# A STUDY OF THE MACANDREW SCALE AND ITS USE IN PREDICTING FIRST AND MULTIPLE DUI OFFENDERS

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Master of Arts

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by

Lindah W. Major

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To the Graduate and Research Council:

I am submitting herewith a Research Paper written by Lindah W. Major entitled "A Study of the MacAndrew Scale and its use in Predicting First and Multiple DUI Offenders." I have examined the final copy of this paper for form and content, and I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.

Major Professor

Accepted for the Graduate and Research Council:

Dean of the Graduate School

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# CHAPTER 1

## Introduction

Plato counseled temperance and spoke out against the growing incidence of drunkness in Athens (Babor, 1986). Yet, today thousands of Americans drink alcohol in excess, get into their cars, and head down Main Street. An estimated 23,500 people are killed annually in alcohol related accidents, and 700,000 more are injured (Blank, 1985). This is not a new problem we are facing, but technology has enabled us to become more destructive. With its many facets of human sufferings, alcoholism is of primary concern within our society today. The effects of alcohol abuse have left no one untouched. Alcoholism, as well as other forms of substance abuse, remains a difficult and challenging foe for our society to attempt to conquer.

Through our legal system society is saying, "yes, we will do something, we will tighten our Driving Under the Influence (DUI) laws." Mother's Against Drunk Driving (MADD), Students Against Drunk Driving (SADD), and other grassroot organizations are joining their voices and reframing society's attitude about a citizen's right to drive while intoxicated.

Since the time of Plato tremendous strides have

been made in diagnosing, understanding, and treating the problems of alcoholism. In addition to their involvement in these areas, psychologists play an important role in researching for better ways to assess and predict the enigma. Subjectively, clinicians may know that a person is an alcoholic but objective conformation is often necessary. The MacAndrew Alcoholism Scale (MAC) is the most widely used and best validated instrument available at this time for objective assessment of alcoholism. As such, the MacAndrew Scale is used in many assessment/treatment programs with alcoholics, including the DUI program at the Pennyroyal Center. This is a program where first and/or multiple offenders with a DUI conviction are referred for assessment, education, and treatment.

Given its wide acceptance, clinicians need to understand the nature of the instrument, its reliability, validity, and unique characteristics. A review of the MacAndrew Scale and a proposal for future research are the focus of the paper.

# CHAPTER 2

## Literature Review

### Definition of an Alcoholic

The lack of a consistent definition of an alcoholic has been a methodological criticism of previous alcoholism scale constructions. The current DSM III (1980) avoids the term alcoholic and deals with behaviors associated with abuse and dependence. Some clinicians consider alcoholism to be a symptom of some psychopathic, neurotic, or psychotic disorder (Goldstein & Linden, 1969). Other investigators see alcoholism as being either addictive, episodic, or habitual excessive alcohol use (Apfeldorf, 1978).

Moore (1985) studied 200 adolescent males convicted of misdemeanor offenses. He classified them, according to their pattern of alcohol intoxication and factor analysis of the California Psychological Inventory, into 14 personality types.

Jellinek classified alcoholics as alpha, beta, gamma, and delta types. Alpha alcoholism was equated with psychological dependence. He did not regard alpha alcoholism as an illness per se. Beta alcoholism involved medical complaints, such as cirrhosis of liver but without physical or psychological dependence. He viewed delta alcoholism as physiological dependence characterized by increased tissue tolerance to alcohol,

adaptive cell metabolism, withdrawal symptoms, and craving. Gamma alcoholism had the characteristics of delta alcoholism plus loss of control (Jellinek, 1960).

Rosen studied institutionalized alcoholics with the MMPI and concluded that the alcoholics in the varying environmental settings differed very little from the populations of the various treatment facilities. He concluded that alcoholics do not have unique personality characteristics but have characteristics similar to the other psychiatric patients in the various institutional settings (Apfeldorf, 1978).

