated criminals from the other two groups to a certain degree, the depression score being the main differentiating factor. When a t-test was applied to the depression alone, the prisoners were significantly lower then the addicts. The means on this depression scale were: addicts, 67.7; alcoholics, 66.4; prisoners, 61.6. Scales related to depression, for example, Well-Being (Wb) on the California Personality Inventory (CPI) (Gough, 1957) may also differentiate criminals from drug and alcohol users.

This literature review has pointed out certain elements related to the use of drugs. Approximately one third of a large sample of college students had taken drugs illegally. The variable of hostility has been associated with nearly all types of drug use. Most studies using the MMPI found that the "psychopathic deviate" scale was high for both drug addicts and those addicted to alcohol. Heavy users of amphetamines and LSD also scored highly on measures of hostility. Indications of general immaturity, poor ability to socialize, and high scores on "depression" scales occurred in the drug using populations.

Problem and Hypotheses

In this research project we propose that drug users can be differentiated from non-drug users along certain personality dimensions. The following personality dimensions will be used in hypothesizing different behavior patterns between drug users and non-drug users:

1) three scales of personality from the California Personality Inventory, CPI (Gough, 1957); these are the scales of Well-Being (Wb), Socialization (So), and

Responsibility (Re);

2) the Hostility and Direction of Hostility Questionnaire, HDHQ (Caine, Foulds and Hope, 1967); the questionnaire contains two indices of hostility, total amount of hostility and direction of hostility (inwardly directed or outwardly directed);

3) a measure of anxiety, The Willoughby Emotional Maturity Scale, as presented by Wolpe (1958).

The problem of differentiating drug users from non-drug users circumscribes other problem areas. These must be considered. The relationship between criminal behavior and illegal drug use must not be overlooked for the factors that cause an individual to take part in social deviance may also cause him to use an illegal drug. A more conventional individual may use a legal drug for a different reason. Likewise we should consider whether non-criminal individuals who use legal drugs (e.g., alcoholics) differ from non-criminal individuals who use illegal drugs. Data concerning these related areas may suggest contributing influences that lead to different personality patterns for drug users and non users.

The criminal and non-criminal aspects of legal and illegal drug behavior, as compared with non-drug use, will be examined in terms of the experimental design shown in Table 1.

Table 1

Experimental Design

	Illegal Drug Use	(Alcoholic) Legal Drug Use	(Controls) Non-Drug Use
Criminal	Group I	Group II	Group III
Non-criminal	Group IV	Group V	Group VI

This design separates the criminal and non-criminal aspects of drug use. It allows for a comparison between illegal drug use, legal drug use, and non-drug use.

The hypotheses tested are:

1) Illegal drug users, alcoholics, and non-drug users will respond differently on the following variables.

   a) Scores of the non-drug users will tend to be higher than the illegal drug users and the alcoholics on the personality measures of Responsibility, Socialization and Well-Being.

   b) Illegal drug users and alcoholics will tend to score higher than the non-drug users on the variable Amount of Hostility.

   c) The anxiety scale scores will differentiate groups but the direction of the differences are not predicted.

2) Criminals will differ from non-criminals.

   a) Criminals will score lower than non-criminals on the CPI variables of Responsibility, Socialization and Well-Being.

   b) Criminals will tend to have a higher Total Hostility score than non-criminals.

c) The Direction of Hostility score of criminals will be directed outwardly more than is the case for non-criminals.

3) Interaction between drug usage and criminality will occur. This interaction will be most predominant on the direction of hostility score. More specifically, criminals will tend to have a more outwardly directed hostility score, non-criminals will tend to have a more inward direction of hostility score. The interaction that is to occur will fluctuate around the illegal drug use variable. It is postulated that non-criminal illegal drug use may be indicative of a higher outward hostility scores and thus result in an interaction effect. If this occurs non criminal illegal drug users will respond to the hostility measure in a fashion similar to that of the criminal groups.

METHOD

Subjects

Responses made by 89 male subjects were scored.* Six groups were defined on the basis of two variables: criminality and drug usage. There were: criminal alcoholics, criminal illegal drug users, criminal non-alcoholic non-illegal drug users; non-criminal alcoholics, non-criminal illegal drug users, non-criminal non-illegal drug non alcoholics.** Specific characteristics are given below.

Criminal-Alcoholics. Fifteen (15) male alcoholics were from a provincial correctional institution. The average age of this alcoholic group was 35.2 years, S.D. = 8.53. The average years of education was 9.67, S.D. = 1.76. These men were selected to take part in this study based on records indicating a history of alcoholic behavior. All individuals indicated that they did not regularly use illegal drugs. This report corresponded to data from an inventory descriptive of their history of drug taking. Fourteen of the 15 persons stated that they drank "several times a week" before entering prison. One stated that he drank "weekly."

Criminal Illegal Drug Users. Fifteen (15) incarcerated male individuals indicating a broad exposure to many different types of illegal

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*Others tested had to be discarded due to either their criminal record or their extent of drug use. Only the 89 Ss that met the group criteria as indicated on the categorizing questions were scored on the dependent measures. For example, three criminal groups were collected from a provincial correctional institution. In the course of collecting the data for the non-criminal groups some of the subjects indicated criminal records. The responses of these Ss on the dependent measures were not scored and their results were not included in this study.

**See Appendix A.

drugs were selected from a provincial correctional institution. The average age of this group was 20.00 years, S.D. = 3.39. The average education was Grade 9, S.D. = 1.41. On the inventory of drug behavior most of this group stated that they drank "weekly or less." Also, for each subject in the group, it was evident from this inventory that illegal drugs were used predominantly, when compared with the use of alcohol.

Criminal Non Illegal Drug, Non Alcoholic. Fifteen (15) male Ss were selected from the criminal population based on their responses on the inventory of drug usage indicating nonparticipation in extensive alcoholic or illegal drug behavior. On this inventory 4 of the 15 stated that they had not used alcohol or drugs before entering prison, 9 indicated that they had not used illegal drugs but they did use alcohol although not excessively (that is none marked "several times a week"), 2 reported that they had experimented with drugs but their drug usage was not excessive. The average age of this group was 24.53 years, S.D. = 6.44. The average years of education was 9.93 years, S.D. = 1.53.

Non Criminal Alcoholic Group. Sixteen (16) non-criminal male alcoholics were selected from an inpatient alcoholic treatment center offering four weeks of intensive treatment. None of these individuals had a criminal record, or indicated any use of illegal drugs according to results obtained from the questionnaire. The average age of this group was 40.75 years, S.D. = 0.89, the average years of education was 11.43, S.D. = 1.46.

Non-Criminal Illegal Drug Users. Thirteen (13) male Ss who in-

dicated that they had no criminal record were selected from certain drug cultures within a large Canadian city. On the inventory of drug behavior all indicated wide experimentation and extensive use of illegal drugs. The average age of this group was 19.46 years, S.D. = 1.13, the average years of education was 12.23, S.D. = 1.88. Some use of alcohol was indicated but illegal drugs were more frequently used.

Non Criminal, Non Alcoholic, Non Illegal Drug Users ('Normals'). The 'normal' group was comprised of 15 male Ss all employed with the local city transit system. Approximately one third of the group were in supervisory positions while two thirds of the group were in basic maintenance positions. The average age of this group was 40.4 years, S.D. = 8.82. The average education was 11.00 years, S.D. = 1.77. All subjects participated voluntarily. All of these individuals indicated on the inventory of drug taking that they had "never used" any illegal drugs. Three (3) of these individuals stated they drank alcohol weekly, 11 stated that they drank alcohol monthly or less, and 1 stated that he had never used alcohol. None of the individuals indicated having a criminal record.

It did not prove possible to match Ss according to age. ANOVA results indicated that criminals differed from non criminals on the age variable in a systematic way. Alcoholics, drug users and 'normals' also differed on this variable. A possible reason for these differences is that alcoholism takes longer to develop than a dependence on illegal drugs. Thus alcoholics tend to be older than illegal drug users.

The education variable also differentiated between criminals and non criminals, the criminals tending to have a lower education level.

