Field Dependence in Relation to Severity of Alcohol Abuse

York Yee Lee
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FIELD DEPENDENCE
IN RELATION TO SEVERITY OF ALCOHOL ABUSE

A Thesis
Presented to
The Faculty of the Department of Psychology
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of
Master of Arts

by
York Yee Lee
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This thesis is submitted in partial fulfillment of
the requirements for the degree of

Master of Arts

York Yee Lee

Approved, June 1973

Virgil V. McKenna, Ph.D.

W. Larry Ventis, Ph.D.

Glenn D. Shean, Ph.D.

Ben A. Hammack, Ph.D.
Chief Psychologist
Eastern State Hospital

Stanley B. Williams, Ph.D.
Chairman
Department of Psychology
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ABSTRACT

The present study was designed to investigate degree of field-dependence in relation to severity of alcoholism. After applying appropriate controls for the variables of age, education, intelligence, organicity and socio-economic status, it was specifically hypothesized that severe alcoholics would be more field-dependent, as measured by Embedded-Figures-Test (EFT) and Rod and Frame Test (RFT), than mild abusers would be. Forty-five male subjects were given a Severity-Alcohol-Abuse-Scale questionnaire to determine the extent of their alcohol abuse. Alcoholics having Severity-Alcohol-Abuse-Scale scores of 31 and over were classified as severe abusers, while those receiving scores below 31 were considered mild abusers.

The hypothesis that severity of alcoholism is related to degree of field-dependence, was not supported. The severe and mild abusers did not differ significantly from each other with respect to perceptual performance on RFT and EFT. Additional analysis of the data was made by comparing the ten most severe and the ten least severe alcoholic abusers on the RFT and EFT. Although mean differences were larger than those for the entire samples, no significant differences were found between these two groups on either RFT or EFT. Consistent with previous research the alcoholics as a whole were relatively field-dependent.

Results were discussed in terms of problems of defining severity of alcohol abuse and previous research indicating that alcoholics function at relatively stable levels of field-dependence.
FIELD DEPENDENCE

IN RELATION TO SEVERITY OF ALCOHOL ABUSE
INTRODUCTION

The purpose of this research is to investigate the relationship between severity of alcoholism and mode of perceptual orientation.

Mode of Perceptual Orientation

Recent impetus given to the study of perceptual problems in relation to alcoholism is attributed to the works of Witkin and his collaborators. That people vary widely in their manner of perception, is summarized in their book called Personality Through Perception (Witkin, Lewis, Hertzman, Machover, Meissner, and Wapner, 1954). The findings reported demonstrate that there are two individual modes of perception which Witkin et al. have labeled "field-dependent" and "field-independent." Field-independence, the analytic mode of field approach, refers to one's ability to extract a discrete item from its embedded context; field-dependence, the global mode of field approach, is the inability to separate items from the surrounding field.

An important feature of differentiation theory as stated by Witkin, Dyk, Paterson, Goodenough, and Karp (1962), is that the process of human development is from a global to an increasingly differentiated and analytical state. Included in this concept of differentiation, is the dimension of
field-dependence-independence. With respect to differentiation theory then, field-independence is an expression of a relatively high level of psychological differentiation, as indicated by a well developed sense of self-identity, articulate body concept, and strong defense mechanisms. In contrast, field-dependence is a reflection of limited psychological differentiation, characterized by global experiences, diffuse body concept and self-identity, and poor defense mechanisms. In general, the dimensions of field-independence-dependence, are a reflection of greater or limited psychological differentiation.

According to Witkin et al., the person's mode of perception can be defined by his performance on a series of perceptual tests, specifically designed to assess individual differences. Underlying these perceptual tests is their measurement of one's ability to separate an item from the field in which it is incorporated. The Rotating-Room Test is a task requiring the subject to adjust his body to a position that he perceives as being the objective vertical while the apparatus in which he is seated is being rotated around a circular track (Witkin et al., 1954). Another perceptual task is the Tilting-Room-Tilting-Chair Test (TRTC). The first part of this test requires the subject to instruct the investigator to move the room in which he is seated to a position which he perceives as being the upright (Room-Adjustment-Test, RAT). In the latter part, the subject is asked to bring his body to an upright position within a tilted room (Body-Adjustment-Test, BAT). In order for him to do so,
he must first be able to avoid the influence of the surrounding field, which in this case, is the tilted room.

Similarly, the Rod-And-Frame Test (RFT) is another perceptual task that determines how well an individual can also locate the upright position under various conditions. The RFT is used more frequently than any other perceptual task because of its practicality in terms of cost and portability. For this test, the subject is brought into a completely dark room. He is then seated in a chair which is in the upright position. Directly in front of him is a luminous rod surrounded by a luminous frame. Both the rod and frame can be tilted independently of one another, i.e. the investigator can tilt the rod alone or the frame alone, or he can tilt them both at the same time to the same or to the opposite sides. When the frame is tilted at a certain angle, the subject is asked to determine when he perceives the rod as being vertical. If the subject tilts the rod (through the instructions of the investigator) in the direction of the tilted frame as being upright, the subject is said to be guided or influenced by the surrounding field, hence the term "field-dependence." In this case, the subject is determining the rod's position in relation to the visual field which surrounds it. The concept of field-dependence as designated by Witkin et al. (1954, 1962) is thus given to those individuals who cannot overcome the influence of the surrounding field. For this reason field-dependence is considered the global mode of field approach.
Contrarily, some individuals are able to perceive the rod in its upright position with relatively little influence of the surrounding context. For these individuals, the upright is determined largely by its location with reference to the body position. Hence, those individuals who are able to separate a particular item from its context, are said to be "field-independent." In this respect, field-independence is the analytical mode of field approach.

Of all the perceptual tasks that Witkin et al. use, the Embedded-Figures-Test (EFT) is the one that does not involve any orientation of the upright. This test is included among the battery of perceptual tasks designed by Witkin et al. because it measures one's ability to perceive a discrete item independently of its background. The EFT is essentially a paper and pencil questionnaire in which the subject is required to locate a simple form within a complex figure.

In general, test performance suggests that people do not fall distinctly into two different modes of field approach, but are spaced variably along the continuum of field-dependence-independence. Evidence from Witkin et al. (1954) shows that each person who exhibited a given mode of perception along this continuum, tended to be consistent from one perceptual test to another. Moreover, these individual differences in modes of field approach, are associated with some general aspects of the individual's personality structure.
A field-dependent person is characterized partially by passivity, i.e. inability to function independently of environmental cues. Other characteristics of the field-dependent individual, are lack of self-awareness, and fear of sexual and aggressive impulses as well as poor self-control over these impulses. Also associated with field-dependent behavior, is the individual's low self-esteem and low evaluation of his own body. In contrast, the field-independent individual is a person who can initiate activity on his own without support from the environment. The field-independent person is more self-accepting of his own worth, has better control over his impulses and is more confident in his own body image.