MacAndrew believes alcoholics have unique, stable personality characteristics which his scale measures. He believes primary alcoholics are bold, uninhibited, impulsive, self confident, sociable people who mix well with others. He believes they demonstrate rebellious urges and resent authority. They enjoy carousing, gambling, playing hooky, and cutting up. However, they are drawn to religion (Burke, 1983). MacAndrew views primary alcoholics as reward seeking and secondary alcoholics as punishment avoidant. In 1979 MacAndrew hypothesized the 15% false negatives on his scale are in reality "reactive or secondary alcoholics." He describes these people as "neurotics who also happen to drink too much" and believes that they do so to remove themselves from the pain of

their daily lives or to self medicate (MacAndrew, 1979, p. 16). MacAndrew views the alcoholic as not fitting neatly into the traditional psychopathic, neurotic, or psychotic classification. For MacAndrew and subsequent researchers of his scale, categorizing alcoholics as alcoholic is sufficient defining (Apfeldorf, 1978). Just as MacAndrew avoids spelling out his definition of an alcoholic, neither does he specify what the MacAndrew Scale (MAC) measures.

Schwartz and Graham (1979) suggest the:

> MAC may assess personality characteristics of impulsivity, non-insightful, nondefensiveness, and general psychological maladjustment. It is associated with self-description of resentment of parental and societal standards, problems in concentration, guilt and remorse. (p. 1094)

When the MAC was correlated with other MMPI scales, they found it suggested:

> MAC scores are associated with two intuitive clusters of personality characteristics and self-descriptions. The first cluster is related to a shallow, impulsively aggressive or hostile interpersonal stance characterized by a high level of energy expenditure. The second cluster is related to general psychological maladjustment and problems with thinking, concentration and possibly perception. (p. 1094)

Galanter (1983) stated:

> In truth, we have all intuitively already accepted the probability that there are several different alcoholisms, a genetically based one, a behaviorally conditioned one, a sociologically induced one, a crisis-induced one, and one induced by depression, sociopathy or loss. (p. 374)

The consensus of researchers' definitions of alcoholism appears to be moving in the direction of accepting Galanter's position.

## Review of Alcoholism Scales

The Minnesota Multiphasic Personality Inventory (MMPI), with forty years of use to its credit, has earned a prestigious position in the psychologist's arsenal. Because the MMPI has been a popular test and has a large item pool many researchers who study alcoholism have seen this as a convenient vehicle for developing scales to measure addiction.

The most widely known of the older derived scales: the Holmes, the Hoyt and Sedlacek, and the Hampton were reviewed by MacAndrew and Geertsma (1964). The Holmes scale was successful in discriminating those persons for whom alcohol misuse is the primary focus of their lives. However, it did not discriminate well with other populations. The Hampton scale correlates highly with Welch's anxiety scale, a scale measuring maladjustments. The Hoyt and Sedlacek scale was

found to discriminate male, but not female alcoholics from controls. None of the older derived scales won wide acceptance (Apfeldorf, 1978).

In wide use today, however, and often cited in the literature is the Michigan Alcoholism Screening Test (MAST). The MAST was published in 1971 by Dr. Melvin Selzer. It was well received and quickly gained wide use as a detection instrument. No special training is required to score this 25 to 30 item instrument. It takes about ten minutes to administer and is suitable for individual, group, or self administration (Sher & McCrady, 1984). It has a high level of face validity; therefore, it is effective in identifying those who acknowledge drinking excessively. In its three versions the MAST has been used for screening diverse groups for alcoholism. It has been used with DUI offenders, college students, unemployed welfare recipients, general hospitalized patients, and alcoholics. Zung, through factor analysis, identified six independent factors which permit the construction of an alcoholism profile (Jacobson, 1983). The factors are: denial, delibitation, marital discord, work problems, help seeking, and social discord. These factors are remarkably similar to life areas frequently discussed in the literature (Jacobson, 1983).

Zung's work could move the MAST from being a screening instrument to a multi-dimensional tool

with implications for referral, assessment, and treatment. However, at present it remains a screening device which identifies a large number of false positives. The overall "hit rate" of the MAST with DUI's is 75% (Jacobson, 1983). The MAST may have evolved from being a detection instrument to being an assessment device but Jacobson (1983) states that it is not expected to become a valid and reliable diagnostic tool.