Test Description and Administration

A questionnaire that was designed to take 45-75 minutes was presented to the Subjects. It contained three measures from the California Personality Inventory (Gough, 1957), Socialization, Responsibility, and Well-Being; two general measures of hostility as indicated by the Hostility and Direction of Hostility Questionnaire (Caine, Foulds and Hope, 1967); and one measure of anxiety, the Willoughby Emotional Maturity Scale, (Willoughby, 1932) as used by Wolpe, 1958.*

The CPI is a true-false personality questionnaire containing 480 items which are organized into 18 personality traits. The following is an example of the type of question. "I am nervous at parties. . . True-False." For this research, three scales were used; Responsibility (Re), Well-Being (Wb), and Socialization (So). The CPI scales are described as ". . . description concepts which possess broad personal and social relevance," (Gough, 1957).

The HDHQ is also presented in the form of true-false questions. From fifty questions, two primary measures are obtained: the amount of hostility and the direction of hostility, either intropunitive or extrapunitive. These two primary scores are based on five scales. The outward hostility scales are 'urge to act out,' 'criticism of others,' and 'projected delusional hostility.' The inward hostility scales are 'self criticism' and 'guilt'. These five scales are summed for amount of hostility and combined according to a formula to ascertain direction of hostility. In the manual of the test the authors state that "the HDHQ is designed to sample a wide, though not exhaustive, range of possible manifestations of aggression, hostility or puni-

*See Appendix B.

tiveness," (Caine, et. al., 1967). One example of the type of question used is: "I can easily frighten people. . . True-False."

The Willoughby revision of the Thurstone Personality Schedule has been updated and used by Wolpe (1958) in diagnosing areas of anxiety to be dealt with in therapy. Questions such as "Does criticism bother you" are answered by circling one of: 0, 1, 2, 3, 4 (0--"not at all," 1--"sometimes," 2--"an average amount," 3--"usually," 4--"practically always").

The questionnaire also included classification data such as educational level, age, marital status, etc. Following this classification was an inventory of drug taking behavior followed by questions concerning past and future illegal drug usage. One question concerning number of convictions was also asked. Two open ended question concluded the questionnaire. These questions were: "What things are most difficult for you to do?", "What effect do you or did you get from using drugs?" This questionnaire is found in Appendix C.

The questionnaire was administered in a number of different settings. The three criminal groups were tested at the correctional institution with the assistance of a social worker. The social worker aided in the pre-selection of the Ss and in the administration of the questionnaire. This testing took place in a large quiet conference room. The 'normal' group were also tested in a conference room which was located at the premises of the local transit system offices.

The non-criminal alcoholic group were tested by the staff of the in-patient alcoholic treatment center. The questionnaire was included in the initial battery of tests given to patients upon admittance to

the treatment center.

The non-criminal illegal drug users were tested in their homes by a research assistant who has conducted a number of research projects dealing with these groups.

Analysis of the Data

An analysis of variance was applied to the following dependent measures: well-being, socialization, responsibility, anxiety, direction of hostility and amount of hostility. This type of analysis was used to indicate differences that occurred among the alcoholics, the illegal drug users and controls. The analysis also indicates any differences that occur between the criminal group and the non-criminal group. The interaction that occurs between these two main effects will also be indicated.

Scheffé's Test of Multiple Comparisons will also be used. This test makes it possible to discover which group within the main effect of alcoholics, illegal drug users and controls is different from the other two groups.

Following this an analysis of covariance will be applied to five of the dependent measures. The covariate to be used will be the most significant dependent variable as indicated by the analysis of variance. This analysis will indicate how much of the variance can be attributed to the overlap between the covariate and the other dependent measures.

For all tests a significance level of $p = < .05$ was accepted as indicating that non-random differences between the groups existed.

RESULTS

1) The personality measure socialization will be discussed first. This measure detects significant differences on both main effects but not on the interaction effect. Table 2 gives a summary of the analysis. The data shows non-criminal groups significantly higher on socialization

Table 2

Summary of Analysis of Variance on Personality Measure of Socialization

Source of Variation	Sum of Squares	df	Mean Square	F	Probability
A: Criminal/ Non Criminal	852.0000	1	852.000	31.9991	.00001**
B: Drug/Alcoh/ Control	914.688	2	457.344	14.1767	.00000**
A x B	75.186	2	37.593	1.411	.249463
Error	2209.94	83	26.625		

** highly significant, $p < .001$

than criminal groups ($F = 31.999$, $p < .001$). The comparison between alcoholics, illegal drug users and controls also shows a high significant difference ($F = 17.1767$, $p < .001$). Scheffé's Test of Multiple Comparisons indicates that the alcoholic group and the illegal drug users group are not significantly different from each other but both highly different ($p < .001$) from the control group. The means for these three groups are: alcoholics 26.89, illegal drug users 24.74, control group 32.40.

Socialization clearly differentiates between the groups and therefore was used as a covariate measure when an analysis of covariance was applied to the data. The descriptions of the analyses for the remaining dependent measures included an analysis of variance and an analysis of covariance.

2) Well-being significantly differentiates between groups on both main effects as shown in Table 3. The non-criminal group have a higher

Table 3

Summary of Analysis of Variance on Personality

Measure of Well-Being

Source of Variation	Sum of Squares	df	Mean Square	F	Probability
A: Criminal/ Non Criminal	222.687	1	222.687	6.1306	.0153*
B: Alcoh/Drug/ Control	527.188	2	263.594	7.2567	.0012*
A x B	72.375	2	36.187	.9962	.3736
Error	3014.87	83	36.323		

* significant, $p < .05$

mean score on well-being than do the criminal group (Non-criminal Wb = 33.19, criminal Wb = 30.02). These groups also differ ($p < .05$) when compared using Scheffé's Test of Multiple Comparisons. Alcoholics, drug users and controls are likewise significantly differentiated. Scheffé's Test of Multiple Comparisons show that illegal drug users differ from controls ($p < .01$), this being the only significant source of the dif-

ference found on this main effect. The means for the three groups are: alcoholic group 31.85, illegal drug users 28.46, controls 34.50.

When an analysis of covariance is applied to these data partitioning out the effects of the measure of socialization none of the main effects or interactions are significant. The covariate measure was highly correlated with the well-being variable. Once the variability that the socialization measure accounted for was subtracted out, the remaining variability did not differentiate between groups. This occurs if the indices of socialization and well-being measure the same thing or when the two different things measured are highly correlated.

3) The personality measure of responsibility shows high significant differences between criminals and non-criminal and between alcoholics, illegal drug users, and controls. This analysis of variance is shown in Table 4.

Table 4

Summary of Analysis of Variance on Personality

Measure of Responsibility

Source of Variation	Sum of Squares	df	Mean Square	F	Probability
A: Criminal/ Non Criminal	341.823	1	341.828	11.647	.00100*
B: Alcoh/Drug/ Control	947.820	2	473.910	16.147	.00000**
A x B	2.964	2	1.482	.051	.95070
Error	2435.950	83	29.349		

* significant, $p < .05$

** highly significant, $p < .001$

Scheffé's Test of Multiple Comparisons indicates that the criminal group have significantly lower scores on this measure of "responsibility" than do the non criminals (criminal 'Res' = 21.37, non-criminal 'Res' = 23.31). When the alcoholic, illegal drug users and controls are compared with this test it is found that the alcoholic group and the control group score significantly higher on responsibility than do the group of illegal drug users. The alcoholics and controls do not significantly differ on this measure. The means for these groups are: alcoholics 24.64, illegal drug users 18.79, controls 26.60.

When the analysis of covariance is applied to the data significant differences remain among the alcoholics, illegal drug users and controls. This means that the measure of responsibility is predicting from a different basis than is socialization. Once the socialization measure is partitioned out of the responsibility variable the remaining variance still differentiates between these groups. However, when the data is grouped in the other way in terms of the "criminal/non-criminal" categories no significant difference occurs when the analysis of covariance is applied.

4) The variable of anxiety is the poorest discriminating measure used. As shown in the analysis of variance in Table 5, criminals do not differ significantly from non-criminals on this variable. A significant difference does occur when the illegal drug users, alcoholic group and the controls are compared. When Scheffe's Test of Multiple Comparisons is applied to these three groups the only significant contrast appears when illegal drug users are compared with the control group ($p < .05$). The means for this comparison are: alcoholic group 35.99,

illegal drug users group 39.59, controls 26.50.