Utilizing the basic findings reported in Personality Through Perception as a springboard, Witkin, Dyk, Faterson, Goodenough, and Karp (1962), extended and confirmed the earlier works in an updated version called Psychological Differentiation. Working within the developmental framework that young children perceived in a relatively field-dependent manner and later progressed to a more field-independent style, the concept of psychological differentiation was advanced (Witkin, et al., 1962). The concept of differentiation states that the course of human development is from a global to an increasingly differentiated and analytical state, i.e. the organism as it matures, expresses a growing sense of separate identity, shows an increasingly defined body concept, develops specialized systems of control and defense, and is able to
articulate his experiences of self from his environment.

A series of studies by Witkin et al. (1962) substantiated the finding that children who are characterized by an analytical mode of field approach, experience the body and self as being separate entities, thus reflecting more developed self-differentiation. Conversely, children with a global mode of field approach, are apt to have less defined concepts of body and self, as well as poor mechanisms of control and defense. Overall results indicated that the mode of field approach is a reflection of greater or limited differentiation. In this respect, field dependence and independence are subsumed under the more inclusive concept of psychological differentiation.

Relationship Between Alcoholism And Mode of Perceptual Orientation

The mode of field approach has been related to alcoholism. A brief review of the literature dealing with alcoholism and the concept of field-dependence-independence, will provide a comprehensive setting for the hypothesis to be considered in this paper.

Extensive research on alcoholism has been focused on field-dependence, a personality trait generally ascribed to alcoholics. The alcoholic has often been portrayed as more field-dependent than non-alcoholics (Witkin, Karp and Goodenough, 1959). Utilizing three determinants of spatial orientation; the Body Adjustment Test, the Rod and Frame Test, and the Embedded-Figures-Test, the hypothesis that alcoholics are likely to be field-dependent in
their perception was tested by Witkin et al. (1959). In each of these three tests, it was found that the alcoholics as a group, were more field-dependent in perception than non-alcoholics.

Replicating the studies reported by Witkin and his colleagues, Bailey, Hustmyer, and Kristofferson (1961) reported similar findings that supported the concept that alcoholism is associated with field-dependence. Their investigation differed from Witkin's in two respects: (1.) only the rod and frame were used, and (2.) some of the subjects were brain damaged and some were not. The results suggested that alcoholism is associated with field-dependence, not because alcoholics are dependent perceivers, but possibly because of organic impairment produced by severe alcoholism.

Further experimentation by Bailey et al. showed that brain damage without alcoholism is also associated with perceptual dependence. These experimental findings suggest that perceptual dependence may be a consequence of organic impairment. In this particular experiment, it was reported that brain damaged patients without any history of alcoholism showed greater perceptual dependence than alcoholic patients.

Additional evidence from Elliot (1961) also supports the conclusion that alcoholics are more field-dependent than any other diagnostic or control group with the exception of brain damaged patients.

A number of longitudinal studies have indicated that the level of perceptual field-dependence and independence among alcoholics
and normals, remains well stabilized over a long period of time. Witkin et al. (1962) demonstrated that the concept of field-dependence or field-independence is resistant to change by experimental means. Thus, this trait is considered a stable characteristic of the person. Furthermore, stability of perceptual behavior is not affected by the ingestion of alcohol, amphetamines, barbiturates and tranquilizers or by the exposure of stress, and electrocortical shock. Elliot and McMichael (1963) found that stability of perceptual behavior is not amenable to special training.

Since these early studies, recent evidence has challenged and cast some doubt on the hypothesis that field-dependence or field-independence is a stable and unalterable characteristic (Jacobson, 1966; Jacobson, 1967; and Goldstein & Chotlos, 1966). It was found that either moderate sensory deprivation or abstinence from alcoholic ingestion resulted in a reduction of field-dependence.

Witkin et al. (1954) found that female subjects tend to be considerably more field-dependent and less analytical than male subjects. Overall, females showed more passive acceptance of the surrounding field than males do. To determine whether sex differences are found between male and female alcoholics, Karp, Poster, and Goodman (1962), employed a battery of four tests, namely the Figure Drawing Test, the Body-Adjustment-Test, the Rod and Frame Test, and the Embedded-Figures-Test, to differentiate field-dependency among alcoholic and non-alcoholic women. These
results were then compared to previous results obtained for alcoholic men. The hypothesis that alcoholic women are more field-dependent and tend to have a less sophisticated body concept than non-alcoholic women was confirmed.

Using the Embedded-Figures-Test, Burdick (1969) found that alcoholics with a higher annual income were more field-independent than a normal control group. The possibility of a higher level of education among higher socio-economic levels of alcoholics could be an important variable in the ability to perform in a significantly more differentiated fashion on the Embedded-Figures-Test.

By means of factor analysis, Goldstein and Shelly (1971) attempted to relate field-dependence in alcoholics with other aspects of cognitive and intellectual functioning. In this experiment, field-dependence was measured with the Witkin rod and frame apparatus, while subtests of the Halstead Neuropsychological Battery and the Wechsler Adult Intelligence Scale (WAIS) were used to evaluate various aspects of cognitive and intellectual functioning. Results from the WAIS indicated that the IQ score of the alcoholic population fell within normal limits (90-110). Although these alcoholics were of normal intelligence, they performed slightly better on Verbal skills than on Performance skills. Test performance on the Halstead Battery reflected the presence of mildly impaired psychomotor dexterity. These two tests of cognitive functioning are consistent in showing that alcoholics performed relatively well in language and memory functions, but relatively
deficient in the area of psychomotor skills and speed. Scores from
the RFT were in the direction of field-dependence. Within this
particular sample, alcoholics tend to be field-dependent and have
average language and memory skills, but were somewhat retarded in
the area of psychomotor skills. Based on these findings, it was
concluded that hospitalized alcoholics showed some organic impair­
ment on measures of adaptive abilities even though they were of
normal intelligence as measured by standard tests of intelligence.

In the above studies, the investigators were not able to
discriminate the severity of alcohol abuse in relation to field­
dependence. Moreover, the subjects were always dichotomously
classified as being either "alcoholic" or "non-alcoholic."
Whitelock, Overall and Patrick (1971) have constructed a device
that measures the severity of alcohol abuse. In their study,
severity of alcohol abuse as a variable was taken into account
whereas in many prior studies, severity of alcohol abuse was
ignored. A relationship was found between scores derived from the
alcohol-abuse inventory and the MMPI questionnaire. Severity of
alcohol abuse in relation to MMPI profile patterns, revealed three
distinctive personality patterns in alcoholic patients. These
three patterns are dominated by elevated scores on Psychopathic
Deviate (Pd), Depression (D), and Psychathenia (Pt). In this study,
serious abusers were found to have depressive and severely psycho­
neurotic patterns while the less severe abusers were found to have
psychopathic personality patterns. Those patients who abuse
alcohol to a moderate degree (which represented the majority of the patients), tended to have MMPI profile patterns dominated by the Pd component.

Overall and Patrick (1972) have also emphasized the fact that severe alcohol abusers can be distinguished from the less severe abusers in terms of index scores from both the Severity-Abuse-Scale and the MMPI questionnaire. They, too, found that the most distinguishing feature about the severe alcoholic abusers, is their neurotic sensitivity, anxiety, and depression. These studies of severity of alcohol abuse suggest that within the alcoholic population there may be at least two distinctive personalities. These personalities are characterized by both the extent of alcohol usage and by different personality characteristics reflected in the MMPI profile.