MacAndrew and Geertsma (MacAndrew, 1965) researched the available alcoholism scales and concluded that the primary weakness of the scales was their use of normals for control groups. Therefore, the salient factor being derived was the degree of the subject's deviance and maladjustment rather than the unique personality characteristics of the alcoholic.

Description of MacAndrew Scale

Craig MacAndrew (1965) designed his scale by selecting MMPI items which differentiated alcoholic outpatients from comparable psychiatric outpatients at the same setting. Through item analysis MacAndrew detected the individual statements in the five hundred and sixty-six MMPI item pool that were endorsed by alcoholics. MacAndrew developed a fifty-one item scale which differentiated between adult male outpatients and adult male psychiatric patients with no history of drug use. For this original study MacAndrew had three hundred subjects in each category.

On the MacAndrew Scale two of the original questions asked directly about alcohol consumption and were dropped. Many of the forty-nine remaining questions do not appear to be related to substance abuse. Examples are: "My table manners are not quite as good at home as when I am out in company," "I like to cook," and "I used to keep a diary." The MacAndrew has low face validity which makes it an appropriate device to use with people not readily willing to acknowledge an abuse problem.

MacAndrew employed a cut-off score of 24 and correctly identified 81.75% of the patients in his standardization samples. False positives amounted to 9.5% and false negatives to 8.75%. In his cross validation study using 100 in each sample group, MacAndrew correctly identified 81.5% with 10% false positives and 8.5% false negatives (Burke & Marcus, 1977). For a list of the questions on the MacAndrew Scale cite the Appendix.

Characteristics of the Instrument

The MacAndrew was always administered imbedded in the MMPI until 1979. Then MacAndrew administered his scale both in the context of the MMPI and independently to three groups: male VA hospital patients, male DUI offenders, and male college students. He found correlations of .81, .73, and .80, respectively. Comparison of the scores confirmed that the mean

scores for both administrations were stable (MacAndrew, 1979).

Jacobson (1983) offered support to MacAndrew's finding regarding the validity and reliability of the MAC for off-scale administrations. He refers to an unpublished study by Burg. Four to five weeks after self administering the off-scale MAC, Burg gave complete MMPI's to his DUI subjects. Burg found a test-retest reliability coefficient of .89 (Jacobson, 1983). This reliable off-scale administration is a tremendous time saver.

In MacAndrew's standardization sample, all subjects had F raw scores under 16. Historically, MMPI F scale scores of 16 and higher had been grounds to consider the MacAndrew Scale invalid. Apfeldorf and Hunley (1976) and MacAndrew (1979) have determined that this belief is unfounded. They documented that elevated F's did not reduce the ability of the MAC to discriminate.

However, MacAndrew (1979) continues to insist that a raw score of nine be used as a cut-off score on the fifteen item MMPI L scale. This scale measures attempts to look good and socially acceptable. It provides evidence that the examinee is being honest with answering the MacAndrew items. Thus, the MacAndrew Scale and the L scale, a total of 64 questions, could be administered and scored in approximately fifteen minutes (Jacobson, 1983).

The average raw score range on the MacAndrew Scale for males is from 16 to 23; for females the average range is from 16 to 22. Secondary and suicide prone alcoholics are found to score within this range (Duckworth & Anderson, 1986). Setting the cut-off point at 24, as MacAndrew recommends for males, picks up about 80% of abusers and potential abusers. As females have a lower average range, Duckworth and Anderson (1986) and other investigators recommend a cut-off score of 23 for females in most environments.

If a person is referred because of substance abuse problems, a MacAndrew score of 24 would confirm the diagnosis. Yet a person with psychological problems but without substance abuse could obtain this score. Others in this range may be prone to but not be abusing a substance because of past experience with alcoholics or because of religious beliefs (Duckworth & Anderson, 1986).

A score of 27 very strongly suggests an addiction problem of some type. When the raw score is over 30, addiction is nearly certain.