Table 5

Summary of Analysis of Variance on

Variable of Anxiety

Source of Variation	Sum of Squares	df	Mean Square	F	Probability
A: Criminal/ Non Criminal	9.625	1	9.625	.02568	.87307
B: Alcoh/Drug/ Control	2680.060	2	1340.030	3.57540	.03240*
A x B	43.75	2	21.875	.05836	.94334
Error	31107.100	83	374.780		

* significant, $p < .05$

When the analysis of covariance is used to compare the groups no significant differences occur. The partitioning out of the socialization variable results in the significant difference between the three different drug style groups as shown in the analysis of variance at $p = .03240$ dropping to $p = .223$. Apparently the covariate socialization contributes to the difference that occurs when the anxiety variable alone is used.

5) The direction of hositlity measure indicates how an individual handles his feelings of hostility. When the score is in the positive direction it indicates that the individual is directing his hostility inwards, towards himself. When it is in the negative direction the individual is directing his hostility outwards, towards others.

The analysis of variance on this variable, as shown in Table 6

indicates that significant differences occur on the criminal/non-criminal dimension, $p < .05$. The criminals have a higher outward expression of hostility than do the non-criminals. The interaction effect was also significant, $p < .05$.

Table 6

Summary of Analysis of Variance on

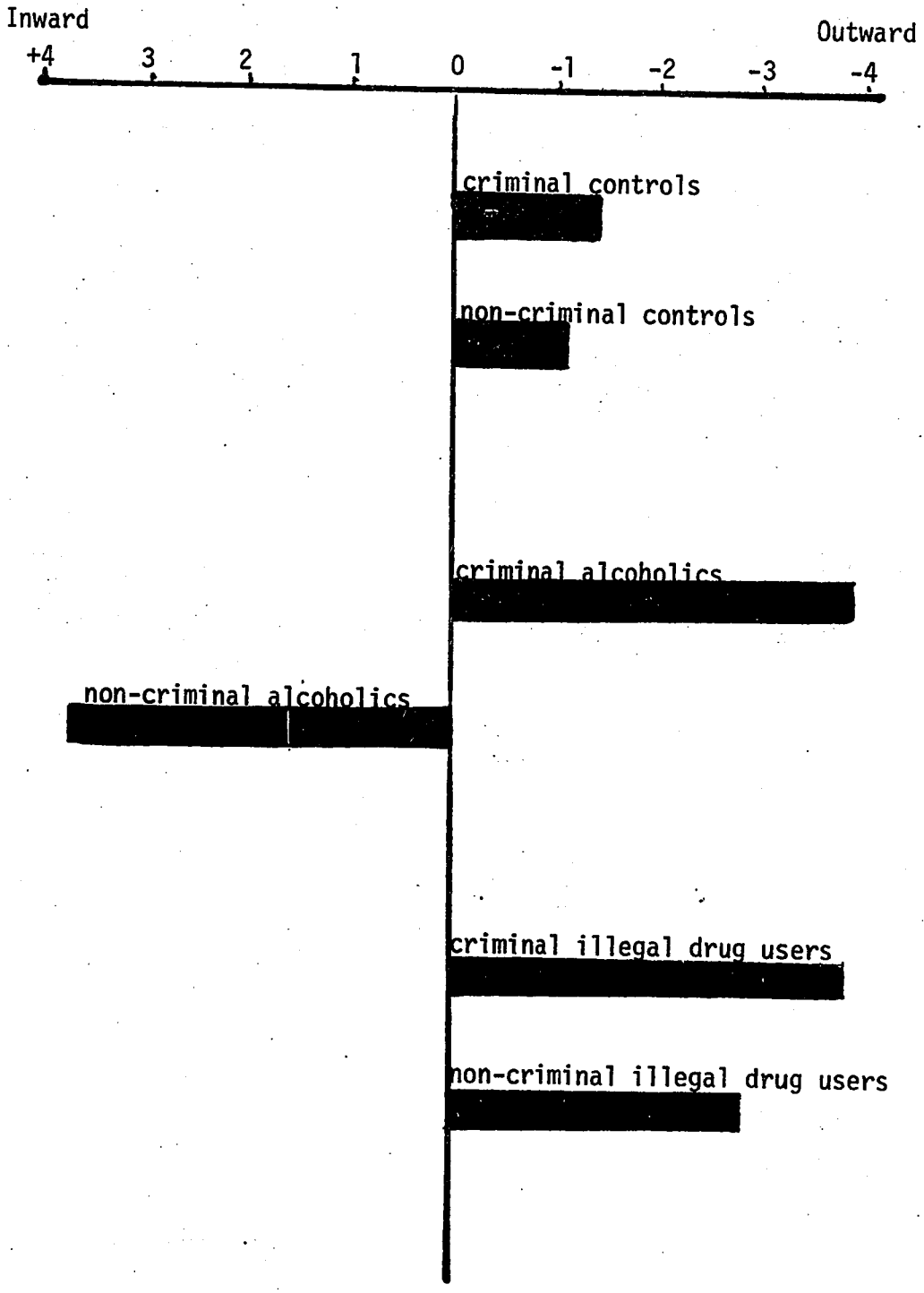
Direction of Hostility

Source of Variation	Sum of Squares	df	Mean Square	F	Probability
A: Criminal/ Non Criminal	158.144	1	158.144	5.09267	.02666*
B: Alcoh/Drug/ Control	116.821	2	58.410	1.88097	.15888
A x B	243.979	2	121.990	3.92841	.02343
Error	2577.420	83	31.053	3.92841	

* significant, $p < .05$

This interaction effect can be best understood by considering the group means as presented in Figure 1. The non-criminal alcoholic group is the only group with a positive score, the other groups having negative scores. The combination of the two conditions, non-criminality and alcoholic behavior, results in an interaction effect, viz., the high positive score on this variable. This interaction effect becomes more significant after the analysis of covariance is carried out, the probability of this difference occurring by chance changing from $p = .02343$ to $p = .00907$. The main effects are not significant with this analysis of covariance. This means a measure correlated or identical with the so-

Figure 1: Direction of Hostility Score



cialization measure is partially responsible for the difference that occurs on the main effects. The difference that occurs on the interaction effect is not correlated with socialization and this covariate does not contribute to the difference that occurs.

6) The measure amount of hostility significantly differentiates between criminals and non-criminals ($F = 8.20266$, $p < .05$). It also shows that the three groups; alcoholics, illegal drug users and controls have significantly different scores on this measure ($F = 4.33186$, $p < .05$). The interaction effect is not significant. These results are summarized in Table 7.

Table 7

Summary of Analysis of Variance on

Amount of Hostility

Source of Variation	Sum of Squares	df	Mean Square	F	Probability
A: Criminal/ Non Criminal	469.930	1	469.930	8.20266	.00530*
B: Alcol/Drug/ Control	496.344	2	248.172	4.33186	.01624*
A x B	17.847	2	.8924	.15577	.85601
Error	4755.07	83	57.290		

* significant, $p < .05$

When the analysis of covariance is applied to this variable the covariate is significantly correlated. No significant differences occur on the main effects or on the interaction term. If socialization

and amount of hostility are highly negatively correlated this result would be expected.

DISCUSSION

It was predicted in hypothesis 1(a) that the control group would tend to be higher than drug users and alcoholics on the measures of responsibility, socialization, and well-being. In general these results occur. The socialization trait shows that the control group score significantly higher than alcoholics and illegal drug users on this measure. On the measure of well-being the control group score significantly higher than the illegal drug users but were not significantly higher than the alcoholics. On the measure of responsibility the controls and the alcoholics are both significantly higher than the illegal drug users.

These results indicate that the illegal drug users significantly differ from the controls on all three measures. The alcoholic group appears similar to the illegal drug users and different from the controls on socialization. But on the measure of responsibility the alcoholic group respond in a manner similar to the control group which score significantly higher than the illegal drug users. This result of the similarity of the alcoholic group and the controls on this measure of responsibility was not predicted. Its occurrence indicates that on this variable illegal drug users can be differentiated from controls and alcoholics.