Comparing two groups of alcoholics that differ in the length of alcoholic history, Karp and Konstadt (1965) have attempted to investigate the effects of length of heavy drinking on field-dependence. Results indicated that performance on field-dependence as measured by the body-adjustment test, rod-and-frame test and embedded-figures test was not affected by prolonged alcoholic consumption.

The relationship of severity of alcohol abuse to field-dependence-independence, has never been fully investigated. In past studies dealing with field-dependency, subjects were always dichotomously labeled as being either alcoholic or non-alcoholic.
The range of severity within the alcoholic population as measured by the Severity-Abuse-Scale has not been considered in studies of psychological differentiation. Furthermore, in these past investigations, no one study has ever included complete control for the following factors: (1.) age, (2.) socio-economic status, (3.) intelligence, (4.) organicity, and (5.) education.

The main purpose of the present research, then, is to examine the relationship of severity of alcoholism within the alcoholic population to field-dependency, providing controls for such factors as age, socio-economic status, intelligence, organicity, education and ethno-religious background. Previous research indicates that all these factors may make contributions to the degree of field-dependence. For example, the relationship between perceptual performance and general intelligence (Witkin et al., 1962), indicated that field-independence is associated with superior IQ in young children. In some of the studies that were discussed, only the RFT or the EFT was used to measure field-dependence-independence. Included in this paper is the use of both measures to determine the mode of field approach. Wachtel (1972) has stated that the use of only one measure of field-dependence affects and limits the interpretation of data, especially when one does not utilize all the measures of the construct.

This study is a more intensive and definitive examination of the problem of relationship between alcoholism and aspects of psychological differentiation. Evidence from past studies suggests
an association between alcoholism and field-dependence. By applying appropriate controls for the variables listed above, it is specifically hypothesized that severe alcoholics are more field-dependent, as measured by EFT and RFT, than mild alcoholic abusers.
METHOD

Subjects

Out of a total of 91 volunteer alcoholic patients, 45 male subjects without any evidence of an organic brain syndrome as measured by the MFD, were selected from Eastern State Hospital, Williamsburg, Virginia. Subjects' age ranged from 26-61. Their mean age was 42.20 years (SD = 8.94) with mean of education of 11.8 years (SD = 2.75). Alcoholic patients are referred to this clinic from a variety of sources. Admission is not restricted by any economic criterion; however, alcoholics from the lower middle and working classes tend to predominate. Most patients who come to this hospital are already diagnosed as having some problems with alcohol. A summary of the demographic and socio-cultural characteristics of the alcoholic population is presented in Table 1. All alcoholic subjects were informed that they had a right to refuse to participate or to leave the experiment at any time.

In this experiment there are two alcoholic ranges, namely, (1.) the severe alcoholic abusers, and (2.) the mild alcoholic abusers. In the severe alcoholic group, there are 25 male subjects while the mild group is comprised of 20 subjects.

Severity of Alcohol Abuse Scale

This inventory measures the severity of alcohol abuse and
## TABLE 1

SOCIO-CULTURAL CHARACTERISTICS OF THE ALCOHOLIC POPULATION

<table>
<thead>
<tr>
<th>Age</th>
<th>N*</th>
<th>Marital Status</th>
<th>N*</th>
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<tbody>
<tr>
<td>20-29</td>
<td>5</td>
<td>Single</td>
<td>4</td>
</tr>
<tr>
<td>30-39</td>
<td>13</td>
<td>Married</td>
<td>18</td>
</tr>
<tr>
<td>40-49</td>
<td>19</td>
<td>Separated</td>
<td>6</td>
</tr>
<tr>
<td>50-59</td>
<td>7</td>
<td>Divorced</td>
<td>13</td>
</tr>
<tr>
<td>60+</td>
<td>1</td>
<td>Widowed</td>
<td>4</td>
</tr>
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Mean=24.20, SD=8.94

<table>
<thead>
<tr>
<th>Socio-Economic Status</th>
<th>Ethnicity</th>
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</thead>
<tbody>
<tr>
<td>Upper Middle Class</td>
<td>Caucasian</td>
</tr>
<tr>
<td>Middle Class</td>
<td>Negro</td>
</tr>
<tr>
<td>Lower Middle Class</td>
<td></td>
</tr>
<tr>
<td>Working Class</td>
<td>18</td>
</tr>
<tr>
<td>Lower Class</td>
<td>11</td>
</tr>
</tbody>
</table>

Mean=3.71 (IV, working class)

<table>
<thead>
<tr>
<th>Alcoholic Hospitalization History</th>
<th>Psychiatric Hospitalization History</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Once</td>
<td>Once</td>
</tr>
<tr>
<td>Twice or More</td>
<td>Twice or More</td>
</tr>
</tbody>
</table>

N*= 45 male alcoholics
consists of forty-two items to which subjects answer true or false. The scale was developed by Overall and Patrick (1972) to measure severity of alcohol abuse in relation to MMPI items. Factor analysis of an alcoholic drinking questionnaire, resulted in forty-two items that were found to relate most highly to the severity of alcohol abuse. The questionnaire for the forty-two items providing greatest discrimination between levels of alcohol abuse is found in Appendix A. The individual alcoholic-abuse-score is the sum of alcohol oriented response (or the number of true) to the forty-two items.

Apparatus Measuring Field-Dependence

The Rod and Frame Test (RFT) is an apparatus that measures the individual's perception of the upright under various conditions. The apparatus consists of a square frame. The sides are one inch in width but forty-two inches in length. Within this square, there is a rod, also one inch in width but only thirty-nine inches in length. The frame and rod are independently mounted on a common center. A protractor permits measuring the deviation from the perpendicular of the frame and of the rod. The frame and rod are coated with luminous paint. In a dark room, these two objects are the only visible equipment. In front of the rod and frame apparatus is a wooden chair for the subject, exactly seven feet away. The chair is designed with an adjustable chin rest that is attached to a fixed armrest. The purpose of the chin rest is to prevent the subject's head from moving.
Another measure of field-dependence-independence is the Embedded-Figures-Test (EFT). The EFT does not involve any orientation toward the upright, nor does it involve tilting the body in any way. The EFT is a paper and pencil test in which the subject is required to find a simple form incorporated within a larger complex figure. The standard group EFT (Oltman, Raskin, & Witkin, 1971) is a series of eighteen complex figures including nine practice problems. In each figure, the subject is to find a simple form. For example, the outline of a simple figure may form the boundaries of several prominent subpatterns within the larger complex figure. To disguise the simple form even further, color patterns are superimposed in such a way that the given pattern and its subpatterns are reinforced. The structure of the complex figure determines how easy or how hard the simple form is to be detected.