Since blacks and obese persons tend to score higher on the MAC, Meyer suggests adding two points to the normally accepted cut-off scores of these clients (Meyer, 1983).

Reliability Studies

It is difficult to find and identify a "pre-alcoholic" because we don't know exactly what characterizes

the pre-alcoholic. For example, heavy drinkers have a greater likelihood of becoming alcoholics than nondrinkers, but not all heavy drinkers become alcoholics.

The MacAndrew Scale appears to measure some longstanding cluster of characterlogical traits and has demonstrated remarkable stability. It appears to be unrelated to the history of abuse and in several studies scores have not been substantially lowered by treatment. These factors combine to give the MacAndrew credibility as a predictor of future substance abuse.

The following is a brief review of some of the significant studies which document the stability of the instrument. Rohan (1972) researched a group of 40 male veterans admitted to the VA hospital because of a history of alcohol abuse. Their mean age was 43.3 years. They had begun drinking at an average age of 20. The average educational level was 11 years. The men had been hospitalized an average of 9.9 days before being admitted to the Alcoholic Rehabilitation Program (ARP). Their average length of stay in the treatment program was 69.2 days. The MMPI was administered to each man on an average of 1.3 days after admission to the ARP and again within a week before his discharge. Pretreatment and posttreatment scores were analyzed using the t-test for correlated means. The MMPI profile reflected

significant changes which indicated the men substantially increased their functioning level with treatment.

In contrast the MacAndrew Scale identified 85% of the men as alcoholics on admission and identified 85% as alcoholics at discharge. Thus, the traits measured by the MacAndrew appear to remain stable over time and are not easily improved with treatment (Rohan, 1972).

Chang, Caldwell, and Moss (1973) administered three MMPI's to inpatient alcoholics over a one-year period. Three types of treatment were applied to the groups. At the end of the treatment period the MacAndrew Scale scores for all three groups appeared unaffected. Thus, the type of treatment does not appear to be a significant variable in lowering the MacAndrew Scale score.

Huber and Danahy (1975) tested 92 veterans with the MMPI on admission and discharge from a 90-day alcoholic treatment program. They also found that with treatment the MMPI scales showed improvement. Yet the MacAndrew scores were not significantly different (Huber & Danahy, 1975). The above findings were also confirmed by Lachar in 1976.

Hoffman, Loper, and Kammeier (1974) in a thought provoking and often cited study found no significant difference in the MacAndrew scores of a group of alcoholics when compared with their pre-alcoholic

college entrance MacAndrew score. Thus, the MacAndrew Scale score each student received upon college entrance remained statistically stable for an average of 13 years. The MacAndrew Scale scores of the pre-alcoholic college students differentiated them at a 72% accuracy level from their classmates. No other studies spanning lengthy periods have been published.

The MacAndrew Scale has demonstrated reliability in discriminating abusers from control. Thus, it appears to be measuring some trait or cluster of traits that selects people who share these traits from the controls who do not.

The MacAndrew also demonstrates stability over time. Scores obtained in late adolescence appear to have predictive value for indicating people who may have a future habit problem. The MacAndrew often appears to remain stable with treatment.

Validity Studies

The MacAndrew Scale has been cross-validated many times since 1965 with many diverse populations and in a variety of settings (Rhodes, 1969; Uecker, 1970; Rohan, 1972; Chang, Caldwell & Moss, 1973; deGroot & Adamson, 1973; Apfeldorf & Hunley, 1975; Schwartz & Graham, 1979; Friedrich & Loftsgard, 1978; Clopton, Weiner & Davis, 1980; O'Neil, Giacinto, Waid, Roitzsch, Miller & Kilpatrick, 1983; Sher & McCrady, 1984). The consensus of these studies has established the MacAndrew Scale as a useful, objective screening

instrument to discriminate alcohol abusers from controls at approximately 85% accuracy (Duckworth & Anderson, 1986).

The MacAndrew is noted for its ability to measure some shared stable traits. However, there is no general agreement regarding the identification of what per se the MacAndrew does measure.

