A Comparative MMPI Study of Alcoholism and Criminal Behavior

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A COMPARATIVE MMPI STUDY OF
ALCOHOLISM AND CRIMINAL BEHAVIOR

by

Rudolf H. Stahlberg

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
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Rudolf H. Stahlberg
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THE PROBLEM AND ITS BACKGROUND

Until 1968, alcoholism and criminal behavior were considered to be different expressions of the same character disorder, the sociopathic or psychopathic personality. It was not until the most recent classification system was agreed upon that alcohol addiction was recognized as a behavioral entity in its own right, distinct from the criminal activities of the antisocial personality. The basis for this significant change was laid in 1956, when the American Medical Association officially recognized that alcoholism was a disease, and that excessive drinking was not something which the alcoholic could control at will. This new approach can be expected to lead to more sophisticated research models to study the dynamics of the noncriminal alcoholic, the nonalcoholic criminal offender, and of the individual who engages in both antisocial behavior and excessive drinking.

To date, most research studies into the characteristics of the criminal alcoholic have suffered from the traditional conceptuali-

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zation that excessive drinking is an antisocial act for which the individual is to be held responsible. In general, a one-to-one cause-and-effect model is formulated which assumes, without much evidence, that alcohol causes crime. Strongly influenced by psychoanalytic theory, it has been accepted by many researchers that the use of alcoholic beverages releases primitive, aggressive impulses which are then expressed in criminal activity. It is likely that such an approach oversimplifies what is probably a very complex phenomenon in the field of human behavior. It fails to take into account the fact that the majority of alcoholics never commit crimes, and that the majority of criminals are not alcoholic and do obey the laws most of the time. It further ignores many important sociological research studies which have found significant differences in both alcohol use and criminal behavior among ethnic and religious groups, and among socio-economic classes in the United States, and between various countries of the world. Jews, Chinese and Italians seldom succumb to alcoholism, while the Polish, French and Irish maintain high rates of excessive drinking. Bales has suggested that socio-cultural conditions affect rates of alcoholism in three ways:

"First is the degree to which culture operates to bring about acute needs for adjustment, or inner tensions,

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5Bales, Robert F., "Cultural Differences in Rates of Alcoholism." Quarterly Journal of Studies on Alcohol, VI (March 1946), 482.

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in its members. (Second is)...the sort of attitudes toward drinking which the culture produces in its members...The crucial factor seems to be whether a given attitude toward drinking positively suggests drinking to the individual as a means of relieving his inner tensions, or whether such a thought arouses strong counter-anxiety. (Third is)...the degree to which the culture provides suitable substitute means of satisfaction."

If one accepts this statement, then the United States would appear to be a very inadequate social system. This country has the highest rate of crime per capita among the Western nations, and is tied with Sweden for the lead in alcohol consumption.  

The most prevalent use of alcohol in Western societies is to facilitate interpersonal relationships in group situations and in this context may be viewed as releasing social, rather than antisocial impulses. On other individuals, alcohol seems to have a narcotizing effect which may be interpreted as inhibiting impulses, social or antisocial. Those familiar with Homer's Odyssey will recall that, when Circe gave the same drink to all of Ulysses' shipmates, some of them turned into bears, others into dogs, deer, pigs, foxes and monkeys. Thus, most past research into alcoholism seems to have suffered from severe methodological limitations because the symptom of excessive drinking has been viewed primarily as a unitary phenomenon. With the changing concepts about alcoholism and criminality, it can be anticipated that future research will emphasize the probability of multiple determinants. Such factors as

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class membership, early childhood experiences, religious and social training, and varying anxiety levels in individuals may receive increasing attention. In the case of the criminal alcoholic, it will also be necessary to evaluate situational factors in his present environment, in order to determine to what extent the opportunity exists that he can actually commit a criminal act while under the influence of alcohol.

The problem of alcohol addiction is a major one in the United States. As a public health problem, it is frequently ranked fourth, after heart disease, cancer and mental illness. With a present population of approximately 205 million, it is estimated that there are over six million alcoholic men and women in the country. About 200,000 new cases are reported each year. In order to be diagnosed as true alcoholics, they must meet the functional definition most widely considered as being authoritative:

"Alcoholism is a chronic disease, or disorder of behavior, characterized by the repeated drinking of alcoholic beverages to an extent that exceeds customary dietary use or ordinary compliance with the social drinking customs of the community, and which interferes with the drinker's health, interpersonal relations or economic functioning."

This definition has been expanded by others, particularly Hoff,

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7 loc. cit., p. 9.


who stipulates that there is loss of control over alcohol intake, where the individual finds himself drinking when he intends not to drink, or drinking more than he has planned. The alcoholic is also seen as suffering from functional or structural damage, either physiological, psychological, domestic, economic or social. Further, alcohol is used as a kind of universal therapy, whereby the drinker tries to keep his life from disintegrating through the use of a psychopharmacological substance.

Psychological theories of alcoholism have usually been based on analyses of post-hoc samples, with conclusions having been drawn from observed personality characteristics in adulthood. There are now some well-planned longitudinal studies in progress which, in time, may provide a more adequate formulation about the etiology of alcoholism. Freudian theorists believe that the disorder is due to one, or a combination of, three unconscious tendencies: self-destructive urges, oral fixation and latent homosexuality. One of the foremost proponents of the position that alcoholism is a form of self-destruction has been Menninger. He believes that the suicidal intentions are unconscious and emerge from a feeling of being betrayed in childhood. The parents led the child to expect more oral

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11 For example, Jones, Mary C., "Personality Correlates and Antecedents of Drinking Patterns in Adult Males." Journal of Consulting and Clinical Psychology, XXXII (February 1968), 2-12.

gratification than he actually received. As a result, "the alcoholic suffers at the same time from the wish to destroy his love-objects and the fear that he will lose them." There is some evidence that alcoholics may indeed be given to suicidal tendencies. McCord and McCord, in a post-hoc study based on the records of the 1935 Cambridge-Somerville Project, found that thirty per cent of the boys with suicidal tendencies later became alcoholics, while only fourteen per cent of those not manifesting such tendencies became excessive drinkers. Although the differences were not statistically significant, they did indicate a trend. In another study, analyzing successful suicides in the St. Louis area, Robins et al. found that thirty-one members of this group were alcoholics. They believed that alcoholic suicides were due to the temporary effect of intoxication on an individual's judgment. Alcohol was seen as being capable of inducing depression or feelings of self-pity, of decreasing inhibitions and self-preservatory tendencies, or of intensifying the feelings of inadequacy and personal failure of the neurotic. A proportion of the alcoholic suicides were judged to be impulsive, unpredictable and explicable only in terms of the intoxicated state.

Fenichel regards oral fixation as the cause of alcohol addic-

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14 Robins, Eli; Murphy, George; Wilkinson, Robert; Gassner, Seymour and Kayes, Jack, "Some Clinical Considerations in the Prevention of Suicide Based on a Study of 134 Successful Suicides." American Journal of Public Health, IL (July 1959), 888-899.

tion. Passive, dependent and narcissistic urges - an attitude toward life characterized by the wish to use the mouth as the primary source of gratification - are held responsible for the development of the disorder.

Abraham saw the alcoholic as having undergone severe frustration during the oral stage. As a consequence, there was a turning against the frustrating mother and an attempt to find solace with the father. The resulting over-identification produced latent or overt homosexuality. To guard against these tendencies, the alcoholic expresses his deviant urges through the addiction. The male camaraderie of the saloon and the reduction of inhibitions through alcohol allows the alcoholic to satisfy his homosexual urges.

Adler felt that feelings of inferiority were responsible. This inferiority may either be expressed openly, or it may be hidden behind a facade of superiority:

"Very frequently the beginning of addiction shows an acute feeling of inferiority marked by shyness, a liking for isolation, oversensitivity, impatience, irritability and by neurotic symptoms like anxiety, depression, and sexual insufficiency. Or the craving may start with a superiority complex in the form of boastfulness, a malicious criminal tendency, a longing for power."

Adlerians believe that these inferiority feelings result from childhood "pampering" because these individuals were brought up in

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an atmosphere of coddling and indulgence. When they reach adulthood, they are unable to cope with the demands of society. As a result, they develop strong feelings of inadequacy which they are trying to resolve through the use of alcohol.

White, representing the interpersonal psychologists, sees the disease to be a response to a number of different motives, but mostly to a suppressed conflict between dependent drives and aggressive urges:

"There is a repressed but still active craving for loving maternal care. There is also a strong aggressive need, suppressed by circumstances to the extent that it comes to aggression only in verbal form. Alcohol does a lot for these two needs. It permits the young man to act as aggressively as he really feels, without forcing him to assume full responsibility for his actions. It permits him to gratify his dependent cravings without forcing his sober consciousness to become aware of them. Alcohol thus allows him to satisfy strong needs without disturbing the neurotic protective organization that ordinarily keeps them in check."

In a psychiatrically oriented study, Zwerling and Rosenbaum found that most of the alcoholics they dealt with were dependent, depressed, schizoid, hostile and sexually immature. However, these authors warn that only very comprehensive research in physiological, cultural or socio-economic, and psychological fields will eventually yield satisfactory answers.