Measure for Brain Damage

Research has shown that the Memory-for-Design-Test (MFD) significantly differentiates brain disordered subjects from those without brain disorder (Graham and Kendall, 1960). By administering both the Bender-Gestalt (BG) and the MFD to state mental hospital patients, Anglin, Pullen and Games (1965) attempted to compare the MFD with the widely used BG. Results from the MFD and BG were then scored by four hospital raters. Validity coefficients of .55 for the BG and .67 for the MFD were obtained by averaging the ratings across all four raters. The validity coefficients of these
two tests were not significantly different when tested by a Type I analysis of variance. However, scorer's agreement was much higher for the MFD than for the BG. For the BG, the inter-rater reliability coefficients ranged from .67 to .87 while those for the MFD ranged from .96 to .98. Reliability of the MFD scores was found to be far superior to that of the BG (Anglin et al., 1965). Later findings by Kendall (1966) have indicated that test-retest reliability of the MFD scores remained relatively stable, ranging from .85 to .93. In a recent study by Asccough, Strouf, Cohen, and Smith (1971), these authors assessed the validity of the MFD in the differentiation of brain damaged and schizophrenic patients. MFD scores were compared with independent diagnoses of organicity and schizophrenia. It was found that the MFD discriminated 77% of the organic patients from the schizophrenic patients with an interjudge reliability of .96 to .98.

The test materials for the MFD consist of fifteen five-inch cardboard squares. On each of these cards, there is a figure printed in black ink. All the figures are composed of straight lines. The general procedure is to expose each of the cards, one at a time, for five seconds. After the five second exposure, the card is withdrawn and the subject is asked to draw one like it. The test usually requires about ten to fifteen minutes to complete all fifteen designs. Standard instructions for the administration of the MFD are found in The Memory-For-Design-Test: Revised General Manual (Graham & Kendall, 1960).
Measure for Socio-economic Status

To determine the subject's socio-economic status, the Psychiatric Patient Census was used. The Psychiatric Patient Census was developed by Hollingshead and Redlich (1958) and is divided into two parts, sociological and psychiatric. In this experiment, only part of the sociological section was used. This part consists of questions pertaining to one's name, age, sex, occupation, education, etc.

According to Hollingshead and Redlich, there are five social class structures, namely, (1.) upper-middle class, (2.) middle class, (3.) lower middle class, (4.) working class and (5.) lower class. To determine which one of these five class structures that a subject belongs to, part of the Hollingshead's "Index of Social Position" was used. The Index of Social Position takes into account (1.) the subject's residential address, (2.) his occupational position and, (3.) the level of education that the subject had achieved. For this study, only two variables were used to determine the subject's socio-economic status, his occupational position and his level of education. Each of these two variables was then assigned a scale score. When the scale scores for occupation and education are determined, each variable is multiplied by its respective Factor Weight. For education and occupation, their Factor Weights are 5 and 9. The scale score x its Factor Weight are added up for the two variables to form the composite score. A composite score of 14-30 indicates upper-middle class;
31–47, middle class; 48–64, lower middle class; 65–81, working class; and 82–98, lower class.

**Measure for Intelligence**

To evaluate intelligence, two subtests, Vocabulary and Block Design of the WAIS were given to each of the subjects because these two subtests have been used to examine the relationship between field-dependence-independence and intelligence. Witkin et al. (1962) found that field-dependent people had difficulty with the Block Design subtest, although they were no different from field-independent people in their ability to concentrate on other portions of the IQ test, such as Vocabulary, Information, and Comprehension. These subtests of the WAIS are selected because earlier studies have indicated high correlations (Wechsler, 1955) between Vocabulary and Verbal IQ (.86–.87) and Block Design and Performance IQ (.72–.77).

**Procedures**

Session 1: Before the experiment proper began, the investigator administered to all volunteer alcoholics the MFD, a test of brain damage. If results from the MFD were in the brain damaged range, subjects were deleted from the study so as to insure that field-dependence was not contaminated with organicity. As a result, 40 male alcoholic subjects were deleted. Those volunteer subjects who did not show any organicity in their performance on the MFD, were administered the Severity-Alcohol-Abuse-Scale (Overall and Patrick, 1972). Subjects having severity of alcohol abuse scale scores of 31 and over, were classified as severe abusers while those
receiving scores below 31 were considered mild abusers. These two alcoholic ranges were based on pilot data obtained from twenty-five male subjects on the Severity-of-Alcohol-Abuse scale. The results were then graphically plotted in a frequency distribution curve (i.e. the number of positive oriented "Yes" for each of the subjects, as shown in Figure 1). As seen from Figure 1, the curve is slightly skewed to the left, since the long tail is to the left of the distribution. Such a distribution indicates that most of the subjects obtained high alcoholic scores; however, there were also subjects (indicated by the tail) who received quite low alcoholic scores as well. The mean of the frequency distribution was 30.28 and the standard deviation was 6.60. Based on this information, three alcoholic ranges were originally established, severe (36-42), moderate (29-31), and mild (16-24). Because their alcoholic scores did not fall within these specified alcoholic ranges, another six male subjects were deleted from this study. Because of the difficulty in obtaining subjects from the moderate group, the mean of 30.28 was then used as a "cut-off" point to establish the two alcoholic ranges that were used in the present procedures. The mean and standard deviation for the present sample of forty-five subjects, including the six male subjects who were deleted, was 30.75 and 7.45. For the forty-five subjects, the mean and standard deviation was 31.13 and 7.64. As calculated by an independent sample t-test, there were no significant differences between the pilot sample and the present sample of forty-five subjects with or
FIGURE 1

FREQUENCY DISTRIBUTION FOR THE NUMBER OF POSITIVE RESPONSES ON THE
SEVERITY-ALCOHOL-ABUSE SCALE FOR 25 ALCOHOLIC SUBJECTS

Mean = 30.28
SD = 6.60

NUMBER OF POSITIVE ALCOHOLIC-ORIENTED RESPONSES
without the six deleted male subjects \((t = .35, t = .55)\). This scale was given verbally in small groups to four to five subjects. The reason for this verbal administration was to obtain a more accurate and thoughtful response from the alcoholic and to reduce lying on the part of the alcoholic subjects. In cases where subjects expressed difficulty in answering an item, they were told to select the answer which was most typical of them at the present time, that is:

If you are not sure of the answer, put the answer that is most typical of you. Ask yourself is this 'true of me most of the time or false of me most of the time?' Please raise your hand if you have any other questions.

All volunteer subjects were strongly urged to answer all forty-two items. Each subject was then informed that all of his data was to be kept confidential. Furthermore, the subject was told that all information given by him for this experiment had nothing to do with Eastern State Hospital or his attending physician.

Following the verbal administration of the Severity-Alcohol-Abuse-Scale, subjects were given individually a series of two tests: Vocabulary and Block Design subtests from the WAIS and a socio-economic status questionnaire. Procedures for the intelligence test are based on standard instructions set forth by Wechsler (1955). Following this, the investigator then verbally administered the Hollingshead and Redlich Psychiatric Patient Census (1958) to determine the subject's socio-economic status.
When the necessary data has been collected from Session 1, the investigator then began Session 2 of the experiment, usually one or two days later.

Session 2: This part of the experiment was concerned with the assessment of field-dependence by RFT and EFT.