The MacAndrew Scale attained acceptance as an instrument to discriminate alcoholics from psychiatric patients. Then the possibility of the MacAndrew Scale pinpointing a general addictive propensity emerged. Leon, Kolotkin, and Korgeski (1979) looked at obesity, anorexia, and smoking, all habits assumed to be addictive in nature. They concluded that massively obese persons and male smokers scored near the range of addiction. Leon, et al. (1979) cited a study by J. R. Graham in which Graham studied non-alcoholic compulsive gamblers. He found them to score in the addictive range.

Craig MacAndrew apparently was aware even in 1965 that his scale might be a substance abuse scale because he never referred to it as an alcoholism scale. Other researchers, deGroot for example, referred to the MacAndrew Scale as the MacAndrew Alcoholism Scale (MAS). MacAndrew and later researchers refer to his scale as the MAC which has recently evolved into being referred to as the MacAndrew Addiction Scale (Jacobson, 1983).

Lachar, Berman, Grisell, and Schooff (1976) found that on the MacAndrew Scale alcoholics, heroin addicts, and polydrug users obtained similar scores which were significantly higher than those of matched control groups of psychiatric patients. Schwartz and Graham (1979) found the MAC appropriate for the detection of heavy marijuana use (Moore, 1984).

Craig (1984), in a study with drug addicts, found that subjects with co-existing alcohol problems obtained higher MAC scores.

Many researchers (Lachar, Berman, Grisell, & Schooff, 1976; Burke & Marcus, 1977; MacAndrew, 1979; Rathus, Fox, Ortins, & Bradley, 1980; Moore, 1984; and Kranitz, 1972) support the position that the MAC does measure some personality factors common to all substance abusers.

Ruff, Ayers, and Templer (1975) imply that the MacAndrew is a measure of sociopathy. Numerous other researchers disagree with that position (Rathus, Fox, Ortins, & Bradley, 1980). Thus, there is agreement that the MacAndrew reliably selects abusers from controls but there is no consistent agreement regarding the validity of the MacAndrew Scale.

Moderating Variables

Adolescents as a group have received considerable study. MacAndrew (1979) studied four groups of youths (ages 16-22) and confirmed the ability of the MacAndrew

Scale to discriminate abusers from controls with this age group at 82.1% accuracy.

Wisniewski, Glenwick, and Graham (1985) assessed the ability of the MacAndrew Scale as a screening device for problem drinking and drug use with 403 Caucasian ninth through twelfth graders. There were 177 males (mean age = 16.26 years) and 226 females (mean age = 15.87 years) from two Ohio school districts. In addition to the MacAndrew Scale, they administered the Adolescent Alcohol Involvement Scale, a socio-demographic questionnaire, an alocholic/drug frequency questionnaire, and the Adolescent Drug Involvement Scale. The MacAndrew was determined to be the best single predictor of alcohol/drug use for both males and females. Others have studied adolescents and documented the appropriate use of the MacAndrew Scale with this age group (Wolfson & Erbaugh, 1984; Moore, 1984; Rathus, Fox, Ortins, & Bradley, 1980).

Females have been the target of much less research than males. The scale was standardized using a male population. Schwartz and Graham (1979) studied a predominantly female group and reported overall accuracy rates on the MacAndrew comparable to the accuracy rates obtained in the male only studies.

Duckworth and Anderson (1986) determined that the female average MacAndrew Scale score is 19, compared to 21 for males. Thus, Duckworth suggests a cutting

score of 23 for females. Svanum, Levitt, and McAdoo (1982) found using a cutting score of 23 they could correctly classify 81% of the females. Thus, the MacAndrew Scale does appear to be equally as discriminating with females although debate continues to center around the cutting score.

Race as a moderating variable was addressed by Walters, Greene, Jeffrey, Kruzich, and Haskin (1983). In an active duty inpatient military sample, they found the MAC able to discriminate white alcoholics from white non-alcoholics at only 66.3% accuracy. In their study, the MAC did not discriminate black alcohlics from black non-alcoholics at a statistically significant level. Additionally, in their study black non-alcoholics scored significantly higher than white non-alcoholics.