From their study of the boys from the Cambridge-Somerville Pro-

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ject, McCord and McCord concluded that alcoholism was primarily a middle class phenomenon, while criminal tendencies were mostly found in boys from the lower socio-economic classes. They believe alcoholism to be mostly a response to anxiety which results from an internal conflict between a strong need to be dependent, to be mothered and comforted, and an equally strong desire for independence. If the individual's needs are erratically satisfied and frustrated, as is often the case in middle class homes, dependency needs can be expected to increase in intensity, and to become one of the most powerful forces in life. A conflict is created because satisfaction alternates with frustration, according to changes in parental moods. With advancing age, increasing demands are made of the child, particularly the male, to become more independent. However, this may be incompatible with his dependent desires and he may find his adult male role distasteful. Since drinking of alcoholic beverages is recognized as a typically masculine act in American society, the alcoholic can feel "cared for" under the influence of alcohol. His troubles flee, his desire for comfort is satisfied, and he has temporarily alleviated the conflict between dependency desires and the necessity to function in the male role.

More recent workers in this area believe addiction to alcohol to be a much more complex matter. Cameron, for example, observed

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20 op. cit., pp. 40, 119-120.

that the disorder can be found among persons suffering from neurotic, psychotic and psychosomatic symptoms, as well as among the personality disorders. Horn and Wanberg\textsuperscript{22} studied persons admitted to a large state hospital for the treatment of problems associated with the excessive use of alcohol. They found that these patient displayed widely differing symptom patterns and concluded that there were no particular personality traits generally characteristic of alcoholics. Similarly, learning theorists hold that any individual, whether normal, neurotic, psychotic or criminal, can become addicted to alcohol. Alcoholism is viewed as conditioned behavior which, after frequent repetition and reinforcement, becomes a habit and assumes an independent existence of its own. Etiological or psychodynamic causation is not necessarily denied but in a disease of long duration, like alcoholism, the precipitating cause may often disappear while the behavior continues to exist\textsuperscript{23}.

Since the present study is concerned with the relationship of alcoholism to criminal behavior, it is also essential to review the major theories which have evolved to explain this phenomenon. Criminal tendencies share with alcoholism a degree of complexity which, to date, has also defied simplistic approaches. Antisocial personalities have always been better described than explained. In the early

\textsuperscript{22}Horn, John L. and Wanberg, Kenneth W., "Symptom Patterns Related to Excessive Use of Alcohol." \textit{Quarterly Journal of Studies on Alcohol}, XXX (March 1969), 35-58.

\textsuperscript{23}Franks, Cyril M., "Behavior Therapy, the Principles of Conditioning and the Treatment of the Alcoholic." \textit{Quarterly Journal of Studies on Alcohol}, XXIV (September 1963), 513.
1800's, Benjamin Rush\textsuperscript{24} spoke of these individuals as suffering from an "innate, preternatural moral depravity", in which "the will becomes the involuntary vehicle...of the passions." Prichard\textsuperscript{25} called the disorder "moral insanity" because he perceived such individuals as having lost the power of guiding themselves in accordance with moral principles. The terminology continued to change to "psychopathic inferiority", "constitutional psychopathic state", "character neurosis", "psychopathic personality", and in the official 1952 nosology\textsuperscript{26} was listed under the title "sociopathic personality disturbance - antisocial reaction." The latest official classification scheme\textsuperscript{27} refers to such individuals simply as "antisocial personalities." Until the latest change, alcoholics were classified together with the character disorders, because excessive drinking was considered to be a matter of "free will", rather than a disease.

The behavior of the criminal personality is characterized by his disdain for social conventions, his tendency to flout established authority and rules. He functions behind a deceptive social facade.


\textsuperscript{25}ibid., citing Prichard, J. C., A Treatise on Insanity and other Disorders Affecting the Mind. London: Sherwood, Gilbert, Piper, 1835.


\textsuperscript{27}American Psychiatric Association, Second Edition, op. cit., p. 43.
and has a well-developed ability to present an image of civility,
sincerity and maturity. However, he is totally insensitive to the
feelings of others and seems deficient in the capacity to share ten­
der feelings, or to experience genuine affection and love for oth­
ers. Rather, he is an impulsive hedonist who cannot tolerate frus­
tration, nor delay prospects for immediate pleasure. Although gener­
ally endowed with more than adequate intelligence, he seems to lack
the ability for insight. McCord and McCord have provided one of
the better descriptions of the prevailing clinical picture:

"His conduct often brings him into conflict with
society. The psychopath is driven by primitive desires
and an exaggerated craving for excitement. In his self-
centered search for pleasure, he ignores restrictions
of his culture. The psychopath is highly impulsive. He
is a man for whom the moment is a segment of time de­
tached from all others. His actions are unplanned and
guided by his whims. The psychopath is aggressive. He
has learned few socialized ways of coping with frustra­
tion. The psychopath feels little, if any, guilt. He
can commit the most appalling acts, yet view them with­
out remorse. The psychopath has a warped capacity for
love. His emotional relationships, when they exist, are
meager, fleeting, and designed to satisfy his own desi­
res. These last two traits, guiltlessness and loveless­
ness, conspicuously mark the psychopath as different
from other men."

Freud's writings probably provided the major impetus to shift
the emphasis from the theories of the 1800's, assuming inborn de­
fects, to the direction of this century, where most of the attention
has been paid to early environmental experiences as possible patho­
genic factors. As with alcoholism, unsatisfactory early parent-child

\[28\] McCord, William and McCord, Joan, Psychopathy and Delinquen­
relationships are presently held to be at the roots of antisocial behavior development. Greenacre stresses the role of the father as the most important factor, while Allen believes that ambivalent attitudes of the mother are responsible. Noyes, among others, views the sociopath as having failed to develop a superego, since he is incapable of feeling guilt: "The sociopath lacks a conscience due, possibly, to an emotional deprivation in childhood which made it impossible to identify himself with any parental figure." The importance of early relationships between parents and child is also generally accepted by learning theorists. Faulty learning can take place as the result of imitation and reinforcement in the same manner as more adequate behavior patterns are acquired. For example, cold or hostile parents may be viewed as models which the child imitates to guide his relations with others. Or, parental styles of meting out rewards and punishment may have shaped a pattern of superficial affability which hides a fundamentally devious and hostile attitude toward others. McCord and McCord also believe that imitation of a deviant parental model is influential in the development of criminal tendencies.


While early experiences in childhood continue to be thought of as the most important factors in the etiology of antisocial personalities, research into constitutional factors has not been completely discarded. Eysenck, for example, advances an interesting thesis that all psychopaths possess an inherited temperamental disposition to extroversion, which inclines them to learn sociopathic behaviors. Extroverts are believed to condition more slowly and therefore, in contrast to normals, acquire only minimally the values and inhibitions of their social group. Eysenck's learning theory is noteworthy because it takes into account both inborn and environmental factors.

Over the past decade, there has also been renewed interest in purely genetic causation with the discovery that a percentage of criminals, mental patients, retarded individuals and homosexuals seem to be victims of chromosomal deviation. In different groups of criminals studied, the proportion has fluctuated from 2 to 8.8 percent where males, and only males, were found to have an additional male chromosome. Labeled the Y gonosome, this factor makes for a chromosomal composition of XYY, rather than the normal XY pattern.

As was noted earlier, research interest in the individual who engages in both excessive drinking and antisocial behavior has been very low. This has been primarily due to the fact that criminal behavior in the alcoholic was, until recently, considered to be behav-

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ior symptomatic of the addiction. Many investigators have also been
guilty of extremely poor methodology. They have considered anyone to
be a criminal alcoholic who was arrested for any offense related to
drinking. This type of approach has contaminated many studies. It is
essential to discriminate between the criminal alcoholic who victim­
izes others through his activities, and between the public drunk or
the disorderly person who merely offends the prevailing mores of so­ciety. Too many have accepted alcoholism as a uniform behavior pat­
tern and have failed to differentiate alcoholics who just drink from
those who drink and also engage in criminal behavior. In the present
study, criminal offenders are defined as individuals who had been
convicted of offenses against the person or property of others. Crim­
inal alcoholic offenders similarly had been convicted of criminal
acts against others, but in addition had a history of excessive
drinking prior to the commission of the offense. Members of the non­criminal alcoholic group had never been convicted in a court of any
offense against others.

In an extensive social study of the population of Sing Sing
Prison, in the state of New York, Banay\textsuperscript{35} found that in 25 per cent
of all inmates alcohol was closely related to the commission of the
crime, or was directly responsible for it. Of the criminal alcohol­
ics, 56 per cent could be traced as having come from defective homes,
and an additional 6.5 per cent from marginal ones. Banay thought

\textsuperscript{35}Banay, Ralph S., "Alcoholism and Crime." Quarterly Journal of
Stud ies on Alcohol, II (March 1942), 686-716.
that the criminal alcoholic displayed a greater degree of psychopathology than the nonalcoholic criminal offender: "Poorly integrated personality, emotional instability, paranoid traits, conflicts with environment and frustration of multitudinous nature are the more common findings." These conclusions, however, were based on individual psychiatric interviews and not on objective measurements with psychological instruments.