In administering the RFT, the test consists of eight trials with subject sitting in the upright position. The test requires the subject to adjust a luminous rod surrounded by a tilted luminous frame to its true upright position. In order for the rod to be in its true upright position, the subject must be able to disregard the tilted frame. Eight trials are administered in the order indicated in Table 2. Errors are recorded as the degree of the rod's deviation from the true vertical.

Upon entering the room for testing, the subject was fitted with a pair of polaroid goggles for dark adaptation. The RFT, which was covered at this point, was seven feet away from the chair in which the subject sat. The subject was helped into the chair and the polaroid lenses were kept on for about four minutes, during which time the investigator adjusted the chin rest. At this point, the general procedures were explained to the subject. The instructions were as follows:

In this experiment, I will turn the lights off in the room and you will see a lighted rod, surrounded by a lighted frame. I want you to determine when the rod is straight up and down under different conditions. By up and down, I mean straight like a tree, as if you stood next to it or straight like the walls of this room.
<table>
<thead>
<tr>
<th>Trial Number</th>
<th>Judgement Required of Subject</th>
<th>Frame's Position</th>
<th>Rod's Initial Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vertical</td>
<td>30° Right</td>
<td>30° Right</td>
</tr>
<tr>
<td>2</td>
<td>Vertical</td>
<td>30° Right</td>
<td>30° Left</td>
</tr>
<tr>
<td>3</td>
<td>Vertical</td>
<td>30° Left</td>
<td>30° Right</td>
</tr>
<tr>
<td>4</td>
<td>Vertical</td>
<td>30° Left</td>
<td>30° Left</td>
</tr>
<tr>
<td>5</td>
<td>Vertical</td>
<td>30° Right</td>
<td>30° Right</td>
</tr>
<tr>
<td>6</td>
<td>Vertical</td>
<td>30° Right</td>
<td>30° Left</td>
</tr>
<tr>
<td>7</td>
<td>Vertical</td>
<td>30° Left</td>
<td>30° Right</td>
</tr>
<tr>
<td>8</td>
<td>Vertical</td>
<td>30° Left</td>
<td>30° Left</td>
</tr>
</tbody>
</table>
With the apparatus, I can tilt the frame and the rod to the right or to the left. I can tilt the rod alone or the frame alone, or I can tilt them both as the same time to the same or to the opposite sides.

When you see the rod and frame, I want you to tell me if the rod is straight up and down like the walls of this room or straight up and down like a tree, as if you stood next to it. When you tell me in which direction to move the rod to make it straight up and down, I will begin moving it in the appropriate direction, a few degrees at a time. You will tell me if you want it moved more, or stopped, or moved back the other way. You can have as much time as you need in making your judgement. When you are satisfied that the rod is straight up and down, let me know. Then close your eyes, while I get ready for the next trial. I'll tell you when to re-open them. Any questions?

O.K. Take off your goggles, close your eyes, and don't open them until I tell you to.

Between the experimenter and the subject, communication was limited to only exchange and clarification of the procedures of the test. After the RFT instructions were administered, the apparatus was introduced for one practice trial. For the practice trial, the following instructions were given:

I will now give you a practice trial so that you can familiarize yourself with the procedures of this test. Please open your eyes and tell me at which point you see a lighted rod surrounded by a lighted frame. Now, close your eyes while I get ready for the practice trial.

When I tell you to open your eyes, I want you to tell me in which direction to move the rod to make it straight up and down like a tree, if you stood next to it, or straight up and down like the walls of this room. Please tell me in which direction to move the rod to make it straight up and down, to your right or to your left. You can
take as much time as you need in making your judgement. When you are satisfied that the rod is straight up and down, let me know. O.K? Now, any questions?

During the practice trial and the actual experiment, the subject did not receive any feedback as to the accuracy of his judgement on the rod and frame test. If the subject was still unsure about the nature of the task, the experimenter spent as much time as necessary in order that the subject understood what he was supposed to do. If there were no questions or problems, the investigator then prepared for the actual experiment according to Table 2. At the end of each trial the subject was told to close his eyes. A small flashlight was turned on to measure the reading of the protractor. The frame and rod were then re-adjusted for the next trial. The flashlight was turned off and the subject was asked to open his eyes again.

After the administration of the RFT, the subject was given the EFT. The administration of the standard group EFT (Oltman, Raskin & Witkin, 1971) was conducted in small groups of three to four patients. In order for the subject to familiarize himself with the procedures of this test, nine practice problems were given prior to the actual test. All subjects were instructed to find the simple figure within the complex one as quickly as they could. Detailed instructions for this test are found in the instruction manual of the standard group EFT (Witkin, Oltman, Raskin & Karp, 1971).
RESULTS

Within the alcoholic population, all forty-five subjects were matched for age, education, IQ, and socio-economic status. The mild alcoholics did not differ from the severe abusers in terms of these variables as determined by t-tests. Mean age, education, IQ score and socio-economic status along with t-ratios for tests of significance of the mean differences between the severe and mild alcoholic groups are summarized in Table 3, and the raw data for each subject are presented in Appendices B and C. The mean age for the severe and mild alcoholics was 41.32 years and 43.25 years, while the mean levels of education were 10.88 years and 11.55 years. The means for the variables of age and education obtained in the study are quite similar to the results reported by Goldstein and Shelly (1971) and Goldstein and Chotlos (1965). For the severe and mild alcoholic groups, their respective mean scores on WAIS Vocabulary were 9.20 and 9.60 and on WAIS Block Design were 8.44 and 8.20. These scores are consistent with the scaled scores found by Goldstein and Shelly (1971). The socio-economic status of the alcoholics used in the study ranged from upper middle class to lower class, based on the Hollingshead and Redlich criterion. In terms of class status, this sample is similar to the alcoholics used by Goldstein and
TABLE 3

DESCRIPTIVE STATISTICS FOR AGE, EDUCATION, WAIS SCORES AND SOCIO-ECONOMIC STATUS IN THE SEVERE AND MILD ALCOHOLIC ABUSERS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Severe Abusers N= 25</th>
<th>Mild Abusers N= 20</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>41.32 8.96</td>
<td>43.25 9.04</td>
<td>.70</td>
</tr>
<tr>
<td>Education</td>
<td>10.88 2.79</td>
<td>11.55 2.72</td>
<td>.81</td>
</tr>
<tr>
<td>Socio-Economic Status</td>
<td>3.96 1.02</td>
<td>3.40 1.14</td>
<td>1.74</td>
</tr>
<tr>
<td>WAIS Block Design</td>
<td>8.44 1.69</td>
<td>8.20 1.85</td>
<td>.46</td>
</tr>
<tr>
<td>WAIS Vocabulary</td>
<td>9.20 3.18</td>
<td>9.60 3.12</td>
<td>.42</td>
</tr>
</tbody>
</table>
Shelly (1971). Thus, this sample of alcoholics is representative of alcoholics used by other investigators of relationships between alcoholism and field-dependence.