On the other hand, Hightower (1985) in her study found no significant black-white differences on the MAC when they were matched in terms of socioeconomic status. Burke and Marcus (1977) with 222 black and white male VA inpatients achieved a 74% accuracy rate.

Racial differences on the MMPI have been studied by Page and Bozlee (1982). Their subjects were Caucasians, American Indians, and Hispanic Americans. They concur that racial and ethnic cross-validation on a large scale is needed.

Although additional research is needed in the areas of moderating variables such as race and sex, the research consistently supports the efficacy of the MacAndrew Scale as a generic substance abuse scale.

# CHAPTER 3

## The Pennyroyal Center's DUI Program

As mentioned earlier, the MacAndrew Scale as a clinical instrument has been used in several treatment programs. One of those programs is the DUI Assessment/ Education Program at the Pennyroyal Center in Hopkinsville, Kentucky.

According to the Kentucky Law KRS 186.400 and KRS 186.560 governing Driving While Intoxicated, when a person is arrested for their first DUI their license is revoked for six months. Their license may be reinstated in 30 days if the substance abuser attends an approved program.

The Pennyroyal Center's assessment/education program is one of the court approved options available to first offenders. This program is approved by the Transportation Cabinet and meets the Transportation Cabinet's requirements.

The Pennyroyal Center's multiple offenders' program meets the requirements of the Kentucky statutes for multiple offenders. Multiple offenders are required to attend the Pennyroyal Center's program and may be required to remain in treatment for up to one year.

The Pennyroyal Center's Driving Under the Influence (DUI) first offender's assessment and education program is an eight-hour, three visit course that includes

both individual and group activities. Members of the offender's family are invited to attend the group activities and some of the individual activities. On the first visit, a social worker takes a complete psychosocial history with special emphasis on attempting to determine whether the DUI offense reflects a pattern of substance abuse. Each offender completes an MMPI on their initial visit.

The second visit consists of a group education/ experimental activity. Special attention is given to the roles played by the various family members in an alcoholic family and to low risk drinking choices.

The third visit is an individual session. The results of the MMPI and the MacAndrew Scale are shared with the offender. Some offenders are encouraged to enter treatment, others are encouraged to attend Alcoholics' Anonymous or Narcotic's Anonymous. All offenders and their families are urged to make some behavioral commitments not to drive when they have been drinking.

Multiple offenders are required to attend the Pennyroyal Center's multiple offender program. They also complete an MMPI. They are assigned on an individual basis by the Coordinator of Substance Abuse Service to one of several treatment options.

There are some clinical issues related to these programs that the MacAndrew Scale may be able to

address. Perhaps some of the first offenders do not have a substance abuse problem but misused alcohol at the time of arrest. The Center needs to determine if the first offense was situational or habitual. Secondly, there is a need to establish whether or not the person would benefit from treatment. In order to address these issues an appropriate MacAndrew cut-off score might help increase the probability of correct assessment.

Based upon case history, clinical impression and the MacAndrew Scale score, clinicians should better be able to predict which individuals belong in which category. The Pennyroyal Center has determined that a cut-off score of 25 is critical in separating those groups. It would be expected that multiple offenders would have a higher MacAndrew Scale score than first offenders based on the research.

## CHAPTER 4

### Discussion of Pilot Investigative Project

A pilot study was attempted which looked at issues regarding the predictive value of the MacAndrew Scale. Differences between first and second DUI offender's scores were reviewed.

A random selection process was agreed upon and executed. Forty-one first DUI offenders involved in treatment during the second quarter of 1986 were selected. Forty-one multiple offenders in treatment at the same period were selected.

The composition by sex of each group was predominantly male. This is representative of DUI populations both locally and in other studies. There was no significant difference between the groups in composition by sex.

The mean age for first offenders ($x=27.27$) and the mean age for multiple offenders ($x=30.66$) was not significant ($t=1.64$). However, difference in age approached significance in the direction of multiple offenders being older.

Regarding educational level, the first offenders ($x=11.58$) and multiple offenders ($x=11.00$) were not found to differ significantly. Concerning marital status, the two groups did not differ significantly.