These differences also have to be considered in terms of the analysis of covariance which partitioned out the variance attributable to socialization. After this analysis was applied to the data the well-being trait showed no significant differences. This suggests that within these groups socialization and well-being are correlated in such

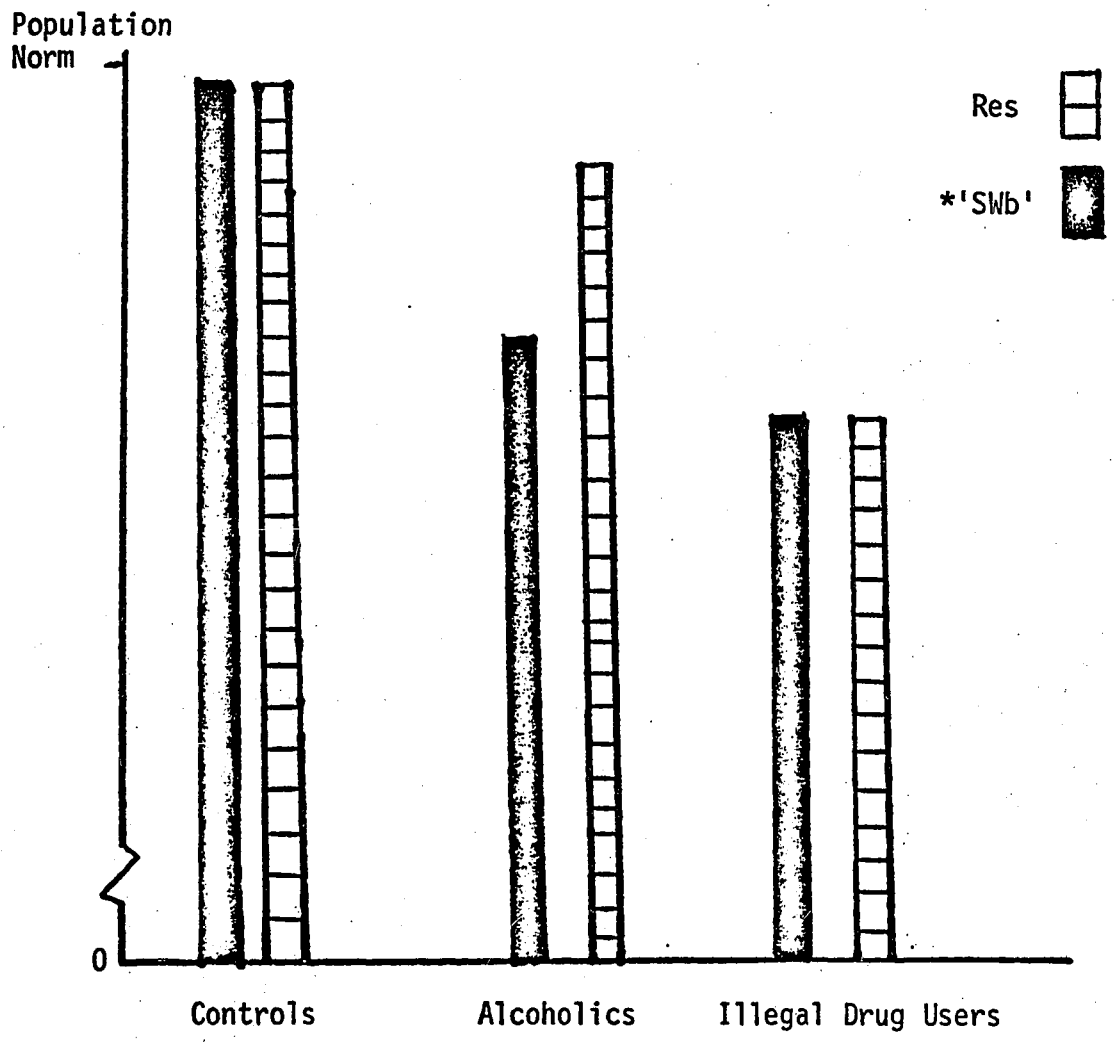
a manner that little additional information is gained with the use of the second variable that could not have been predicted from the first or vice versa. These two variables can be conceptualized as one element, "SWb." This element separates quite well controls from illegal drug users and controls from alcoholics. This was predicted although the high correlation was not.

On the responsibility measure the "criminal/non-criminal" differences no longer occur after the analysis of covariance but significant differences are still evident between alcoholics, illegal drug users, and controls. This analysis of covariance verifies the original analysis of variance which shows the controls (as predicted) significantly higher on responsibility than illegal drug users and alcoholics (not as predicted) significantly higher than illegal drug users. This again indicates that illegal drug users are different than the other two groups on this trait, tending to score lower on responsibility.

As shown in Figure 2 these three groups can be presented in terms of the two elements that differentiate. The controls are high in "SWb" and high in responsibility. The alcoholic groups are low in "SWb" and high in responsibility. The illegal drug users are low in "SWb" and low in responsibility.

Hypothesis 1(b) predicted that illegal drug users and alcoholics would tend to score higher than controls on the variable amount of hostility. Illegal drug users do score significantly higher than controls ($p < .05$) while the alcoholics are higher but the difference only approaches near significance ($p < .10$). The hypothesis is not rejected and indicates that alcoholic and illegal drug groups have more

Figure 2: Comparison of Groups on 'SWb' and Responsibility



*To the correlated element 'SWb' two negatively correlated variables amount of hostility and anxiety will be added later in the discussion. (A high score on 'SWb' will indicate a low amount of hostility and a low anxiety score.)

feelings of hostility than do the controls. The analysis of covariance eliminates all significant differences. It would seem that the larger the amount of hostility one has the less mature the socialization responses could be. If this is the case the negative correlation between the covariate socialization and amount of hostility results in the non-significance. This variable can be added to the correlated grouping resulting in "(SWb) (-AH)." This element represents the high intercorrelation of that part of these three variables that are contributing to the differences between the three groups.

Hypothesis 1(c) predicted that the anxiety scale would differentiate among alcoholics, illegal drug users and controls. The direction of the difference was not predicted. Significant differences occur. The illegal drug users have the highest anxiety score and are significantly differentiated ($p < .05$) from the controls who had the lowest anxiety score. The alcoholic group score higher than controls and similiar (slightly lower) to the illegal drug users. They are not significantly different from either group.

Anxiety is also highly correlated with socialization. No significant differences appear after the analysis of covariance. Anxiety can also be added to the correlated element that differentiates alcoholics, illegal drug users and alcoholics. The element becomes "SWb (-AH)-A." One explanation for this correlation would be highly anxious people would tend to have lower well-being scores and be too anxious for good social interaction.

Hypothesis 2(a) predicted criminals would score lower than non-criminals on the variables of responsibility, socialization and well-being. This occurs for each variable. The criminals in each case

scoring significantly lower than the non-criminals. These differences on these variables are highly correlated. After the analysis of covariance no differences between criminals and non-criminals occur on responsibility or well-being.

When hypothesis 1 was considered two differentiating elements appeared, responsibility and "SWb(-AH)-A" to differentiate alcoholics, illegal drug users and controls. When considering the groups the other way, that is the "criminal/non criminal" grouping, the responsibility element no longer differentiates in a manner independent of socialization. This indicates that responsibility uniquely differentiates between alcoholics, illegal drug users, controls while between criminal and non criminals the differentiation is similar to "SWb(-AH)-A." This result may occur because the differences on responsibility cancel each other out when alcoholics, illegal drug users and controls are grouped together under the categories of criminal and non-criminal. But, with the other grouping the illegal drug users unique responses on responsibility (a lower mean score) separate them from alcoholics and controls.

Hypothesis 2(b) predicted that criminals would have higher amount of hostility scores than non-criminals. This result occurs, criminals scoring significantly higher than non criminals ($p < .05$). After the analysis of covariance no differences occur between these two groups on this variable.

Hypothesis 2(c) predicted that criminals would direct their hostility more outwardly than non-criminals. This occurs, criminals being more externally hostile than controls ($p < .05$). This difference also did not occur after the analysis of covariance. Summarizing the differences

that occur between criminals and non criminals after the analysis of covariance indicates that only 1 element differentiated, all differences being non-significant after the analysis of covariance. This element is related to socialization, responsibility, well-being, amount of hostility and outward direction of hostility. The criminals being lower than non criminals on the first three variables and higher than non criminals on the last two variables.

Hypothesis 3 predicted that an interaction would occur on the variable direction of hostility. It was predicted that the non criminal illegal drug users would tend to score high on the outward direction (similiar to their criminal counterparts) and thus cause the interaction. An interaction did occur but not in accordance with what was predicted. The significant interaction that results occurs before and after the analysis of covariance. The interaction is caused by the unique response of the non-criminal alcoholic group. This is the only group of the six groups that have an inward direction of hostility score. Thus the combination of non-criminality and alcoholism results in an interaction that could not have been predicted after considering the other five groups. The original hypothesis that non-criminal illegal drug users would cause the interaction by responding like the criminal illegal drug users is not accepted. Although the act of taking illegal drugs is a criminal act this group does not have as high an outward expression of hostility as do the criminal groups.