The severe and mild abusers also did not differ significantly from each other with respect to perceptual performance on RFT and EFT as determined by t-tests. The means, standard deviations and t-ratios for the severe and mild alcoholics on the RFT and EFT are summarized in Table 4. The mean deviations on the RFT for the severe and mild alcoholics were 14.21 and 12.64 degrees. On the EFT, the means for the severe and mild alcoholic groups were 4.12 and 4.65. Although there were significant differences in the Severity-Alcohol-Abuse-Scale score for the two alcoholic groups, it is clear that the severe and mild abusers did not differ significantly from one another in terms of task performance. The degree of field-dependency as reflected by perceptual performances on these two tests indicates that the mode of field approach of severe abusers is no different from that of mild abusers.

Additional analysis of the data was made by comparing the top ten and bottom ten subjects from the severe and mild alcoholic groups on the RFT and EFT. Their means, standard deviations and t-values are presented in Table 5. The mean deviation on the RFT for the top and bottom ten subjects in the severe and mild alcoholic groups were 16.47 and 12.65; means for the EFT were 5.20 and 4.60. Although mean differences are larger than those for the entire samples, t-tests yielded no significant differences between
### TABLE 4

DESCRIPTIVE STATISTICS FOR EFT AND RFT IN THE SEVERE AND MILD ALCOHOLIC ABUSERS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Severe Abusers</th>
<th>Mild Abusers</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M= 25</td>
<td>M= 20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>EFT</td>
<td>4.12</td>
<td>3.57</td>
<td>4.65</td>
</tr>
<tr>
<td>RFT</td>
<td>14.21</td>
<td>11.49</td>
<td>12.64</td>
</tr>
<tr>
<td>Variable</td>
<td>Severe Abusers</td>
<td>Mild Abusers</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>----------------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N= 10</td>
<td>N= 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>EFT</td>
<td>5.20</td>
<td>3.85</td>
<td>4.60</td>
</tr>
<tr>
<td>RFT</td>
<td>16.47</td>
<td>13.76</td>
<td>12.65</td>
</tr>
</tbody>
</table>
these two groups on either RFT or EFT (ts = .6764 and .3689). A comparison of the strength of relationships ($r_m < .20$) between the samples of 20 and 25 subjects and the top and bottom ten subjects, indicated that, even with a larger sample of more extreme cases, the hypothesis would not be supported.

The curves in Figure 2 indicate that the mean deviation per trial for severe alcoholics was slightly higher than the means per trial for mild abusers. Between the two groups, the difference in means per trial was approximately two to four degrees as shown in Table 6. In seven out of nine trials, the severe alcoholics earned greater RFT deviations than the mild alcoholics. Using the binomial test, results indicated that there was no significant tendency for the severe alcoholics to earn greater RFT deviations than the mild alcoholics ($p > .20$, $r_m < .42$). It is clear from Figure 2 that the patterns of the two curves followed a similar trend. One feature of these two curves is that both severe and mild alcoholics did not show any apparent learning effect across the nine trials, including the practice trial. Instead, both groups showed a rather erratic pattern.

For each of the alcoholic groups, the scores for EFT, RFT, WAIS Block Design, and WAIS Vocabulary, were intercorrelated in order to examine the strength of the relationship among the various measures. Table 7 summarizes the correlations for both groups combined. The correlations for the severe and mild alcoholic abusers considered separately, are presented in Table 8. Analysis
FIGURE 2
MEAN DEGREES DEVIATION FOR SEVERE AND MILD ALCOHOLIC ABUSERS ON THE ROD-AND-FRAME TEST

- Severe Abusers
- Mild Abusers

Mean Degrees Deviation

Practice
Trials
34
<table>
<thead>
<tr>
<th>Trial</th>
<th>Severe Abusers</th>
<th>Mild Abusers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice</td>
<td>20.08</td>
<td>14.55</td>
</tr>
<tr>
<td>1</td>
<td>13.82</td>
<td>16.15</td>
</tr>
<tr>
<td>2</td>
<td>15.72</td>
<td>13.40</td>
</tr>
<tr>
<td>3</td>
<td>13.10</td>
<td>10.20</td>
</tr>
<tr>
<td>4</td>
<td>14.10</td>
<td>11.75</td>
</tr>
<tr>
<td>5</td>
<td>13.18</td>
<td>12.76</td>
</tr>
<tr>
<td>6</td>
<td>14.06</td>
<td>10.15</td>
</tr>
<tr>
<td>7</td>
<td>12.62</td>
<td>13.00</td>
</tr>
<tr>
<td>8</td>
<td>17.08</td>
<td>13.68</td>
</tr>
</tbody>
</table>
### TABLE 7

**CORRELATIONS BETWEEN WAIS SUBTESTS AND PERCEPTUAL PERFORMANCE FOR SEVERE AND MILD ALCOHOLIC GROUPS COMBINED**

<table>
<thead>
<tr>
<th>Measure</th>
<th>EFT</th>
<th>RFT</th>
<th>WAIS Block Design</th>
<th>WAIS Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFT</td>
<td>-.04</td>
<td>.41**</td>
<td></td>
<td>.33*</td>
</tr>
<tr>
<td>RFT</td>
<td></td>
<td>-.19</td>
<td></td>
<td>-.05</td>
</tr>
<tr>
<td>WAIS Block Design</td>
<td></td>
<td></td>
<td></td>
<td>.37**</td>
</tr>
<tr>
<td>WAIS Vocabulary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* *p < .05  
** *p < .01
### TABLE 8

**CORRELATIONS BETWEEN WAIS SUBTESTS AND PERCEPTUAL PERFORMANCE FOR THE SEVERE AND MILD ALCOHOLIC GROUPS**

<table>
<thead>
<tr>
<th>Measure</th>
<th>EFT</th>
<th>RFT</th>
<th>WAIS Block Design</th>
<th>WAIS Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFT</td>
<td>.15</td>
<td>.15</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>RFT</td>
<td>-.31</td>
<td></td>
<td>.16</td>
<td>-.03</td>
</tr>
<tr>
<td>WAIS Block Design</td>
<td>.71**</td>
<td>-.25</td>
<td></td>
<td>.06</td>
</tr>
<tr>
<td>WAIS Vocabulary</td>
<td>.64**</td>
<td>-.23</td>
<td>.74**</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** - Severe abusers (N=25) above diagonal
Mild abusers (N=20) below diagonal

\(**p < .01\)
of the correlations in Table 7 indicates that within the total alcoholic sample RFT and EFT failed to correlate with each other ($r = .04$). Evidence by Barrett, Cabe, and Thornton (1968) indicates that significant correlations appeared when reciprocal transformations of the Hidden-Figures-Test scores were correlated with RFT raw scores. For this reason, reciprocal transformations were performed on the EFT scores. Correlational results using reciprocal transformation indicated no significant EFT-RFT correlations. The correlations obtained were .29 for severe abusers, .22 for mild abusers and .10 for the total sample.

Research evidence has typically shown a significant correlation between EFT and RFT (Witkin et al., 1962). Within this particular sample of severe and mild alcoholic abusers, mean perceptual scores on the RFT failed to correlate with any one variable, including EFT. Since this correlation was not obtained, even with reciprocal transformation, split-half correlations were obtained to estimate the reliability of these two perceptual tests. For the severe alcoholics, the split-half reliabilities were .72 and .65 on the RFT and EFT; for the mild abusers, the reliabilities for these two tests were .96 and .73. For both RFT and EFT, the reliabilities were relatively high considering that the size of the two samples was small. A $z$ Test of Differences between reliabilities was then calculated. On the EFT, the test for differences between reliabilities for the two alcoholic groups resulted in a $z$ score of .47; on the RFT, $z$ was 3.23 ($p > .001$),
indicating a significantly higher reliability estimate for the mild abusers.