On the MacAndrew scale the first offenders ($x=25.07$) and multiple offenders ($x=27.171$) differed significantly ($t=-1.94$; $p=.05$).

Both of these mean scores are above the cut-off level used by the Pennyroyal Center. The fact that the multiple offenders' score is significantly higher than the first offenders' score adds weight to the possibility that the MAC score of first offenders could be used to predict second offenses.

Analysis was also done on the MMPI scales which is tangential to this paper. Table 1 gives tabulations of how first and multiple offenders differ on these scales.

Table 1

Comparison of First and Multiple Offenders

| | 1st Offenders | | Multiple Offenders | | t |
|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Score |
| Age | 27.27 | 9.25 | 30.66 | 9.42 | -1.64 |
| Educational Grade Level | 11.59 | 1.5 | 11.00 | 1.47 | 1.78 |
| MAC* | 25.07 | 5.02 | 27.17 | 4.75 | -1.94 |
| MMPI Scales** | | | | | |
| L | 53.56 | 6.97 | 52.85 | 8.84 | .40 |
| F | 54.80 | 8.15 | 58.49 | 7.93 | 2.07 |
| K | 56.88 | 10.57 | 56.15 | 10.47 | .31 |
| I | 51.29 | 7.78 | 58.83 | 11.86 | -3.40 |
| 2 | 55.39 | 8.41 | 61.09 | 9.53 | -2.87 |
| 3 | 54.512 | 7.56 | 60.37 | 10.11 | -2.97 |
| 4 | 62.88 | 10.14 | 69.22 | 11.46 | -2.65 |
| 5 | 54.99 | 8.91 | 53.05 | 9.92 | .52 |
| 6 | 56.95 | 8.94 | 60.49 | 6.82 | -2.01 |
| 7 | 54.98 | 8.52 | 57.22 | 10.21 | -1.08 |
| 8 | 57.71 | 12.03 | 60.31 | 10.95 | -1.03 |
| 9 | 61.73 | 9.59 | 60.61 | 13.56 | .43 |
| 0 | 49.07 | 8.37 | 50.22 | 8.54 | - .61 |

$p = .05$

$t = 1.68$

*MacAndrew Scale scores reported in raw score.

**MMPI Scale scores reported in t scores.

# CHAPTER 5

## Proposal for Future Research

Based upon interest, need, and the results of the investigative study, additional research is proposed regarding DUI first offenders who are predicted to become second offenders.

The MMPI scales and the MacAndrew Scale scores of the first DUI offenders will be examined. Evidence is being sought that a specific MacAndrew cut-off score or an elevated MacAndrew score combined with certain MMPI scale scores is predictive of an increased probability of an individual getting a second DUI arrest.

A group of DUI first offenders will be randomly selected. The group of individuals who receive a second DUI within two years will be compared with the group that does not receive an additional conviction. The data to be used in comparing these two groups are the MMPI Clinical Scale scores and the MacAndrew Scale scores from the first conviction.

It is important to know if other variables, in addition to the MacAndrew Scale, can differentiate between these two groups. From the research review and the pilot investigation, Scale 4 on the MMPI deserves investigation as its elevation may assist in predicting the second

offenders. The neurotic triad (Scales 1, 2, & 3) of the second offenders was significantly elevated over that of the first offenders. This finding will be investigated. Additionally, the demographic variables of sex, race, income, and marital status will be considered. The focal criterion of the research is the MacAndrew Scale as a predictor of the second DUI.

From the pilot investigation it is anticipated that the higher the MacAndrew Scale score the greater the probability of obtaining a second DUI. It is also predicted that the MacAndrew Scale score can be combined with the specific MMPI scales to increase the probability of correctly identifying individuals who will receive second DUI arrests.

# CHAPTER 6

## Conclusion

The MacAndrew Scale was derived from the MMPI in 1965 by Craig MacAndrew. In his original study and in many additional studies with diverse populations for the past 20 years, the MacAndrew Scale has discriminated alcoholics and other substance abusers from controls at approximately 85% accuracy. It contains 49 low face-validity questions.