Those who look upon alcoholism and criminal behavior as different expressions of the same sociopathic tendencies, often see the alcoholic as aiming primarily at self-destruction, while the criminal chooses as his goal the destruction of others or their property. By implication, the criminal alcoholic would combine both traits, and in a personality study should stand out as being a more pathological individual than either the noncriminal alcoholic or the nonalcoholic offender. McCord and McCord take this approach in comparing the criminal alcoholic to both noncriminal alcoholics and nonalcoholic criminals. The criminal alcoholic shares with the law-abiding alcoholic dependency conflicts, an absence of the emotional coldness found in the nonalcoholic criminal, an inadequate self-concept, and failure to imitate a deviant parental model. With the nonalcoholic criminal, he has in common heightened aggressiveness and an absence of middle class values. A complete comparison of these factors is summarized in Table 1.

36 McCord and McCord, Origins of Alcoholism, op. cit., p. 120.
37 loc. cit., p. 123.
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<th>Nonalcoholic Criminals</th>
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<th>Noncriminal Alcoholics</th>
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<tr>
<td>General Stress</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
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<tr>
<td>Dependency Conflict</td>
<td>Absent</td>
<td>Present</td>
<td>Present</td>
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<tr>
<td>Emotional Coldness</td>
<td>Present</td>
<td>Absent</td>
<td>Absent</td>
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<td>Inadequate Self-Concept</td>
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<td>Heightened Aggression</td>
<td>Present</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>Middle Class Values</td>
<td>Absent</td>
<td>Absent</td>
<td>Present</td>
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A notable exception to the prevailing theories on criminal alcoholics is provided by Cleckley. In contrast to most, he believes that the criminal alcoholic is a criminal first, and not primarily an alcoholic personality: "In some (psychopaths), alcoholism is a feature, though never, we maintain, a fundamentally causative one." He further does not accept antisocial behavior to be a mere character disorder, as reflected in the official nosology and accepted by many clinicians:

"The writer believes that in the extreme psychopath we are dealing with a personality whose disorder is so deep and so disabling that it often constitutes incompetency, and for practical purposes should be classed as psychosis...Unlike patients with other psychoses, these people do not show in verbal tests the traditional signs of major personality disorder... (But) in the more practical test of living they show less adequacy, less 'sanity', than many patients with schizophrenia."

This study was designed to compare a group of identified alcoholic felony offenders with groups of nonalcoholic felony offenders and noncriminal alcoholics. Prevailing theories about criminal alcoholics lead us to expect that the experimental group, as a whole, will show a greater degree of psychopathology than either the nonalcoholic criminal group, or the alcoholic group whose members did not have felony records. The psychological instrument of choice was the Minnesota Multiphasic Personality Inventory (MMPI), because it has been used more extensively than any other psychological instrument in research with alcoholics and criminals. In populations of

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prison inmates, the MMPI has produced quite stable test patterns with primary elevation of the Pd scale and secondary elevation of the Ma scale. This typical test pattern reflects closely the descriptions of the antisocial personality cited earlier (p. 12). The Pd scale indicates that he is incapable of deep emotional response and of profiting from experience, and that he tends to disregard social mores. Additionally, the Ma scale identifies him as an individual who is overactive in thought and deed, with a marked tendency to act out his impulsiveness.

MMPI research with alcoholics, on the other hand, has failed to produce a typical clinical profile. The Pd scale also appears to be uniformly high in alcoholic groups, but great differences are reported by various investigators as to the other MMPI scales which were found to be combined with Pd. Button administered the test to a group of patients who were under court commitment to a state mental institution with a diagnosis of "chronic alcoholism without psychosis". The results revealed the primary peak to be on the Pd scale, with the secondary peak on the D scale (see Appendix A). Button concluded from his findings that there may be two subgroups of alcoholics - "neurotic types" and "psychopathic types". The psychopathic alcoholic is considered to be defensive about his drinking and its


40Button, Alan D., "A Study of Alcoholics with the Minnesota Multiphasic Personality Inventory." Quarterly Journal of Studies on Alcohol, XVII (June 1956), 263-281.
resulting guilt and hostility reactions, while the neurotic alcoholic is more candid about these feelings and admits them ruefully to himself. Button observed little behavioral difference between these two subgroups but the writer wonders whether he did not actually work with a sample which included both criminal and noncriminal alcoholics. The same question may be raised with reference to the research by Brown, who administered the instrument to a group of state hospital patients, also having been diagnosed as "chronic alcoholics without psychosis". Of 67 profiles, independent raters judged 34 to be neurotic and 33 to be psychopathic. Brown then compared each subgroup to patients having been identified as either neurotics or psychopaths, but without histories of excessive drinking. She found that there was "greater similarity" between the alcoholic and nonalcoholic neurotics on the one hand, and also between alcoholic and nonalcoholic psychopaths on the other, while "striking differences were evident" when the alcoholic group was considered without differentiation as to the two subgroups.

Reimann compared a group of alcoholic prison inmates with a group of noncriminal alcoholic patients in a state hospital, by means of the MMPI. The latter group scored higher, at statistically significant levels, on the D, Hy, Pa, Pt and Sc scales than did the

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prison group. However, when institutional groups are used in research, the question arises to what extent lengthy periods of confinement, in an artificial and deprived environment, are reflected in the test results. Further, it is possible that those alcoholics, who must be confined to a mental care facility for long periods of time, are there because of more severe problems than just excessive drinking. They may not be typical at all of alcoholics who continue to function in the community. Differences may also occur if testing takes place at various points of the institutionalization. Reimann's prisoners were administered the MMPI during the first three weeks of their incarceration, while the patients were tested after varying periods of hospitalization.

Spiegel et al. also used the MMPI to study patients in a community-based alcoholism rehabilitation center. They found sociopathic tendencies (Pd) and depression (D) to be predominant (see Appendix A). In addition, their subjects generally scored midway between normal and psychiatric patient groups. Therefore, they considered alcoholics to be a "middle-pathology group".

This study attempts to measure how the criminal alcoholic may be similar to, or different from, the alcoholic who does not commit crimes, and also how he compares to the criminal who is not an alcoholic. According to McCord and McCord, the criminal alcoholic


44 op. cit.
should possess a combination of the pathological traits found in the nonalcoholic criminal and the noncriminal alcoholic. According to Cleckley, he should be little different from the nonalcoholic criminal. However, according to most traditional theorists, the criminal alcoholic would be expected to share all the personality traits of the noncriminal alcoholic, except for a greater tendency to direct his aggressive impulses toward others, rather than against himself.

The results of this research may have some significant implications. If differences among the three groups should become evident, then some statements may be made as to the etiology of both alcoholism and criminality. If the criminal alcoholic is found to have the same personality configuration as the noncriminal alcoholic, then some important legal questions are raised. The criminal justice system in the United States has never granted special consideration to the offender who has cited intoxication, or a history of excessive drinking, as his excuse for perpetrating a crime. However, in 1966, the U.S. Court of Appeals, Fourth Circuit, overturned a lower court conviction for public drunkenness, holding that it was unconstitutional to punish a person for acts he could not control. The impli-

45 op. cit.
46 Ansbacher, op. cit.
47 Menninger, op. cit.
48 White, op. cit.
49 Hutt, Peter B., "The Changing Legal Approach to Public Intoxication." Federal Probation, XXXI (September 1967), 42.
cations are clear. If the criminal alcoholic is primarily a victim of alcoholism, rather than a criminal, then the Court's reasoning would also apply to him, and society must find more effective means, other than indiscriminate incarceration, to deal with his behavior. If no significant differences can be found between the three groups, then we must agree with those who hold that alcoholism and criminality might emanate from the same basic sociopathic disorder.

It is the hypothesis of this paper that the criminal alcoholic group will combine the personality characteristics, as measured by the MMPI, of both the nonalcoholic criminal group and the noncriminal alcoholics. As was pointed out, testing of criminal populations has produced profiles which generally were elevated on Scales Pd and Ma. Testing of alcoholic populations has not yielded a profile pattern which can be considered typical of the alcohol addict, but most researchers agree that Scales D and Pd are almost always higher than in normal groups. In addition, differences have been detected on other scales, but not with the same degree of consistency as on the two scales mentioned. Therefore, it is expected that the criminal alcoholic group will share with the noncriminal alcoholic group an elevated Scale D, and with the nonalcoholic criminal group an elevated Ma scale. Scale Pd is expected to be above the norm for all three groups, but with the alcoholic criminal group showing a significantly greater elevation than either of the other two groups.

For a summary of mean T-scores, reported by selected MMPI researchers for various alcoholic and criminal populations, the reader is referred to Appendix A.
METHOD

The Sample

Members of Groups I and II, the nonalcoholic and alcoholic criminals, respectively, were drawn at random from all caseloads of both the State Parole Office, Lansing, Michigan, and the Probation Office of the District Court, Lansing, Michigan. In order to control for cultural factors, where possible, only Caucasian males were included in the sample. By using criminal offenders not confined to penal institutions at the time of testing, but rather functioning in the community, it was hoped that any effects of imprisonment on test results could be eliminated. From the beginning of the project, an extensive social history on each possible participant was available through the agencies from where Groups I and II were drawn. Therefore, it was not difficult to determine immediately which individual had a history of excessive alcohol use, and who did not, and to classify him correctly into either Group I or II. Criminal alcoholics (Group II) were offenders who were either under the influence of alcohol when they committed a crime, or who had established a pattern of such consistently excessive drinking, prior to the crime, that it was considered to be a problem of major proportion by family members, or by law enforcement and court officials. Each member of the two criminal groups had incurred at least one felony conviction in a criminal court of the State of Michigan. Participation in the project by the parolees and probationers was, of course, voluntary.
In order to obtain 30 valid profiles for each of the two criminal groups, it was necessary to ask a total of 76 individuals to volunteer for this project. Nine individuals refused and seven profiles were eliminated during the testing process because they were considered to be invalid. Lack of validity was due to various factors, such as carelessness on the part of the individual or inability to comprehend the test items (Validity Scale F), an abnormal amount of psychological defensiveness (Validity Scale K), or the subject attempted to place himself into an unduly favorable light on the test (Validity Scale L).