The correlations in Table 8 indicate that among the mild alcoholics, there were high correlations between WAIS Block Design, WAIS Vocabulary, and EFT, whereas this was not the case among severe alcoholics. For the severe alcoholics, no significant correlations were found. Because of the significant correlations found in one alcoholic group and not in the other, a z Test of Differences between r's was calculated between the two groups. R to z transformations indicated significant differences between the two alcoholic groups in the size of the following correlations: WAIS Block Design and WAIS Vocabulary (z = 2.64, p < .01), EFT and WAIS Vocabulary (z = 2.05, p < .05), and EFT and WAIS Block Design (z = 2.30, p < .05). In each case the correlation was significantly larger in the mild than in the severe alcoholic groups.
DISCUSSION

The purpose of the study was to examine the relationship between severity of alcoholism and degree of field-dependence. As was stated in the previous section, the sample of alcoholics was not apparently different from alcoholics used in other investigations in terms of age, education, IQ and socio-economic status. Thus, the alcoholic subjects in this study were not atypical and appeared to represent the general population of alcoholics used by other investigators of field-dependence and alcoholism.

The hypothesis that severity of alcoholism is related to severity of field-dependence was not supported. There were no significant differences between alcoholic groups in perceptual performances of the RFT or EFT. In general, these alcoholic subjects were relatively more field-dependent when compared to a normal college population. Normative data on the distribution of RFT scores for college students were reported by Vaught (1968) who found that these subjects, regardless of sex, rarely deviated more than 10 degrees from the vertical. The majority of the college male subjects earned mean deviations of three to four degrees. In comparison to field-dependent alcoholics used by other investigators, the obtained RFT means were not as high as the means of 16.18 (SD = 11.98) obtained by Goldstein and Chotlos (1965) or of
18.37 (SD = 4.98) obtained by Goldstein, Neuringer, and Klappersack (1970), nor were they as low as 8.94 (SD = 7.51) in the Goldstein and Shelly study (1971). The obtained means on the RFT for severe and mild alcoholic abusers (14.21 and 12.64) fell within the varying means of 8.94 to 18.37. Thus, these mean deviations were not particularly different from those reported by other investigators using alcoholics. These data support the contention that alcoholics as a group are relatively field-dependent (Goldstein and Chotlos, 1965; Goldstein, Neuringer, and Klappersack, 1970; Goldstein and Shelly, 1971; and Vaught, 1968) on the RFT. In comparison to group EFT norms reported by Witkin, Oltman, Raskin, and Karp (1971), the present sample of alcoholics was more field-dependent when compared to male college students. For a sample of 155 male college students, Witkin et al. (1971) reported that the mean on the group EFT was 12.0, while the alcoholics in the severe and mild groups in the present study obtained mean scores of 4.12 and 4.65. Thus, these data also support the contention that these alcoholics are relatively field-dependent on the group EFT (Witkin et al., 1971).

The present data, indicating that severity of alcoholism is not related to severity of field-dependence, are in agreement with results reported by Karp and Konstadt (1965). These authors investigated the long-range effects of alcoholism on field-dependence by using two groups of alcoholics which differed in the number of years of heavy drinking. Differences in field-
dependence were not found between these groups as a consequence of prolonged alcoholic drinking. An insignificant interaction between age and alcoholism was obtained, and the authors considered these data as providing support for the view that prolonged years of heavy drinking do not affect the level of field-dependence apart from the effects of increased age alone. In light of this evidence, field-dependence, which is subsumed under the more inclusive concept of psychological differentiation, was considered a relatively stable characteristic of the alcoholic regardless of the length of heavy drinking. Karp and Konstadt interpreted their results as supporting the contention that field-dependence was a precursor but not a consequence of alcoholism.

Kristofferson (1968) examined the effects of alcohol ingestion on perceptual dependence with non-alcoholic subjects. An insignificant interaction was found between pretest scores on RFT and degree of change on post-test following a moderate amount of alcoholic consumption. Kristofferson interpreted these results as suggesting that ingestion of alcohol results in significant overall increases of field-dependence. However, this effect was insufficient to alter a subject's classification as either field-dependent or independent. These results were viewed as being compatible with the Karp and Konstadt study. Kristofferson suggested that prolonged alcoholic ingestion may result in stabilized effects, or high levels of field-dependence that become invariant over a period of time. Moreover by the time an individual
has been classified as an alcoholic, the effects of sobriety, abstinence or prior ingestion of alcohol, may not change one's level of field-dependence. Thus, field-dependence is a trait that becomes stabilized by the time a person becomes labelled an alcoholic. On the other hand, field-dependence is also viewed as a general characteristic found in the personality dynamics of all alcoholics which eventually leads to the development of chronic alcoholism. Studies by Witkin, Dyk, Paterson, Goodenough, and Karp (1962) have indicated that among normal subjects, levels of field-dependence remain relatively stable over long periods of time. No differences in levels of field-dependence were also found among alcoholic subjects who differ in length of drinking history (Karp and Konstadt, 1965). Stability in field-dependence was also not affected by sobriety and abstinence as reported by Jacobson and Pisani (1970). Not all data are consistent with these findings. Jacobson (1967) and Goldstein and Chotlos (1966) found that either moderate sensory deprivation or abstinence from alcoholic ingestion resulted in a reduction of field dependence among male alcoholics.