The MacAndrew Scale has demonstrated reliability in performing the function for which it was designed. However, the validity issue remains unresolved. The traits it measures appear to be stable but debate continues over what per se is being measured. Another area where no final consensus has been reached is with the cut-off score. In an investigative study, the MacAndrew Scale score of multiple offenders was found to be significantly higher than the first offenders' MacAndrew Scale score. Additional research was proposed which would investigate the possibility of identifying first offenders who have a high probability of becoming a multiple offender. The proposed study and additional research is needed to fully elucidate the potential of the MacAndrew Scale.

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# APPENDIX

## Questions Derived from the MMPI that Constitute The MacAndrew Scale

1 - 6 - T I like to read newspaper articles on crime.
2 - 27 - T Evil spirits possess me at times.
3 - 34 - T I have a cough most of the time.
4 - 50 - T My soul sometimes leaves my body.
5 - 56 - T As a youngster I was suspended from school one or more times for cutting up.
6 - 57 - T I am a good mixer.
7 - 58 - T Everything is turning out just like the prophets of the Bible said it would.
8 - 61 - T I have not lived the right kind of life.
9 - 81 - T I think I would like the kind of work a forest ranger does.
10 - 86 - F I am certainly lacking in self-confidence.
11 - 94 - T I do many things which I regret afterwards (I regret things more or more often than others seem to).
12 - 116 - T I enjoy a race or game better when I bet on it.
13 - 118 - T In school I was sometimes sent to the principal for cutting up.
14 - 120 - F My table manners are not quite as good at home as when I am out in company.
15 - 127 - T I know who is responsible for most of my troubles.
16 - 128 - T The sight of blood neither frightens me nor makes me sick.
17 - 130 - T I have never vomited blood or coughed up blood.
18 - 140 - T I like to cook.
19 - 149 - F I used to keep a diary.
20 - 156 - T I have had periods in which I carried on activities without knowing later what I had been doing.
21 - 173 - F I liked school.
22 - 179 - F I am worried about sex matters.
23 - 186 - T I frequently notice my hand shakes when I try to do something.
24 - 224 - T My parents have often objected to the kind of people I went around with.
25 - 235 - T I have been quite independent and free from family rule.
26 - 243 - T I have few or no pains.
27 - 251 - T I have had blank spells in which my activities were interrupted and I did not know what was going on around me.
28 - 263 - T I sweat very easily even on cool days.
29 - 278 - F I have often felt that strangers were looking at me critically.
30 - 283 - T If I were a reporter I would very much like to report sporting news.
31 - 294 - F I have never been in trouble with the law.
32 - 309 - T I seem to make friends about as quickly as others do.
33 - 320 - F Many of my dreams are about sex matters.
34 - 335 - F I cannot keep my mind on one thing.
35 - 356 - F I have more trouble concentrating than others seem to have.
36 - 378 - F I do not like to see women smoke.
37 - 413 - T I deserve severe punishment for my sins.
38 - 419 - T I played hooky from school quite often as a youngster.
39 - 426 - T I have at times had to be rough with people who were rude or annoying.
40 - 445 - T I was fond of excitement when I was young (or in childhood).
41 - 446 - T I enjoy gambling for small stakes.

42 - 477 - T If I were in trouble with several friends who were equally to blame, I would rather take the whole blame than to give them away.

43 - 482 - T While in trains, busses, etc., I often talk to strangers.

44 - 483 - T Christ performed miracles such as changing water into wine.

45 - 488 - T I pray several times every week.

46 - 500 - T I readily become one hundred per cent sold on a good idea.

47 - 507 - T I have frequently worked under people who seem to have things arranged so that they get credit for good work but are able to pass off mistakes onto those under them.

48 - 529 - T I would like to wear expensive clothes.

49 - 562 - T The one to whom I was most attached and whom I most admired as a child was a woman. (Mother, sister, aunt, or other woman).

50 - 215 - T I have used alcohol excessively.

51 - 460 - F I have used alcohol moderately (or not at all).