The hypotheses have been presented in terms of different responses by the groups on certain personality measures. When the alcoholics, illegal drug users and controls are compared two differentiating ele-

ments appear. One that was correlated with the covariate socialization, and titled according to the contributing variables, that is, "SWb(-AH)-A." The second differentiating element was responsibility.

When the "criminal/non-criminal" groups were compared all differentiating variables correlated with socialization. These were well-being, responsibility, amount of hostility and direction of hostility. This correlated element is highly similiar to "SWb(-AH)-A." In both cases all variables are correlated with socialization which differentiated on both main effects. The differences between these two correlated elements are on the variables direction of hostility and anxiety. Direction of hostility just differentiates criminals from non-criminals while anxiety just differentiates among alcoholics, illegal, drug users, and controls. The remaining variables, socialization, well-being, responsibility, and amount of hostility differentiate on both main effects. The difference between the two different correlated elements is that each contain one unidirectional variable that differentiates on only one main effect. But because all variables are correlated with socialization and it differentiates in both directions it appears that these two correlated elements are basically the same and can be combined to one unit. This unit takes into account all variables that differentiate before the analysis of variance and not after it on both main effects and is titled "SWb(-AH)."

In comparing all six groups three differentiating variables can be used. "SWb(-AH)" which differentiates on both main effects. Responsibility and direction of hostility which appear to have unique differentiating contributions because significant differences occur

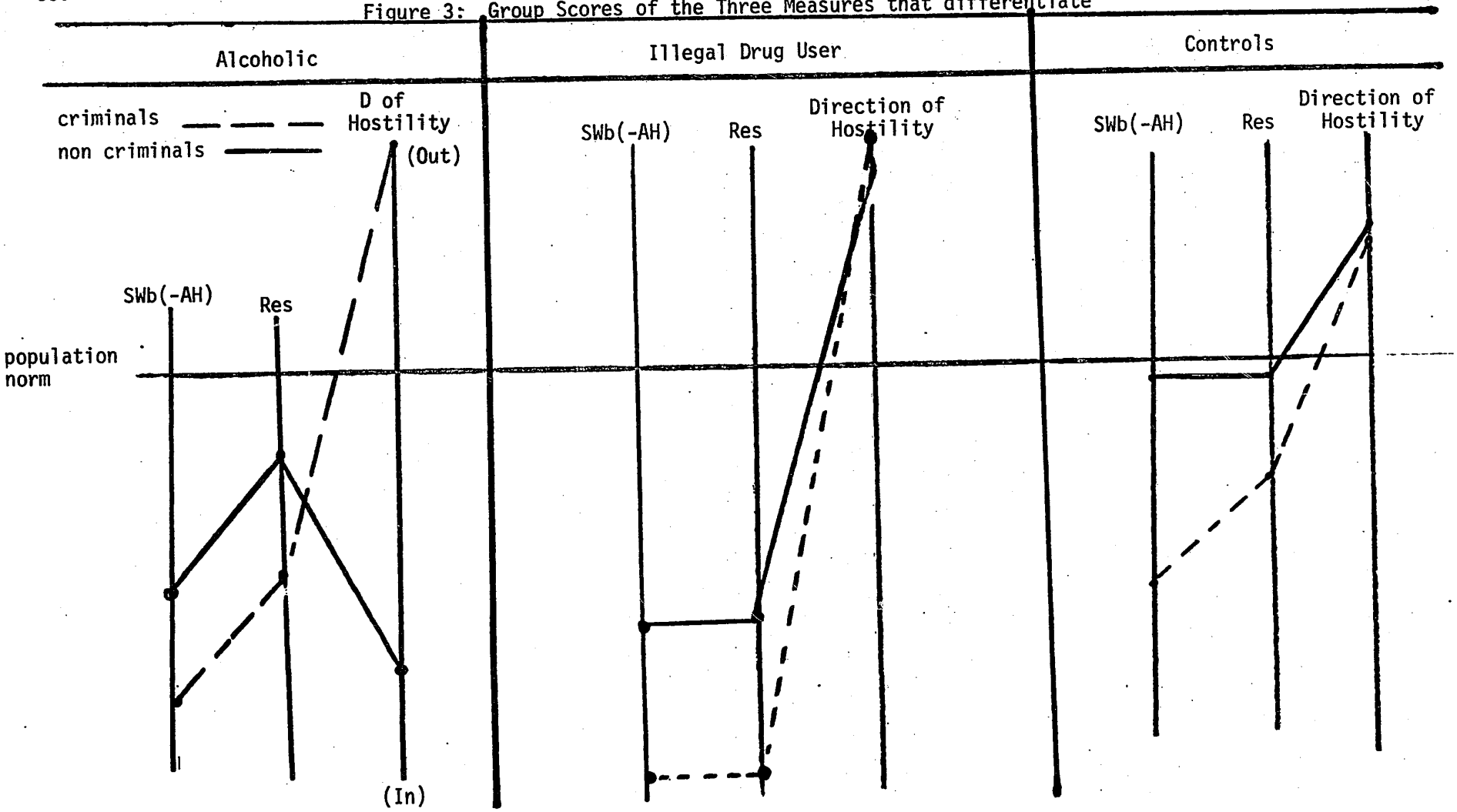
after the analysis of covariance. These three basic variables will be used in describing the six groups.

The scores for the six groups on the three differentiating elements are shown in Figure 3. The non-criminal alcoholics are the most unique of the six groups. This group would be the easiest to differentiate from the other five because of the direction of hostility score. This group direct their hostility inwardly while the other five groups direct their hostility outwardly. As expected this group have a low score on "SWb(-AH)," (that is low on socialization, well-being, and high on amount of hostility) when compared with non-criminal controls. But the score of the non-criminal alcoholics on responsibility is closest to the mean of the non-criminal controls (who have the highest mean score on responsibility for all six groups). This configuration indicate that non-criminal alcoholics accept responsibility for reaching certain goals but because of poor "sociaiblity/hostility" expression they cannot attain these goals.

The criminal alcoholics score on "SWb(-AH)" is very low while the responsibility score is slightly lower than the criminal controls. This group had the highest outward expression of hostility score of the six groups. These opposing directions of hostility expression within the alcoholic groups (criminal and non-criminal) suggest that two different behavior patterns are associated with alcoholic behavior.

The non-criminal illegal drug users also have a high outward expression of hostility. Their mean scores on "SWb(-AH)" and responsibility are the lowest of the non-criminal groups and are also lower than the criminal controls. These characteristics of poor interpersonal abilities

Figure 3: Group Scores of the Three Measures that differentiate



and a less responsible life style indicate that this group is similiar to the criminal group average.

The criminal illegal drug users have the lowest scores of the six groups on "SWb(-AH)" and responsibility. Their high outward expression of hostility is the second highest of the six groups being almost as high as the criminal alcoholic group. The unique aspect of this group is the extreme nature of the scores. Of the six groups it is suggested that members in this group have the poorest interpersonal abilities and the least responsible life style.

The non-criminal control group responded as expected. They score the highest of the six groups on SWb(-AH) and responsibility. These scores are very close to what the CPI manual states for male college norms. There expression of hostility was slightly outward but closer to a balanced expression of hostility than any of the other groups.

The criminal control group have higher scores for "SWb(-AH)" and responsibility than did the other two criminal groups. Their outward expression of hostility was the lowest of the three criminal groups.

Certain general conclusions can be drawn by considering all of the results. An extensive amount of alcohol or illegal drug use is associated with extreme scores on the direction of hostility measure; and moderately low scores on the interpersonal measure "SWb(-AH)." Alcoholics tend to score higher on measures of responsibility than do illegal drug users.