The members of Group III, the noncriminal alcoholics, were also drawn randomly, over a period of four months, from in-patients of the Alcoholism Ward of Sparrow Hospital, Lansing, Michigan. This facility is primarily an alcoholic detoxification center, where the maximum length of hospitalization is limited to ten days. A program of group therapy is offered, to help the alcoholic patient gain a measure of insight into his problems, but no treatment of more serious mental disorders is attempted. Thus, it is unlikely that this population is comparable to one of alcoholic patients who had to be committed to state mental institutions. Rather, these general hospital patients are considered to be characteristic of alcoholics who manage to function in the community despite their addiction. Patients at Sparrow Hospital are either self-referred, or are encouraged by family members, ministers, physicians or employers to seek this type of help. At the time of admission, a complete social history is compiled by a member of the hospital staff, based in part on
information provided by the patient himself, by his family, and by other community sources, if necessary. Therefore, it was possible to exclude from this part of the sample any individual who had incurred a felony conviction prior to his hospitalization. Testing was carried out only on the eighth, ninth or tenth day of treatment, in order to prevent early alcohol withdrawal symptoms from affecting the patients' test responses.

To obtain 30 valid profiles for the noncriminal alcoholic group, it was necessary to approach a total of 41 patients. Thirty-six patients volunteered their participation, of whom six had to be eliminated from the sample during the testing phase, due to invalidity.

After final sampling had been completed, the ages and educational grade achievement levels of all three groups were compared by means of the analysis of variance. Tables 2 and 3 contain the results of this post-analysis of differences in ages and educational levels, respectively. The F-scores reveal that the differences between the three groups were not statistically significant, and therefore the total sample is considered to be homogeneous with respect to age and education. The three groups are thus comparable for the purposes of this project. The educational achievement levels are in agreement with known national statistics about criminal offenders. Eighty-two per cent of all public offenders have three years or less of high school education.\(^{50}\)

\(^{50}\) Wolfson, Charles, Private Communication. University of Michigan, Ann Arbor, October 1970.
TABLE 2

COMPARISON OF AGE DIFFERENCES BETWEEN THE NONALCOHOLIC CRIMINAL GROUP, THE CRIMINAL ALCOHOLIC GROUP AND THE NONCRIMINAL ALCOHOLIC GROUP

<table>
<thead>
<tr>
<th>Age</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nonalcoholic</td>
<td>Criminal</td>
<td>Noncriminal</td>
<td></td>
</tr>
<tr>
<td>Ranges:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 years,</td>
<td>21 years,</td>
<td>22 years,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 months</td>
<td>8 months</td>
<td>6 months</td>
<td></td>
<td>2.04</td>
</tr>
<tr>
<td>48 years,</td>
<td>57 years,</td>
<td>59 years,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 months</td>
<td>8 months</td>
<td>6 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Means:</td>
<td>31 years,</td>
<td>33 years,</td>
<td>35 years,</td>
<td></td>
</tr>
<tr>
<td>4 months</td>
<td>8 months</td>
<td>7 months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

degrees of freedom = 2 and 89

TABLE 3

COMPARISON OF DIFFERENCES IN EDUCATIONAL GRADE ACHIEVEMENTS BETWEEN THE NONALCOHOLIC CRIMINAL GROUP, THE CRIMINAL ALCOHOLIC GROUP AND THE NONCRIMINAL ALCOHOLIC GROUP

<table>
<thead>
<tr>
<th>Education</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nonalcoholic</td>
<td>Criminal</td>
<td>Noncriminal</td>
<td></td>
</tr>
<tr>
<td>Ranges:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 to 16 years</td>
<td>6 to 15 years</td>
<td>8 to 16 years</td>
<td>1.88</td>
<td></td>
</tr>
<tr>
<td>Means:</td>
<td>10.4 years</td>
<td>10.8 years</td>
<td>11.4 years</td>
<td></td>
</tr>
</tbody>
</table>

degrees of freedom = 2 and 89
Testing Procedures

The booklet form of the MMPI was administered individually to each participant at his convenience. The instructions for test administration by Hathaway and McKinley\(^{51}\) were observed. In addition, each subject was individually assured that his test results would be used for research purposes only, and that they would not be made available to probation and parole officers, or to the staff of the Sparrow Hospital Alcoholism Unit.

Statistical Analysis

The results obtained for each of the three validity scales and the ten clinical scales were compared by means of the analysis of variance. Where the resulting $F$-score indicated that a statistically significant difference existed between the three groups on a particular scale, Scheffe's\(^{52}\) method of post-hoc comparison was carried out. This procedure allows the experimenter to determine whether the difference exists between all three groups, or only between two particular groups, or between combinations within the groups. Scheffe's method yields an $F$-Prime score ($F'$), as shown in Table 5.

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RESULTS

The mean T-scores for each MMPI scale and the F-scores, as obtained with the analysis of variance, are presented in Table 4.

As can be seen from Table 4, statistically significant differences between the three groups exist on validity scales F and K, and on clinical scales Hs, D, Pa, Pt and Sc. Therefore, Scheffe's post-test was applied to those seven scales, and the results of this procedure are contained in Table 5.
TABLE 4

MEAN T-SCORES FOR EACH MMPI SCALE AND COMPARISON OF THE NONALCOHOLIC CRIMINAL GROUP, THE CRIMINAL ALCOHOLIC GROUP AND THE NONCRIMINAL ALCOHOLIC GROUP

<table>
<thead>
<tr>
<th>Scales</th>
<th>Group I Nonalcoholic Criminals</th>
<th>Group II Criminal Alcoholics</th>
<th>Group III Noncriminal Alcoholics</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>53.0</td>
<td>51.5</td>
<td>48.4</td>
<td>2.80</td>
</tr>
<tr>
<td>F</td>
<td>56.9</td>
<td>58.2</td>
<td>64.6</td>
<td>7.41***</td>
</tr>
<tr>
<td>K</td>
<td>56.4</td>
<td>55.8</td>
<td>49.2</td>
<td>3.58*</td>
</tr>
<tr>
<td>Hs</td>
<td>51.7</td>
<td>54.6</td>
<td>58.4</td>
<td>3.76*</td>
</tr>
<tr>
<td>D</td>
<td>56.2</td>
<td>57.6</td>
<td>66.4</td>
<td>6.02***</td>
</tr>
<tr>
<td>Hy</td>
<td>56.8</td>
<td>57.0</td>
<td>62.2</td>
<td>2.54</td>
</tr>
<tr>
<td>Pd</td>
<td>68.4</td>
<td>69.8</td>
<td>70.2</td>
<td>2.77</td>
</tr>
<tr>
<td>Mf</td>
<td>58.8</td>
<td>56.6</td>
<td>58.8</td>
<td>0.60</td>
</tr>
<tr>
<td>Pa</td>
<td>56.6</td>
<td>56.3</td>
<td>65.0</td>
<td>8.10***</td>
</tr>
<tr>
<td>Pt</td>
<td>54.8</td>
<td>54.5</td>
<td>66.3</td>
<td>10.57***</td>
</tr>
<tr>
<td>Sc</td>
<td>52.8</td>
<td>55.8</td>
<td>67.2</td>
<td>15.13***</td>
</tr>
<tr>
<td>Ma</td>
<td>58.6</td>
<td>58.8</td>
<td>64.6</td>
<td>2.88</td>
</tr>
<tr>
<td>Si</td>
<td>49.8</td>
<td>51.0</td>
<td>54.0</td>
<td>1.64</td>
</tr>
</tbody>
</table>

degrees of freedom = 2 and 89

***Significant at the .01 level
* Significant at the .05 level
TABLE 5

RESULTS OF SCHEFFE’S POST-HOC COMPARISONS OF MMPI SCALES WITH STATISTICALLY SIGNIFICANT DIFFERENCES

<table>
<thead>
<tr>
<th>Groups Compared</th>
<th>F'-Scores for Scale F</th>
<th>F'-Scores for Scale K</th>
<th>F'-Scores for Scale Hs</th>
<th>F'-Scores for Scale D</th>
<th>F'-Scores for Scale Pa</th>
<th>F'-Scores for Scale Pt</th>
<th>F'-Scores for Scale Sc</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 versus 2</td>
<td>0.26</td>
<td>0.05</td>
<td>0.33</td>
<td>0.25</td>
<td>0.02</td>
<td>0.01</td>
<td>0.46</td>
</tr>
<tr>
<td>1 versus 3</td>
<td>12.86***</td>
<td>5.88</td>
<td>7.50*</td>
<td>10.59***</td>
<td>11.75***</td>
<td>15.34***</td>
<td>17.60***</td>
</tr>
<tr>
<td>2 versus 3</td>
<td>9.29**</td>
<td>4.84</td>
<td>4.67</td>
<td>7.61*</td>
<td>12.59***</td>
<td>16.29***</td>
<td>12.38***</td>
</tr>
<tr>
<td>1 versus 2 and 3</td>
<td>5.53</td>
<td>2.34</td>
<td>3.67</td>
<td>4.68</td>
<td>4.59</td>
<td>4.83</td>
<td>7.91*</td>
</tr>
<tr>
<td>1 and 2 versus 3</td>
<td>13.04***</td>
<td>7.13*</td>
<td>8.00**</td>
<td>11.70***</td>
<td>16.22***</td>
<td>21.10***</td>
<td>19.42***</td>
</tr>
<tr>
<td>1 and 3 versus 2</td>
<td>2.14</td>
<td>1.30</td>
<td>1.00</td>
<td>1.72</td>
<td>4.49</td>
<td>5.74</td>
<td>2.77</td>
</tr>
</tbody>
</table>