The high amount of hostility score for those using an extensive amount of alcohol or illegal drug was expected. This high score can be attributed to the inability of these individuals to express their ag-

gressive feelings. The direction of hostility score indicates how these individuals attempt to express this hostility. In a study done by Cockett and Marks (1969) it was found that their group of young amphetamine users had significantly higher inward hostility scores than controls. In this study illegal drug users (both criminal and non-criminal) direct hostility outwardly. The difference between this result and that of Cockett and Marks (1969) may be attributed to differences between the two groups in age, (Cockett and Mark's group were young); in the type of drug use, (amphetamine use versus multiple drug use) and in culture (British group versus Canadian group). The results of the present study indicate that illegal drug users perceive the cause of their frustration as being outside themselves. For these individuals solving problems may be combined with striking out at the environment. This type of solution is completely opposite to that of the non-criminal alcoholic who blames himself as the cause of all his problems. It appears that these two extreme forms of hostility expressions are associated with extensive alcoholic and illegal drug use while very moderate and non users have a more balanced expression of hostility.

The tendency for alcoholics to have higher scores on responsibility than was expected suggests that there acceptance of the conventional drug use is associated to a certain extent with the acceptance of a social norm and hence a higher responsibility score. This trait combined with poor score on the interpersonal measure "SWb(-AH)" is probably a contributing factor to alcoholic behavior. It follows that this responsibility measure is one means of differentiating the alcoholic from the

illegal drug user.

This interpretation can only be accepted if age and the variable responsibility are not highly correlated. A within group correlation coefficient of r = +.29519 between age and responsibility is cited as evidence that only .09703 of the variance can be attributed to the contribution of the age variable. This contribution is small and other correlation data indicate that the relationship between age and all other variables is minimal.*

One other alternate general interpretation of the entire study can be suggested. From the results it is obvious that criminals do not respond as favorably as do non-criminals. This may be indicative of the short term or immediate detrimental effect of prison life. This type of interpretation could only be validated if the subjects used in the study could have been tested just before being apprehended by the police. If the differences then found between criminals and non-criminals were not as great at that time this interpretation would be valid. It must be remembered, however, that these indivudals would be more predisposed to criminal acts if their personality development incorporated immature socialization skills, irresponsibility and outwardly expressed hostility.

In presons of past decades prison life may have been non-developmental. In today's prisons the highest emphasis is placed on rehabilitation. The staff at these institutions want to help develop the personality of the inmates and direct them toward a better life style.

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*See Appendix D.

Hence it can be well argued that the criminals low scores on the variables used in this study would have been lower if these individuals had been tested just before being apprehended by the police.

In conclusion, this study has pointed out how criminal and non-criminal groups of alcoholics and illegal drug users differ from similar control groups. Three measures were found that delineate the groups. These measures were: (SWb-AH)," a group of personality traits that show a person's interaction skill; responsibility, a measure of conscientiousness and maturity; and direction of hostility; an indicator of how one expresses aggressive feelings.

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APPENDIX A

A General Description of Four of the Groups.

A General Description of Four of the Groups

The prisoners generally were being held for sentences of two years less a day. Examples of type of crimes they would be charged with are as follows: breaking and entering, fraud, forgery, assault, theft, violations under the 'Liquior Control Act'.

The non-criminal alcoholic group were taking part in six weeks of rehabilation. The director of the clinic stated that this sample of alcoholics was a fairly representative "cross section" of the general population.

APPENDIX B

Reliability and Validity of Test Used.

Reliability and Validity of Tests Used

The reliability coefficients of the California Personality Inventory scales used in the study are shown in Table 8 as they are reported in the test manual (Gough, 1969). One year elapsed between the testings.

Table 8

Correlations of Scales of the California Personality Inventory

CPI Scales	High School Males N = 101	Prison Males N = 200
Socialization	.65	.80
Responsibility	.65	.85
Well-Being	.71	.75

The validity of the three scales is also reported in the manual. The socialization scale had a fairly high correlation over a number of different groups, r = +.67 (Gough, 1969, p. 22). The responsibility measure correlated +.38 with staff rating of "positive character integration" for a sample of 40 University of California graduate students. In a similar sample 40 University of California medical school seniors, "Re" correlated +.38 with staff ratings of "responsibility" (Gough, 1969, pp. 21, 22). The validity of the well-being scale was reported for a sample of 100 military officers. This measure correlated +.26 with staff's ratings of "health and vitality" and +.26 with "own rating" of "general physical fittness" (Gough, 1969, p. 22).

The standard error of measurement, another type of reliability

measure, is not stated in the manual of the California Personality Inventory. Ferguson's (1956, pp. 286-287) method of computing this measure is used in Table 9 to show the standard error of measurement ($S\varepsilon M$) for a score in the average range.

Table 9

Standard Error of Measurement for California Personality Inventory Scales

	$S\varepsilon M = \sqrt{X_i (n - X_i)} / (n - 1)$
Socialization	
average score, $X_i = 37$	$S\varepsilon M = 3.575$
number of items, $n = 56$	
Well-Being	
average score, $X_i = 38$	$S\varepsilon M = 5.640$
number of items, $n = 44$	
Responsibility	
average score, $X_i = 31$	$S\varepsilon M = 2.884$
number of items, $n = 42$	

The manual for the "Hostility and Direction of Hostility Questionnaire" (HDHQ) states validity and reliability information. The validation of Amount of Hostility was based on the assumption that psychotics have more aggression than neurotics who in turn have more aggression than normals. Amount of Hostilility was validated by the correct prediction of which of the following groups would have the highest score. Non

paranoid schizophrenics (n = 20) scored the highest and were followed in descending order by: 14 selected paranoids, 20 melancholics, 6 selected melancholics, 20 paranoids, 169 neurotics, 47 normals. Only the ranking of the groups on this measure and not their scores were given.

On the direction of hostility score it was finally validated that the normal sample lies toward the extrapunitive end of the component. It was later stated that:

> "Normal persons are extrapunitive relative to neurotics. Paranoids appear more extrapuntive than normals because they are in fact more punitive and so the threat they present is more evident than presented by normal persons" (Cain, et al., 1967, p. 10).

No validity coefficient was stated.

Willoughby (1932) states split-half reliabilities for the Clark-Thurstone Inventory (later called the Willoughby Emotional Maturity Scale). This reliability measures was conducted on a mixed group of 267 individuals, r = +.91.

The test was validated by comparing each item with the total score. No validation index was given. It was stated that "there is a reasonably close relationship between the diagnostic value of the items and that of the scale as a whole" (Willoughby, 1932).

APPENDIX C

Questionnaire

Q U E S T I O N N A I R E

This is an anonymous questionnaire. Please do not write your name on any of the following pages.

D I R E C T I O N S

The following pages contain a series of statements. Read each one, decide how you feel about it, and then mark your answer in the space provided to the right of the statement.

If you agree with a statement or feel that it is true about you, circle T for TRUE.

If you disagree with a statement, or feel that it is not true about you circle F for FALSE.

Circle T or F for every statement even if you have to guess at some.

	True	False
13. As long as a person votes every four years, he has done his duty as a citizen.	T	F
14. Maybe some minority groups do get rough treatment, but it's no business of mine.	T	F
15. We ought to worry about our own country and let the rest of the world take care of itself.	T	F
16. When I get bored I like to stir up some excitement.	T	F
17. Sometimes I cross the street just to avoid meeting someone.	T	F
18. Once a week or oftener I feel suddenly hot all over, without apparent cause.	T	F
19. I liked school.	T	F
20. I find it hard to keep my mind on a task or job.	T	F
21. School teachers complain a lot about their pay, but it seems to me that they get as much as they deserve.	T	F
22. I think I am stricter about right and wrong than most people.	T	F
23. I would do almost anything on a dare.	T	F
24. I was a slow learner in school.	T	F
25. I am fascinated by fire.	T	F

	True	False
26. It is all right to get around the law if you don't actually break it.	T	F
27. I seldom or never have dizzy spells.	T	F
28. I do not dread seeing a doctor about a sickness or injury.	T	F
29. With things going as they are, it's pretty hard to keep up hope of amounting to something.	T	F
30. I think I would like to drive a racing car.	T	F
31. Every citizen should take time to find out about national affairs, even if it means giving up some personal pleasures.	T	F
32. I have had more than my share of things to worry about.	T	F
33. My parents have generally let me make my own decisions.	T	F
34. I would rather go without something than ask for a favor.	T	F
35. My parents have often disapproved of my friends.	T	F
36. I am somewhat afraid of the dark.	T	F
37. My home life was always happy.	T	F
38. I often act on the spur of the moment without stopping to think.	T	F
39. I hardly ever get excited or thrilled.	T	F

	True	False
40. When I work on a committee I like to take charge of things.	T	F
41. I can remember "playing sick" to get out of something.	T	F
42. Before I do something I try to consider how my friends will react to it.	T	F
43. I have often found people jealous of my good ideas, just because they had not thought of them first.	T	F
44. In school my marks in deportment were quite regularly bad.	T	F
45. It makes me angry when I hear of someone who has been wrongly prevented from voting.	T	F
46. I very much like hunting.	T	F
47. I have never been in trouble with the law.	T	F
48. When I meet a stranger I often think that he is better than I am.	T	F
49. I would be ashamed not to use my privilege of voting.	T	F
50. I enjoy a race or game better when I bet on it.	T	F
51. I often feel as though I have done something wrong or wicked.	T	F
52. I keep out of trouble at all costs.	T	F
53. Most of the time I feel happy.	T	F

	True	False
54. People have a real duty to take care of their aged parents, even if it means making some pretty big sacrifices.	T	F
55. We ought to pay our elected officials better than we do.	T	F
56. I can honestly say that I do not really mind paying my taxes because I feel that's one of the things I can do for what I get from the community.	T	F
57. I usually expect to succeed in things I do.	T	F
58. In school I was sometimes sent to the principal for cutting up.	T	F
59. I am so touchy on some subjects that I can't talk about them.	T	F
60. When prices are high you can't blame a person for getting all he can while the getting is good.	T	F
61. I have never done anything dangerous for the thrill of it.	T	F
62. I think most people would lie to get ahead.	T	F
63. I usually feel that life is worthwhile.	T	F
64. As a youngster I was suspended from school one or more times for cutting up.	T	F
65. We ought to let Europe get out of its own mess; it made its bed, let it lie in it.	T	F
66. I feel that I have often been punished without cause.	T	F

	True	False
67. I have very few quarrels with members of my family.	T	F
68. It is hard for me to act natural when I am with new people.	T	F
69. I like to read about science.	T	F
70. If I get too much change in a store, I always give it back.	T	F
71. I have often gone against my parents' wishes.	T	F
72. Any man who is able and willing to work hard has a good chance of succeeding.	T	F
73. I hardly ever feel pain in the back of the neck.	T	F
74. I have a great deal of stomach trouble.	T	F
75. Police cars should be especially marked so that you can always see them coming.	T	F
76. I don't seem to care what happens to me.	T	F
77. I have nightmares every few nights.	T	F
78. I have been afraid of things or people that I knew could not hurt me.	T	F
79. I am afraid to be alone in the dark.	T	F
80. At times I have a strong urge to do something harmful or shocking.	T	F

	True	False
81. Everything tastes the same.	T	F
82. When I was a child I didn't care to be a member of a crowd or gang.	T	F
83. I never worry about my looks.	T	F
84. I often think about how I look and what impression I am making upon others.	T	F
85. Sometimes I used to feel that I would like to leave home.	T	F
86. I have never done any heavy drinking.	T	F
87. I get nervous when I have to ask someone for a job.	T	F
88. When I am feeling very happy and active, someone who is blue or low will spoil it all.	T	F
89. Much of the time my head seems to hurt all over.	T	F
90. I find it easy to "drop" or "break with" a friend.	T	F
91. No one seems to understand me.	T	F
92. I am made nervous by certain animals.	T	F
93. I have reason for feeling jealous of one or more members of my family.	T	F
94. My people treat me more like a child than a grown-up.	T	F

	True	False
95. I seem to do things that I regret more often than other people do.	T	F
96. I go out of my way to meet trouble rather than try to escape it.	T	F
97. I dream frequently about things that are best kept to myself.	T	F
98. I have been in trouble one or more times because of my sex behavior.	T	F
99. My home life was always very pleasant.	T	F
100. Some of my family have habits that bother and annoy me very much.	T	F
101. I know who is responsible for most of my troubles.	T	F
102. When I am cornered I tell that portion of the truth which is not likely to hurt me.	T	F
103. I get pretty discouraged with the law when a smart lawyer gets a criminal free.	T	F
104. My mouth feels dry almost all the time.	T	F
105. I have used alcohol excessively.	T	F
106. It is pretty easy for people to win arguments with me.	T	F
107. Even when I have gotten into trouble I was usually trying to do the right thing.	T	F

	True	False
108. There are certain people whom I dislike so much that I am inwardly pleased when they are catching it for something they have done.	T	F
109. My table manners are not quite as good at home as when I am out in company.	T	F
110. It is very important to me to have enough friends and social life.	T	F
111. Life usually hands me a pretty raw deal.	T	F
112. I used to steal sometimes when I was a youngster.	T	F
113. I get all the sympathy I should.	T	F
114. I sometimes wanted to run away from home.	T	F
115. I would never play cards (poker) with a stranger.	T	F
116. I have felt embarrassed over the type of work that one or more members of my family have done.	T	F
117. People often talk about me behind my back.	T	F
118. I am bothered by acid stomach several times a week.	T	F
119. I don't think I'm quite as happy as others seem to be.	T	F
120. I have one or more bad habits which are so strong that it is no use fighting against them.	T	F

	True	False
121. The things some of my family have done have frightened me.	T	F
122. My home as a child was less peaceful and quiet than those of most other people.	T	F
123. As a youngster in school I used to give the teachers lots of trouble.	T	F
124. I am troubled by attacks of nausea and vomiting.	T	F
125. I would have been more successful if people had given me a fair chance.	T	F
126. I have often felt guilty because I have pretended to feel more sorry about something than I really was.	T	F
127. My skin seems to be unusually sensitive to touch.	T	F
128. Even the idea of giving a talk in public makes me afraid.	T	F
129. If the pay was right I would like to travel with a circus or carnival.	T	F
130. I never cared much for school.	T	F
131. There seems to be a lump in my throat much of the time.	T	F
132. Almost everyday something happens to frighten me.	T	F

	True	False
133. My parents never really understood me.	T	F
134. My family has objected to the kind of work I do, or plan to do.	T	F
135. A person is better off if he doesn't trust anyone.	T	F
136. The members of my family were always very close to each other.	T	F
137. Most people make friends because friends are likely to be useful to them.	T	F
138. I do not blame a person for taking advantage of someone who lays himself open to it.	T	F
139. I usually expect to succeed in things I do.	T	F
140. I have no enemies who really wish to harm me.	T	F
141. I wish I could get over worrying about things I have said that may have injured other people's feelings.	T	F
142. I think nearly anyone would tell a lie to keep out of trouble.	T	F
143. I don't blame any one for trying to grab everything he can get in this world.	T	F
144. My hardest battles are with myself.	T	F

	True	False
145. I know who, apart from myself, is responsible for most of my troubles.	T	F
146. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.	T	F
147. Some of my family have habits that bother and annoy me very much.	T	F
148. I believe my sins are unpardonable	T	F
149. I have very few quarrels with members of my family.	T	F
150. I have often lost out on things because I couldn't make up my mind soon enough.	T	F
151. I can easily make other people afraid of me, and sometimes do for the fun of it.	T	F
152. I believe I am a condemned person.	T	F
153. In school I was sometimes sent to the principal for misbehaving.	T	F
154. I have at times stood in the way of people who were trying to do something, not because it amounted to much but because of the principle of the thing.	T	F
155. Most people are honest chiefly through fear of being caught.	T	F

	True	False
156. Sometimes I enjoy hurting persons I love.	T	F
157. I have not lived the right kind of life.	T	F
158. Sometimes I feel as if I must injure either myself or someone else.	T	F
159. I seem to be about as capable and clever as most others around me.	T	F
160. I sometimes tease animals.	T	F
161. I get angry sometimes.	T	F
162. I am entirely self-confident.	T	F
163. Often I can't understand why I have been so cross and grouchy.	T	F
164. I shrink from facing a crisis or difficulty.	T	F
165. I think most people would lie to get ahead.	T	F
166. I have sometimes felt that difficulties were piling up so high that I could not overcome them.	T	F
167. If people had not had it in for me I would have been much more successful.	T	F
168. I have often found people jealous of my good ideas, just because they had not thought of them first.	T	F

	True	False
169. Much of the time I feel as if I have done something wrong or evil.	T	F
170. I have several times given up doing a thing because I thought too little of my ability.	T	F
171. Someone has it in for me.	T	F
172. When someone does me a wrong I feel I should pay him back if I can, just for the principle of the thing.	T	F
173. I am sure I get a raw deal from life.	T	F
174. I believe I am being followed.	T	F
175. At times I have a strong urge to do something harmful or shocking.	T	F
176. I am easily downed in an argument.	T	F
177. It is safer to trust nobody.	T	F
178. I easily become impatient with people.	T	F
179. At times I think I am no good at all.	T	F
180. I commonly wonder what hidden reasons another person may have for doing something nice for me.	T	F
181. I get easily angry then get over it soon.	T	F

	True	False
182. At times I feel like smashing things.	T	F
183. I believe I am being plotted against.	T	F
184. I certainly feel useless at times.	T	F
185. At times I feel like picking a fist fight with someone.	T	F
186. Someone has been trying to rob me.	T	F
187. I am certainly lacking in self-confidence.	T	F

INSTRUCTIONS: The following questions are intended to indicate various emotional personality traits. It is not a test in any sense because there are no right and wrong answers to any of the questions.