degrees of freedom = 2 and 87

*** Significant at the .01 level
**  Significant at the .025 level
*   Significant at the .05 level
DISCUSSION

No significant differences are evident from Table 5 when the two criminal groups are compared (Group 1 versus 2). They appear to be very homogeneous groups. On the other hand, considerable differences are apparent on five scales when the two alcoholic groups are compared (Group 2 versus 3). Thus, criminal alcoholics differ hardly at all from nonalcoholic criminals but significantly from noncriminal alcoholics. This trend is confirmed by comparing the two criminal groups with the noncriminal alcoholic group (Groups 1 and 2 versus 3), where all seven scales show significant differences. An inspection of Table 4 further shows that the MMPI scores of the noncriminal alcoholic group are always in the direction of greater psychopathology. Comparing the nonalcoholic criminal group with the two alcoholic groups (Table 5, Group 1 versus 2 and 3), only the Sc scale is found to differ significantly, with psychopathology in the direction of the two alcoholic groups. Finally, when the criminal alcoholic group is compared to a combination of the nonalcoholic criminal group and the noncriminal alcoholic group (Groups 1 and 3 versus 2), no important differences are evident. Thus, the criminal alcoholic cannot be identified as a person who possesses the traits of both the criminal and the alcoholic, and the major hypothesis must be rejected. Rather, according to the MMPI, the criminal alcoholic is primarily a criminal who also uses alcohol, and not primarily an alcoholic who commits crimes because of his addiction.

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Results of the present research seem to confirm Cleckley's\textsuperscript{53} observation that alcoholism in antisocial personalities is a secondary feature, and not a causative factor. There is also agreement in several respects with Reimann's\textsuperscript{54} findings, who observed significant differences between imprisoned criminal alcoholics and noncriminal alcoholics in state hospitals (see Appendix A). However, his hospital group showed significance on the Hy scale and not on the Hs scale. This may indicate that these individuals tend to react hysterically under stress, which in turn may lead to commitment. The general hospital group of noncriminal alcoholics, on the other hand, displayed a greater tendency to use hypochondriacal mechanisms, when compared to the two criminal groups. They may have less need to use the repression mechanisms of hysteria because hypochondriacal symptoms may provide the same secondary gains from relatives and friends, as conversion symptoms do from hospital personnel, but still permit excessive drinking behavior without the attendant guilt feelings the hysteric must deal with.

A number of workers, using alcoholic and criminal populations in their MMPI research, have reported mean T-scores on individual scales for these groups. Their results have been summarized in Appendix A. The discussion of the individual MMPI scales, which follows, may become more valuable to the interested reader by referring to the data reported in Appendix A.

\textsuperscript{53}\textsuperscript{op. cit.}
\textsuperscript{54}\textsuperscript{op. cit., p. 10.}
Comparing the three groups, no significant differences are noted on the L scale (Table 4). There was no pronounced effort by the groups, as a whole, to place themselves into an unduly favorable light. On the F validity scale, however, the noncriminal alcoholics scored significantly higher than did the two criminal groups, while no great differences were evident between the latter two groups. The F scale consists of items which measure primarily an individual's ability to perceive his environment realistically and accurately. If this ability is impaired, as indicated by a high F score, then the validity of the clinical scales cannot be accepted without reservations. For this reason, and also because this scale shares many items with the Pt and Sc scales, many clinicians consider the F scale to be a good gauge of psychopathology. Thus, we find more reality distortion in the noncriminal alcoholic group than in either of the two criminal groups.

The third validity scale, K, assesses test-taking attitudes, and a T-score in excess of 70 identifies the individual who is too reluctant and/or too defensive to reveal much personal information about himself on the test. The K scale is also considered to be an indicator of ego strength, and low K-scores are frequently encountered in persons with psychological problems. Many psychotherapists expect the K-score to rise after therapy, as evidence that the psychological defense system has been strengthened. In the present research, we find that the K-scores are significantly lower for Group 3 than for the other two groups combined (Table 5, Groups 1 and 2 versus 3). Noncriminal alcoholics seem to have fewer satisfactory
defense mechanisms available than criminals, whether alcoholic or nonalcoholic. They appear to be more willing to share their feelings and problems with others.

Of the ten clinical MMPI scales, five were found to discriminate significantly between the three groups. After the post-hoc comparisons, these differences were identified between the two criminal groups on one hand, and the noncriminal alcoholic on the other (Table 5, Groups 1 and 2 versus 3). Degree of psychopathology was always greater in the noncriminal alcoholic group (Table 4). Only the Sc scale differentiated on a statistically significant level (.025) between the nonalcoholic criminal group and the two alcoholic groups combined (Table 5, Group 1 versus 2 and 3).

The Hs scale reveals the noncriminal alcoholic as a person who is more prone to use vague somatic complaints, for which there is no definite physiological evidence, and as having undue concern over his health in general. He often rationalizes his drinking behavior as being functional in "calming his nerves", or in "settling his stomach". The criminal alcoholic evidently does not share the tendency to deal with anxiety in this manner.

The D scale is described in the literature as a symptomatic or "mood" scale, and not as a diagnostic scale. Button and Reimann, in their studies of alcoholics in state hospitals, identi-

55 Dahlstrom and Welsh, op. cit., p. 57.
56 op. cit., p. 266.
57 op. cit., p. 6.
fied this scale as being the second highest, after Pd, in their respective groups. In the present study, the mean T-score for D in Group 3 was exceeded by both Pd and Sc. As in Reimann's design, non-criminal alcoholics scored significantly higher than did the criminal subjects, indicating that they seem to be very aware of their subjective feelings of poor morale, helplessness and uselessness. One can only speculate as to the meaning of the higher Sc scores in the general hospital group. It is possible that state hospital patients have less need for schizoid coping mechanisms than do alcoholics in the community, because of reduced environmental stimulation.

The Pd scale produced the highest mean T-scores of any for all three groups. This is in agreement with practically all MMPI research conducted on criminal and alcoholic groups (see Appendix A). The Pd scale is generally considered to be extremely stable and sensitive to antisocial tendencies in individuals. In the criminal alcoholic group, the obtained mean test profile closely resembles the patterns usually obtained with criminal groups, where the primary peak on Pd is closely associated with a secondary peak on Ma. A slight exception is noted in the nonalcoholic criminal group, where the mean T-score of 58.6 for Ma is just exceeded by a mean T-score of 58.8 for Scale Mf.

In view of these findings, it is not surprising that many have considered both criminality and alcoholism to be psychopathic disor-

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58 Dahlstrom and Welsh, op. cit., p. 192.
ders. Similarly, it can be seen why criminal alcoholics have been perceived primarily as alcoholics who perpetrated crimes because their inhibitions were lowered through the effects of the alcohol. Only Cleckley's contention, that criminal alcoholics are primarily criminals with secondary alcohol addiction, was confirmed by the present design.

The Freudian concept, that the alcoholic is an individual who is suppressing homosexual drives, found little support from the results obtained on the Mf scale. No significant differences were found between the three groups. However, all three mean T-scores were elevated above the norm, in the direction of feminine characteristics. This could be an indication that people with criminal and/or alcoholic tendencies may well have failed to achieve satisfactory identification with an adequate male model.

The following four scales, Fa, Pt, Sc and Ma, are referred to in the MMPI literature as the psychotic tetrad. All were found to be highest in the noncriminal alcoholics, nearly two standard deviations above the norm. This evidence gives strong support to the thesis by Hoff, that the alcoholic relies on a psychopharmacological

59 Blane, op. cit.
60 op. cit.
61 Fenichel citing Abraham, op. cit.
63 Dahlstrom and Welsh, op. cit., pp. 96, 99.
64 National Institute of Mental Health citing Hoff, op. cit.
substance in an attempt to keep his life from disintegrating. However, it does not hold true for the criminal alcoholics, except for an elevation on the Sc scale. On the Pa, Pt and Sc scales, the non-criminal alcoholics displayed significantly higher mean T-scores, at the .01 level, than did the two criminal groups. The Ma scale was considerably elevated for all three groups, with no significant differences between them.

The mean T-score of 65.0 on the Pa scale for the noncriminal alcoholic group, identifying these individuals as having paranoid traits, was unexpected. It cannot be denied that many alcoholics may be suspicious, oversensitive, and may harbor feelings of persecution, but the high Pa-score is hard to reconcile with the low K-score obtained from the same group. Paranoids generally are not very willing to share their feelings and problems with others, and it has been the writer's experience that these individuals, as a rule, score quite high on Scale K. However, Pa is often criticized by many clinicians as being unable to detect most paranoids, and consequently is considered to be a poor scale. Therefore, the high mean score may be more of an indication that the alcoholic feels threatened by his general environment, as already noted on Scale F. The criminal subjects do not seem to share this characteristic of the noncriminal alcoholics.

The Pt scale of the MMPI was originally designed to assess the degree of psychasthenia, or the obsessive-compulsive syndrome. Test items deal with compulsive behavioral rituals, obsessive ruminations, some forms of abnormal fears, worrying, difficulties in concentrat-
ing, guilt feelings, and excessive vacillation in making decisions. It is primarily a scale of more severe neurotic symptoms. As the results show, the noncriminal alcoholics scored significantly higher, at the .01 level, than did the two criminal groups. This finding strongly supports the observations of many others, especially the psychoanalytically and psychiatrically oriented ones. They have described alcoholics as having high levels of anxiety, little self-confidence but unrealistically high moral and intellectual standards, undue sensitivity, moodiness and immobilization. Criminal alcoholics suffer no more from such symptoms than do nonalcoholic criminals.

The observed compulsive features in the noncriminal alcoholics may well become an asset when these individuals join alcoholism treatment groups, such as Alcoholics Anonymous. These groups place heavy emphasis on high personal standards, religious commitments, tight emotional controls through group support and criticism, and lessening of anxiety through shared experiences. The obsessive-compulsive personality could be expected to find strong reliance on an established and security-providing system to be a highly rewarding experience.

The results from the Sc scale also reveal that noncriminal alcoholics score significantly higher, at the .01 level, than do either alcoholic or nonalcoholic criminals. However, when the two alcoholic groups are combined and then compared to the nonalcoholic criminal group, a statistically significant difference, at the .025

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65 For example, Zwerling and Rosenbaum, op. cit.
level, is also found (Table 5, Group 1 versus 2 and 3). This is probably due to the extreme elevation of Group 3 over both Groups 1 and 2, and the smaller elevation of Group 2 over Group 1. When the three groups are compared individually, no significant difference can be detected between the two criminal groups, while significance is obtained between the nonalcoholic criminal and the noncriminal alcoholic groups, and also between the two alcoholic groups.

According to the Sc scale, the noncriminal alcoholics are again shown to be a more pathological group than the criminals. They appear to be given to bizarre and unusual thoughts or behavior, cold and constrained in their social relationships, and in more severe cases may be disoriented, delusional or hallucinating. It can be seen why an alcoholic with these symptoms would be considered to be drinking in order to keep his life from disintegrating, and also why he would be more prone to attempt suicide when under the influence of alcohol. He could also be expected to have poor impulse control, to drink in solitude rather than in a group, and to make a marginal adjustment even if he managed to remain sober for an extended period of time.

The Ma scale was found to be elevated for all three groups, with no significant differences between them, but again highest for the noncriminal alcoholic group. This finding was unexpected for the noncriminal group, because Ma peaks are commonly associated with Pd.

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66 National Institute of Mental Health citing Hoff, op. cit.
67 Robins et al., op. cit., p. 890.
peaks in criminal populations. The elevated Ma is usually indicative of facilitating the expression of antisocial impulses, because the hypomanic individual is characterized by overactivity, emotional excitement and flight of ideas. High Ma, in combination with high Sc, was found to be restricted to psychiatric populations, and was considered to represent a more malignant hypomanic picture than the Ma-Pd combination. The hyperactivity may not necessarily find expression against other people, as would be the case with criminally inclined individuals, but may rather be an attempt by this particular group to cope with the anxieties generated by the depersonalizing feelings of the schizoid tendencies. The mean Ma-scores obtained in this study are within comparable range of others (see Appendix A).

The last clinical scale, Si, was expected to show a significant difference between the nonalcoholic criminal and the noncriminal alcoholic groups. Alcoholics are frequently described as being withdrawn, socially alienated, introverted when sober, and distrustful of their environment. No evidence for such claims was found through this scale, although the Sc-scores would support such descriptions. All three groups had mean Si-scores well within one standard deviation of the norm, and no significant differences were found between them. Rather than being introverted, the noncriminal alcoholic probably fails to interact with his social environment because he is too preoccupied, trying to cope with his numerous anxieties. Considering his elevated scales - Hs, D, Pa, Pt and Sc - it is conceivable that

68 Dahlstrom and Welsh, op. cit., p. 208.
he can deal with his feelings much better if he limits the extent of his interaction with others. This may also explain why the noncriminal alcoholic generally remains free of criminal activity, although he shares with the criminal groups abnormal Pd and Ma-scores. His high anxiety level, as reflected in the other elevated scales, could provide an effective deterrent against antisocial behavior. To be truly introverted, on the other hand, may imply that the individual feels self-sufficient to the extent that he needs few reinforcements from his environment. The criminal also has no great need to be extroverted because he has made few emotional investments in others. For him, the environment is something to be exploited, but it holds few other rewards.

Although the design of this study was different, the results confirm the findings of Brown and Button, who observed that their samples of alcoholics were comprised of two major subgroups, psychopathic and neurotic individuals. The criminal alcoholics of this study were identified as being primarily psychopathic individuals, and as being little different from those criminal subjects not manifesting addiction to alcohol. The noncriminal alcoholics, however, present a personality picture more severe than the neurotic, as the mean T-scores of the neurotic triad (Scales Hs, D, and Hy) are exceeded by the mean T-scores of the psychotic tetrad. Their personality configuration, as measured by the MMPI, approaches more

69 op. cit.
70 op. cit., pp. 270-271.
closely what Spiegel et al. have called a "middle pathology group".

There has been some discussion in the literature that psychological instruments, including the MMPI, do not actually measure personality components in alcoholics, but rather personality reactions to the addiction itself. Sutherland et al. state that "alcoholism is not determined by generic personality traits or related to them in any specific manner". Similarly, Wexberg claims that there is no alcoholic personality prior to the alcoholism. Syme also questions the capacity of the MMPI to measure more persistent personality traits, as it is primarily a test of conscious self-perception: "Non-projective techniques...are 'situationally determined' and merely reflect the personality of the alcoholic as it was manifested at the time of the study."

Based on the results of this study, the writer strongly agrees that alcoholism is not predetermined by any one particular personality structure. However, there is no evidence which allows one to conclude that MMPI scores are influenced by the alcoholic state. There were some profiles in all three groups which were free of any

71 op. cit., p. 371.


psychopathological characteristics and which had to be judged as normal. Thus, it cannot be claimed, without further evidence, that addiction to alcohol affects MMPI scores. In addition, the literature is silent as to any findings that ex-alcoholics, who succeed in abstaining from excessive drinking for extended periods of time, undergo significant personality changes. The writer's work with members of Alcoholics Anonymous also indicates that their MMPI scores are little different from the pathological profiles generally encountered in research groups of active alcoholics. Finally, McCord and McCord have demonstrated that individuals, who were characterized by psychological problems during their childhood and adolescence, are more prone to become addicts than those who had a more normal early environment.

The question, then, remains why individuals of varying psychological characteristics, ranging from normal to psychotic, become alcoholics, while others with the same predispositions never become addicted. Certain features among the MMPI test results stand out. Alcoholics, regardless of whether or not they also manifest criminal behavior, obtained higher than normal scores on the psychopathic deviance and hypomanic scales, as did the nonalcoholic criminals. The noncriminal alcoholics, in addition, scored high on the neurotic and psychotic scales. It is possible that the neurotic and psychotic anxieties function as effective controls for the psychopathic impulses or, as some have suggested, that the noncriminal alcoholics

have directed these impulses against themselves, rather than against others. If this is correct, then important clues about the etiology of alcoholism and criminal behavior may be found in psychoanalytic theory.

Hypochondriasis, depression, hysteria, paranoia, the obsessive-compulsive personality, schizoid trends and manic tendencies are all generally assumed to have their origin in the first two stages of psychosexual development. Thus, the majority of noncriminal alcoholics would have undergone psychologically traumatic experiences during the oral and anal phases, and would then have arrived at the edipal phase with strong fixations to the two previous stages. With this existing handicap, the young child would be poorly prepared to cope with the demands of the sexual identification phase, and as a result would resolve his conflicts in this stage in an unsatisfactory manner. The male criminal individual, on the other hand, would have arrived at the edipal phase without a significant degree of fixation at the oral or anal phases, but then would have failed to resolve the edipal conflict by not identifying with an adequate male model. Therefore, the psychopath is said to have failed in developing a superego. The noncriminal alcoholic is also unsuccessful in this phase, but this is due to the fact that his coping mechanisms were impaired during the previous stages.

The psychoanalytic formulation is strongly supported by the results obtained by McCord and McCord. They found that alcoholics dis-
played strong dependency conflicts. In adulthood, they were leaning on others and were helpless to deal with their anxieties, except through neurotic and psychotic symptoms. Criminals were seen as having identified either inadequately with a male model, or as having patterned themselves after a deviant father figure. McCord and McCord also saw alcoholism as a middle class phenomenon while criminality was more closely correlated with a lower class background.