After each question you will find a row of numbers whose meaning is given below. All you have to do is to draw a ring around the number that describes you best.

0 means "No", "never", "not at all", etc.
1 means "Somewhat", sometimes", "a little", etc.
2 means "About as often as not", "an average amount", etc.
3 means "Usually", "a good deal", "rather often", etc.
4 means "Practically always", "entirely", etc.

* * *

1. Do you get anxious if you have to speak or perform in any way in front of a group of strangers? 0 1 2 3 4

2. Do you worry if you make a fool of yourself, or feel you have been made to look foolish? 0 1 2 3 4

3. Are you afraid of falling when you are on a high place from which there is no real danger of falling--for example, looking down from a balcony on the tenth floor? 0 1 2 3 4

4. Are you easily hurt by what other people do or say to you? 0 1 2 3 4

5. Do you keep in the background on social occasions? 0 1 2 3 4

6. Do you have changes of mood that you cannot explain? 0 1 2 3 4

7. Do you feel uncomfortable when you meet new people? 0 1 2 3 4

8. Do you daydream frequently, i.e. indulge in fantasies not involving concrete situations?	0	1	2	3	4
9. Do you get discouraged easily, e.g. by failure or criticism?	0	1	2	3	4
10. Do you say things in haste and then regret them?	0	1	2	3	4
11. Are you ever disturbed by the mere presence of other people?	0	1	2	3	4
12. Do you cry easily?	0	1	2	3	4
13. Does it bother you to have people watch you work even when you do it well?	0	1	2	3	4
14. Does criticism hurt you badly?	0	1	2	3	4
15. Do you cross the street to avoid meeting someone?	0	1	2	3	4
16. At a reception or tea do you go out of your way to avoid meeting the important person present?	0	1	2	3	4
17. Do you often feel just miserable?	0	1	2	3	4
18. Do you hesitate to volunteer in a discussion or debate with a group of people whom you know more or less?	0	1	2	3	4
19. Do you have a sense of isolation, either when alone or among people?	0	1	2	3	4
20. Are you self-conscious before 'superiors' (teachers, employers, authorities)?	0	1	2	3	4

21. Do you lack confidence in your general ability to do things and to cope with situations?	0	1	2	3	4
22. Are you self-conscious about your appearance even when you are well-dressed and groomed?	0	1	2	3	4
23. Are you scared at the sight of blood, injuries, and destruction even though there is no danger to you?	0	1	2	3	4
24. Do you feel that other people are better than you?	0	1	2	3	4
25. Is it hard for you to make up your mind?	0	1	2	3	4

CHECK THE APPROPRIATE BLANK.

1. Present Educational Level: Check one.

   Grade 7 or lower____, Grade 8____, Grade 9____, Grade 10____, Grade 11____, Grade 12____, 1 year technical____, 2 year technical____ 1 year university____, 2 years university____, 3 years university____, 4 years university____, post-graduate level____.

2. Sex: Male____, Female____

3. Age: ____ years.

4. Marital Status:

   single____, married____, separated____, divorced____.

5. Present Income in Home of Parents (if applicable):

   N/A____, under $5,000____, $5,000-$10,000____, $10,000-$20,000____, $20,000-30,000____, over $30,000____.

6. I am unemployed ____, I am employed full-time ____, employed part-time ____, student ____.

7. How would you rate the quality of your relationships within your family?

   highly cohesive____, moderately cohesive ____, low cohesion____, no cohesion at all____.

8. Does either parent use alcohol excessively?

   yes ____, no____, don't know, not applicable____

9. Does either parent smoke cigarettes excessively?

   yes____, no____, don't know, not applicable____

FOR EACH SUBSTANCE:	Circle 1 or 2		Circle one of the following four				Circle one of the underlying five				
	Yes	No	Not at all	Monthly or less	About weekly	Several times a week	Never	Before high school	During high school	During college	School years ended
CIGARETTES	1	2	1	2	3	4	1	2	3	4	5
ALCOHOL	1	2	1	2	3	4	1	2	3	4	5
MARIJUANA, HASHISH	1	2	1	2	3	4	1	2	3	4	5
BARBITUPATES	1	2	1	2	3	4	1	2	3	4	5
LSD	1	2	1	2	3	4	1	2	3	4	5
STP, THC	1	2	1	2	3	4	1	2	3	4	5
MESCALINE	1	2	1	2	3	4	1	2	3	4	5
PEYOTE	1	2	1	2	3	4	1	2	3	4	5
GLUE	1	2	1	2	3	4	1	2	3	4	5
OPIUM	1	2	1	2	3	4	1	2	3	4	5
COCAINE	1	2	1	2	3	4	1	2	3	4	5
HEROIN, MORPHINE METHADONE	1	2	1	2	3	4	1	2	3	4	5
OTHER (write in)	1	2	1	2	3	4	1	2	3	4	5
	1	2	1	2	3	4	1	2	3	4	5
	1	2	1	2	3	4	1	2	3	4	5

11. Which drug did you start with?

I have not used drugs____. Amphetamine; barbiturates____; Marijuana or hashish____; LSD____; other psychedelics (DET, DMT, mescaline, peyote, psilocykin, STP, etc.)____; Heroin, opium, cocaine____; Pain killers (codeine, darvon, demerol, morphine)____; Anti-depressants ____; Tranquillizers____; Glue (or other highly solvent liquids)____.

12. Plans for drug use in future:

More frequently than past____, less frequently than in past____, I plan to terminate drug usage____, I do not use drugs____.

13. I have been found guilty of an offence under the Criminal Code of Canada. (This does not include automobile or highway violations.)

yes____, no____

If yes:

I have been convicted 1, 2, 3, 4, 5, 6 or more times. (Circle appropriate number.)

I have served ___ number of years in a correctional institution. (If not applicable write in '0'.)

14. I have been found guilty of an offense directly concerned with the taking or handling of certain drugs (other than alcohol).

yes____, no____

15. Mark on the time chart below with an X, when you approximately last used drugs (not including alcohol).

Never	Over a year ago	Last year	A month to 2 weeks ago	Last week	Yesterday	Today
☐	☐	☐	☐	☐	☐	☐

16. Mark on the time chart below when you would like to use drugs--other than alcohol in the future.

Today	Tomorrow	In the next week	In the next month	In the next year	In the distant future	Never
☐	☐	☐	☐	☐	☐	☐

17. What things are most difficult for you to do?

_____

_____

_____

_____

18. What effect do you or did you get from using drugs?

_____

_____

_____

_____

APPENDIX D

Correlation of Age With Test Scores.

Table 10

Within Groups Correlation of Age with Dependent Measures

	well-being	socialization	responsibility
age	.16478	.21538	.29519

	anxiety	direction of hostility	amount of hostility
age	-.02385	.13824	-.15285

Table 11

Within Non-Criminal Controls (Transit System Employees)

Group, Dependent Variables Correlated with Age

	well-being	socialization	responsibility
age	.1484	.3914	.0020

	anxiety	direction of hostility	amount of hostility
age	.2839	.2935	.1529

The Contribution of Age to the Final Results

Table 10 shows the within groups correlation of age with the other dependent measures. These low correlations within groups indicate how little increasing age (within these groups) contributes to higher scores on these measures.

Table 11 shows the specific figures for the non-criminal control group. The highest correlation in this group is between age and socialization, $r = .3914$. This means that within this control group one could predict .1521 of the variance of the socialization measure knowing the ages of the individuals. This is a low degree of predictability. These low correlations imply that one can compare the results on the dependent measures for the different age groups in the present study.