This is not unexpected and can also be reconciled with a psychoanalytic frame of reference. Middle class mothers traditionally handle their infants with more anxiety and ambivalence, and therefore may be more apt to create dependency conflicts. Lower class mothers, on the other hand, are known to be more protective and secure in the handling of their children, and thus are probably more successful in shielding them from early traumatic experiences. However, lower class children are also more likely to have socially deviant or inadequate father figures, or to have no paternal models at all because of separation, divorce or illegitimacy. Thus, there is often reduced opportunity to identify satisfactorily for the lower class child during the edipal phase, while the middle class child may fail to do so because of his experiences in the oral and anal stages.

While psychoanalytic theory provides considerable support for the psychopathological origins of both alcoholism and criminal be-

78 *loc. cit.*, pp. 113-114.
79 *loc. cit.*, pp. 40, 119-120.
havior, it leaves several important questions unanswered. For exam-
ple, the test results showed that the criminal alcoholic did not
combine the character traits of the nonalcoholic criminal and the
noncriminal alcoholic. However, test profiles with similar degrees
of pathology, as were found in the noncriminal alcoholic group, are
also frequently encountered in psychiatric, nonalcoholic populations
and in individuals who are compulsive eaters, smokers or drug ad-
dicts. Test profiles, which are similar to the two criminal groups,
are also not uncommon to successful businessmen, especially salesmen,
who express their sociopathic impulses by manipulating others for
personal gain in a socially acceptable manner. The writer accepts
that psychodynamic causation is important in predisposing a person
to alcoholism and criminality, but how the actual behavior pattern
comes to develop can most satisfactorily be explained through learn-
ing theory.

Dollard and Miller 80 have provided what appears to be a satis-
factory theoretical model of learned behavior. Their system, unlike
many others, does not discard psychoanalytic theory, but rather ex-
pands upon the observations of Freud and his followers by taking in-
to account a more advanced state of knowledge regarding human behav-
ior. Alcohol is a substance which can be readily associated with its
psychological effects. It is rapidly absorbed into the bloodstream
and is extremely effective in quickly reducing anxiety. Therefore,

80 Urban, Hugh B. and Ford, Donald H., "The Learning Theory Psy-
chotherapy of Dollard and Miller." In Systems of Psychotherapy. New

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all of the basic assumptions of reinforcement theory are met. An association between stimulus and response is learned because the behavior is rewarded. If an individual, whose adjustment to his environment is accompanied by a high degree of anxiety, has the opportunity to drink an alcoholic beverage, and if he experiences symptomatic relief as a result of it, he may have laid the basis for addiction at that point. If it can be assumed that the individual, who has experienced trauma in childhood, will also be more likely to suffer from high anxiety, then it can further be expected that he will find the drinking experience to be more rewarding than the person who feels less anxiety. If reinforcement has occurred, because anxiety was reduced, the individual will repeat the behavior again and again, until the rewards of intoxication have become generalized to practically all life situations. He will be unable to face the simplest demands of his environment without alcohol.

To be sure, excessive drinking also produces negative reinforcements, such as disapproval from family members, social ostracism, loss of job, and probably economic hardship, thus creating an approach-avoidance conflict. In most normal subjects, the avoidance gradient would be strong enough to prevent addiction. In anxiety-prone persons, however, the approach gradient to alcoholic beverages can be assumed to be strongest, because of their powerful psychological effects. In addition, the approach-avoidance conflict produces

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more anxiety which further strengthens the approach gradient. Within this frame of reference, addiction to alcohol can be viewed as the result of accidental learning, much like superstition. It is most likely to occur in individuals who are highly anxious, but can also happen in normal subjects who are rewarded when they drink at a time of extreme anxiety. They are equally capable of generalizing the effects of the drinking experience to other problems in their daily lives. Such an interpretation is in agreement with the fact that most alcohol addiction can be traced to adolescence and early adulthood, which traditionally are years of great anxiety in Western culture.

With respect to the development of criminal behavior, an identical analysis can be applied. If an adolescent, with strong psychopathic tendencies, engages in antisocial behavior for the first time, and as a result of strong parental supervision or police intervention is caught and punished, he will have established a strong avoidance gradient because of the negative reinforcement. In future situations, he very likely will control the unrewarded behavior and instead may express his psychopathic impulses in a socially acceptable fashion. He may become the office politician, the fast-talking and overly sincere salesman, or the sexually promiscuous romantic adventurer. However, it is more likely that early antisocial behavior will not be detected and negatively reinforced, and that strong approach gradients toward criminal behavior will be established. Even occasional arrest and imprisonment in the future will have little deterrent effect, because these intermittent negative reinforce-
ments are no longer sufficient to strengthen the avoidance gradient. In fact, there is some question whether involvement with law enforcement agencies does not actually represent a form of positive reinforcement for many, because of the status it may confer on the individual among his peers.

The behavior dynamics of the criminal alcoholic appear to be more complex. It is possible that the approach gradient toward criminal behavior is of equal magnitude as the avoidance gradient against it, because he has experienced positive reinforcements to the same extent as negative reinforcements. As a result, the criminal alcoholic may have learned to use alcohol to alleviate the anxieties which keep him from committing an offense in a state of sobriety. On the other hand, it is also possible that alcoholism in the sociopath may be due to cultural factors. As previously noted, he is more likely to have been raised in a lower class socio-economic environment, and to have achieved inadequate masculine identification. Therefore, his criminal behavior and alcoholism may both be attempts to project a male image. If he cannot find satisfactory outlets for his masculine strivings in a socially acceptable setting, he may try to meet these needs through a deviant peer group, where drinking is often encouraged, or even required. Strayer found considerable differences between black and white alcoholics which reflected the cultural factors commonly found in Negro families.

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Alcoholism and criminal behavior must be viewed as extremely complex phenomena, both in terms of etiology and treatment. In most cases, their origins can be traced to pathological childhood experiences, but they may also be determined by cultural and historical factors in the society. It is significant that the United States leads in per capita alcoholism and crime rates among the western nations. In any social system, where high values are placed on competition, individual self-reliance and masculinity, and where the social institutions - church, employment, education, the judicial system - are highly formalized, it is not unexpected to find high levels of anxiety. This concept is adequately supported by cross-cultural studies on alcoholism. Further, such a structured society cannot be responsive to the individual needs of many. Therefore, it is largely unsuccessful in promoting loyalty to the group among those who have found their interaction with the group to be unrewarding. Such individuals may then come to perceive their social environment as something to be attacked, rather than to be supported.

Although the results of this study were derived from three small groups (N=30), there may be some implications apparent regarding the handling of alcoholic offenders by the criminal justice system. If the results are confirmed by cross-validation on a larger sample, there appears to be little reason to treat the alcoholic offender.

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83 Bales, op. cit., pp. 480-499.
criminal differently than the nonalcoholic offender. Both are basically sociopathically oriented, except that the former uses alcohol in addition to his primary character disorder. The contentions of many, who claim that the criminal alcoholic commits offenses as a result of his drinking, were not confirmed by the findings. Therefore, there seems to be no justification for the courts to extend to the alcoholic offender any special consideration because of his addiction. Recommendations may also be made to the counselors, psychologists, chaplains and psychiatrists who are engaged in the treatment of alcoholic inmates in penal institutions. Their efforts to treat the symptom of alcoholism have been largely futile, since the drinking is not responsible for the behavior which caused the incarceration. These correctional therapists would probably be more successful in achieving their objectives if they focused their attention on the treatment of the primary disorder, the psychopathic personality pattern.

However, it is the noncriminal alcoholic who seems to have the greatest need for psychotherapeutic intervention. This individual was found to have the greatest degree of psychopathology, and may rely on alcohol as a defense against anxieties which continuously threaten to overwhelm him. He may occasionally be arrested for being drunk in public, but he does not victimize society in the same manner as the criminal does. Rather, he is primarily a nuisance case who merely offends the prevailing mores of the public.
The Minnesota Multiphasic Personality Inventory was administered to 30 nonalcoholic criminals, 30 criminal alcoholics and 30 non-criminal alcoholics. The three groups were comprised of Caucasian males, and were comparable in age and educational achievement. It was hypothesized that the criminal alcoholics would display a combination of the pathological traits of both the nonalcoholic criminals and the noncriminal alcoholics. The obtained MMPI scores were subjected to the analysis of variance, and Scheffe's method of post-hoc comparison was applied to those scales where a statistically significant difference was found to exist.

The results disclosed that criminal alcoholics did not differ in any significant way from nonalcoholic criminals. It was demonstrated that criminal alcoholics are primarily sociopathic individuals, with addiction to alcohol being a secondary feature. However, the noncriminal alcoholics were found to be the most pathological group. When compared to the two criminal groups, the noncriminal alcoholics scored significantly higher on Scales F, Hs, D, Pa, Pt and Sc. Scale K was significantly lower for the noncriminal alcoholic group. Scales Pd and Ma were abnormally high for all three groups, with no significant differences between them. Statistically significant differences were also absent on Scales L, Hy, Mf and Si.

The development of the basic personality characteristics, which are likely to predispose an individual to alcoholism, were discussed.
within a psychoanalytic frame of reference. Noncriminal alcoholics were seen as having been traumatized and fixated during the oral and anal stages of psychosexual development. Criminals, whether alcoholic or nonalcoholic, were viewed as having failed to achieve identification with an adequate male model during the edipal phase.

The probable dynamics, of how the actual behavior comes to be established, were formulated according to the concepts of learning theory. Both criminal behavior and excessive drinking often produce consequences which are positively reinforcing, and therefore come to be acquired by many predisposed individuals. Cultural factors are also considered to be influential in this process.
ADDENDUM

The MMPI Alcoholism Scales

There have been several attempts to develop special scales from the MMPI which could discriminate alcoholics from nonalcoholic individuals. Such a scale, if sensitive to alcohol addiction, would provide a valuable tool to the diagnostician who deals with populations where the incidence of alcoholism is high. Dahlstrom and Welsh report on three research scales which had been found to be successful in differentiating alcoholics from certain nonalcoholic groups.

The Ah scale, developed by Hoyt and Sedlacek, consists of 68 items. It was derived by contrasting the MMPI responses of 98 hospitalized alcoholics with those of the MMPI normative group. The normal subjects scored significantly lower than did the alcoholics, but the scale failed in differentiating an alcoholic population from a group of nonalcoholic psychiatric cases.

The Al scale consists of 125 items and was developed by Hampton. It resulted from a comparison of 84 Alcoholics Anonymous members with 84 clients seeking vocational counseling at two university

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85 op. cit., pp. 324, 443, 449.
86 Hoyt, D.P. and Sedlacek, G.M., "Differentiating Alcoholics from Normals and Abnormals with the MMPI." Journal of Clinical Psychology, XIV (January 1958), 70.
87 Hampton, Peter Jan, "The Development of a Personality Questionnaire for Drinkers." Genetic Psychological Monographs, XLVIII (August 1953), 55-115.

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guidance bureaus. The two groups were matched for age and intelligence, and the scale was found to discriminate between them at a significant level.

Holmes developed the Am alcoholism differentiation scale by comparing 72 alcoholics, who were in state institutions under court commitment, with the MMPI normative group. A total of 59 items were found to discriminate the two groups significantly.

In evaluating these three scales, Rich and Davis reported that the Al scale had failed to distinguish between male alcoholics and psychiatric patients, and that the Ah scale had not differentiate female alcoholics from normals. However, the Am scale was found to superior in identifying male alcoholics from normals (correlation .74), and alcoholics from psychiatric patients (correlation .68). Button similarly found the Am scale to be successful in discriminating a group of alcoholics from a group of normals, and also from a group of nonalcoholic psychiatric patients.

The three research groups, utilized for this paper, provided an opportunity to determine how well these three empirical alcoholism scales could differentiate the nonalcoholic criminal group from the two alcoholic groups. Therefore, the test responses of all 90 sub-


90 op. cit., p. 279.
jects were screened with the three alcoholism scales (Ah, Al and Am) and the results were then compared with the analysis of variance. The data obtained are presented in Table 6.

As can be seen from Table 6, significance was obtained on Scales Ah and Al, while no significant differences between the three groups were found to exist on the Am scale. Therefore, Scheffe's method of post-hoc comparison was applied to the first two scales, Ah and Al. The results of this comparison are shown in Table 7.
TABLE 6

MEAN RAW SCORES AND COMPARISON OF THREE MMPI ALCOHOLISM SCALES

<table>
<thead>
<tr>
<th>Scales</th>
<th>Nonalcoholic Criminals</th>
<th>Criminal Alcoholics</th>
<th>Noncriminal Alcoholics</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ah (68 items)</td>
<td>42.3</td>
<td>44.4</td>
<td>39.2</td>
<td>6.60***</td>
</tr>
<tr>
<td>Al (125 items)</td>
<td>47.7</td>
<td>51.5</td>
<td>61.8</td>
<td>9.69***</td>
</tr>
<tr>
<td>Am (59 items)</td>
<td>32.8</td>
<td>34.2</td>
<td>34.2</td>
<td>0.74</td>
</tr>
</tbody>
</table>

degrees of freedom = 2 and 89

***Significant at the .01 level.

TABLE 7

RESULTS OF SCHEFFE'S POST-HOC COMPARISONS OF MMPI ALCOHOLISM SCALES WITH STATISTICALLY SIGNIFICANT DIFFERENCES

<table>
<thead>
<tr>
<th>Groups Compared</th>
<th>F'-Scores for Scale Ah</th>
<th>F'-Scores for Scale Al</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 versus 2</td>
<td>2.18</td>
<td>1.28</td>
</tr>
<tr>
<td>1 versus 3</td>
<td>0.46</td>
<td>17.07***</td>
</tr>
<tr>
<td>2 versus 3</td>
<td>13.39***</td>
<td>9.01**</td>
</tr>
<tr>
<td>1 versus 2 and 3</td>
<td>0.14</td>
<td>9.23**</td>
</tr>
<tr>
<td>1 and 2 versus 3</td>
<td>11.01***</td>
<td>10.96***</td>
</tr>
<tr>
<td>1 and 3 versus 2</td>
<td>9.37**</td>
<td>1.14</td>
</tr>
</tbody>
</table>

degrees of freedom = 2 and 87

***Significant at the .01 level
**Significant at the .025 level

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The results presented in Tables 6 and 7 lead one to conclude that all three alcoholism scales are of little value in distinguishing the two alcoholic groups from the nonalcoholic group. Scale Ah showed no significance in the comparison of Group 1 versus Groups 2 and 3, while it did differentiate significantly between the two alcoholic groups (Table 7). Scale Al was somewhat more successful in discriminating between the nonalcoholic criminal group and the non-criminal alcoholic group (Table 7, Group 1 versus 3). However, it also failed to detect differences between the nonalcoholic and alcoholic criminals (Table 7, Group 1 versus 2), while revealing a significant difference between the two alcoholic groups (Group 2 versus 3).

These findings are in agreement with the conclusions offered earlier in this paper, that alcoholism is not a clinically uniform personality disorder, and that alcohol addiction in the criminally inclined individual is a secondary feature. In addition, all three scales appear to be primarily measures of general maladjustment, rather than of alcoholism alone. In view of these factors, it is not unexpected that the scales failed to distinguish the two alcoholic groups from the nonalcoholic criminal group to any significant extent.

91 MacAndrew, Craig and Geertsma, Robert H., "A Critique of Alcoholism Scales Derived from the MMPI." Quarterly Journal of Studies on Alcohol, XXV (March 1964), 75.
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APPENDIX A

SUMMARY OF MMPI MEAN T-Scores REPORTED ON ALCOHOLIC AND CRIMINAL POPULATIONS

<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Author and Year</th>
<th>Hs</th>
<th>D</th>
<th>Hy</th>
<th>MMPI Clinical Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hs</td>
<td>D</td>
<td>Hy</td>
<td>Pd</td>
</tr>
<tr>
<td>Hospitalized Alcoholics without Psychosis</td>
<td>*Brown 1950</td>
<td>15</td>
<td>70</td>
<td>63</td>
<td>51</td>
</tr>
<tr>
<td>Neurotic:</td>
<td></td>
<td>3</td>
<td>44</td>
<td>34</td>
<td>98</td>
</tr>
<tr>
<td>Psychopathic:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcoholics Anonymous Members</td>
<td>Hampton 1953</td>
<td>57.7</td>
<td>63.1</td>
<td>59.7</td>
<td>67.4</td>
</tr>
<tr>
<td>Hospitalized Alcoholics without Psychosis</td>
<td>Button 1956</td>
<td>57</td>
<td>63</td>
<td>56</td>
<td>69</td>
</tr>
</tbody>
</table>

(CONTINUED)

*Not K-Corrected

92op. cit.
93op. cit.
94op. cit., p. 266
<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Author and Year</th>
<th>Hs</th>
<th>D</th>
<th>Hy</th>
<th>MMPI Clinical Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholics</td>
<td>Hoyt and Sedlacek 1958</td>
<td>55</td>
<td>61</td>
<td>58</td>
<td>62 53 52 57 52 44</td>
</tr>
<tr>
<td>Hospitalized Noncriminal Alcoholics</td>
<td>Reimann 1966</td>
<td>60.8</td>
<td>69.8</td>
<td>61.8</td>
<td>73.2 56.1 60.8 63 63 60.7 55.8</td>
</tr>
<tr>
<td>Nonhospitalized Alcoholics without Psychosis</td>
<td>Spiegel et al. 1970</td>
<td>65.6</td>
<td>70.1</td>
<td>62.9</td>
<td>74.9 66 65.1</td>
</tr>
<tr>
<td>Alcoholic Prison Inmates</td>
<td>Reimann 1966</td>
<td>55</td>
<td>62.4</td>
<td>56</td>
<td>74.6 54.9 56.2 56.8 52.8 66.1 53.1</td>
</tr>
</tbody>
</table>

(Continued)

95 op. cit.
96 op. cit., p. 10.
97 op. cit., p. 368.
98 op. cit.
<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Author and Year</th>
<th>MMPI Clinical Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prison Inmates, Caucasian</td>
<td>Caldwell 99, 1954</td>
<td>58.9 63 55.3 72.3 52 59.7 60.5 63 62.2</td>
</tr>
<tr>
<td>Prison Inmates, Racially Mixed</td>
<td>Stanton 100, 1956</td>
<td>55 61 56 70 57 56 59 58 62 52</td>
</tr>
<tr>
<td>Prison Inmates</td>
<td>Panton 101, 1958</td>
<td>62.7 64.8 60.1 71 55.1 61.8 62.9 65.1 62 53.9</td>
</tr>
</tbody>
</table>