The results obtained in the present study are open to various interpretations. The validity of the Severity-Alcohol-Abuse-Scale developed by Overall and Patrick (1972) may be questioned. Although significant differences were found between MMPI items in distinguishing the severe from the mild abusers in the original severity scale as developed by Whitelock, Overall and Patrick (1971), the scale, since then, has been slightly modified by Overall and Patrick
from the original 38 items to the present scale of 42 items. Because of the recent development of the severity scale (1972), it has not been used in many studies. In the present experiment, 45 male alcoholic subjects were administered the severity scale. Although these subjects obtained varying scores within the scale, analysis of the ten most severe and the ten least severe abusers suggested greater perceptual differences had there been a larger sample of alcoholic subjects with scores at the extreme ends of the scale. It is conceivable, then, that with a larger sample of alcoholic subjects having more extreme scores on the severity scale, the hypothesis that severity of alcoholism is related to the degree of field-dependence might be supported. Even then, this relationship is not particularly strong as indicated by the strength of relationship between the two groups ($r_m \leq .20$). As stated in the method section, a pilot study was conducted prior to this experiment to determine a frequency distribution and the mean alcoholic response. By means of t-tests, no differences were found between the means for the pilot and present samples. Thus, agreement between means from the pilot and present samples, indicates that the mean selected as a cut-off point was accurate, as well as supporting the reliability of the cut-off point. The problem, in this case, may be that there were not enough subjects having extreme scores away from the mean of 30.28. If this is the case, a larger sample of subjects with extreme scores away from the mean, might support the stated hypothesis.
Certain results of this study were unexpected in view of previous findings obtained by Witkin et al. (1962), i.e. the failure of the RFT to correlate with EFT. Results of this kind have occasionally been reported by other investigators. The obtained data were not incongruous with a summary of previous studies presented by Barrett, Cabe and Thornton (1968) who found relatively low correlations ranging from -.06 to -.47 between RFT and Hidden Figures Test (HFT). However, significant correlations were found when RFT scores were correlated with reciprocal transformation of HFT scores. Although this technique was used in analyzing the present data, significant correlations did not appear. Elliott (1961) also reported little or no correlation between EFT and RFT among male subjects. Although the bulk of the literature indicates significant correlations between RFT and EFT (Goldstein, Neuringer, and Klappersack, 1970; Witkin et al., 1962; Surgerman and Haronian, 1966; Adevai, Silverman, and McGough, 1968; and Young, 1959), the obtained results were inconsistent with these findings. It should be pointed out that in most of these studies, an individual EFT was used while in the present study, a group form of the EFT was administered to four to five alcoholic subjects at a time. The RFT was used as an external criterion by Witkin, Oltman, Raskin, and Karp (1971) in assessing the validity of the group EFT (GEFT). Witkin et al. (1971) reported a correlation of .39 between these two measures for 55 male college students. This is not a very large correlation if one wants to
consider these equivalent measures of the same underlying characteristic. The correlation between RFT and GEFT is also low when compared to a correlation of .82 between EFT and GEFT for male undergraduates. Jackson (1956) reported a correlation of .99 between a short form of Witkin's EFT and the original EFT for 50 college students. That different versions of the same test measure somewhat different things, has been suggested by Vernon (1972). One might also add that these reported correlations were found among college subjects (Witkin et al., 1962; Surgerman and Haronian, 1966; Adevaï, Silverman, and McCough, 1968; and Young, 1959) whereas the correlations for the present sample of subjects were obtained from alcoholics. Although a significant correlation of .63 was reported by Goldstein, Neuringer, and Klappersack (1970) for alcoholics, this correlation was also obtained by using the original Witkin EFT. Taking these factors into consideration, the insignificant correlation between RFT and EFT may not be so unusual.

Another possibility may be significant. Although the RFT and EFT both measure one's ability in abstracting a discrete item from its embedded context, one cannot ignore the fact that these two tests differ in item content and administration. For example, the items of the EFT bear much similarity to those found in aptitude tests. In such tests, there is a time limit. Under these circumstances, there are many cues arousing the subject's concern over his evaluation and his achievement motivation. Thus the EFT can be considered a kind of speed test in which both interest and
concentration are important factors in determining the score. Contrarily, the RFT has a minimum number of cues to arouse the subject's achievement motivation. The items (trials in this case) in the RFT are not timed, and they definitely do not overlap with items found in aptitude tests. In the EFT testing situation, there is more structure and order imposed upon the subject. This, however, is not the case with RFT. A subject brought into a completely dark room with his eyes masked with polaroid glasses might regard such a situation as highly unstructured. In an unstructured situation, there is always some uncertainty, confusion, and hesitation. Various ambiguities in the administration of the RFT have also been pointed out by other investigators (Gardner, Jackson, and Messick, 1960; Lester, 1968; and Vernon, 1972). These differences in context and method, in interaction with alcoholic dispositions, could contribute to lack of relationship between RFT and EFT.

As indicated in Table 8, among the mild alcoholics there were high correlations between Block Design, Vocabulary, and EFT scores, whereas this was not the case among severe abusers. The results for mild subjects are consistent with findings obtained by Elliott (1961). Elliott found that EFT performance was consistently related to measures of aptitude and learning and that this was not the case with RFT. High correlations between EFT and Vocabulary of .56 were reported by Dubois and Cohen (1970), who also found that correlations between RFT and verbal skills ranged only up to .35. As seen from Table 8, there was a slightly higher correlation between
Block Design and EFT than between Vocabulary and EFT for the mild alcoholic group. Witkin (1965) found that tests of field-dependence correlate more with Block Design than with Vocabulary. A highly significant correlation was found between WAIS Block Design and WAIS Vocabulary among mild alcoholics. This was consistent with findings presented by Wechsler (1955), Matarazzo (1972), and Sprague and Quay (1966) who reported correlations ranging from .42 to .65 for a normal adult population. In the present study, the obtained correlation of .64 is consistent with these findings.

The significant correlations which appeared among mild alcoholics and not among severe abusers, are difficult to explain. As stressed previously, this sample of alcoholics did not differ in terms of age, education, IQ, and socio-economic status within the two groups nor did they differ on these variables from other alcoholics used by other investigators. The low correlation of .06 between WAIS Vocabulary and WAIS Block Design is compatible with the correlation of .11 obtained by Goldstein and Shelly (1971). This finding suggests that the alcoholics used by the latter authors may be similar to the severe subjects in the present sample. A correlation of .21 between these two subtests was obtained by Sprague and Quay (1966) using a sample of retarded adults. The low correlation between WAIS Block Design and WAIS Vocabulary suggests that this is not peculiar to the present sample of alcoholics but is also found among retarded adults as
well. Insignificant correlations as reported by these investi-
gators suggest that different types of pathological groups may
show relatively lower correlations when compared to a normal con-
trol group. As Witkin has suggested (1965), severity of alcoholism
may lead to impairment of integration as manifested by low correla-
tions among intellectual skills.

In summary, the hypothesis that degree of field-dependence is
related to severity of alcoholism, was not supported. Results of
the present study support previous findings that alcoholics, on the
whole, are relatively field-dependent. These results may be viewed
in terms of the controversy over alcoholism. Some investigators
hold that field-dependence is a relatively stable and invariant
trait that changes very little by the time an individual is
classified an alcoholic, while there are some who believed that
field-dependence is a personality characteristic that may con-
tribute to the development of alcoholism. The present results are
more in agreement with the first interpretation.
APPENDIX A

FORTY TWO ITEMS PROVIDING GREATEST DISCRIMINATION BETWEEN LEVELS OF ALCOHOL ABUSE

(Taken from Overall and Patrick, 1972)

1. Do you almost always drink too much if you drink at all?
2. Do you feel that drinking is a real problem for you?
3. Are you afraid that you may become a alcoholic?
4. Are you now an alcoholic?
5. Do other people consider you a heavy drinker?
6. Do you drink more than most of your friends?
7. Do you drink more than most people that you know well?
8. Do you drink more than most of your neighbors?
9. Can you usually take one or two drinks and then stop?
10. If you take one drink, do you usually continue drinking until you get drunk?
11. When you get drunk, do you sometimes stay that way for 2-3 days or longer?
12. Do you usually stay drunk for 2-3 days or longer?
13. Do you sometimes miss work due to drinking?
14. Do you sometimes take a drink soon after you get up in the morning?
15. Do you wake up with no appetite for food after drinking the night before?
16. Do you drink in the morning to relieve a hangover?
17. Do you usually take a drink soon after you get up in the morning?
18. Do you sometimes drink in the morning to calm your nerves?
19. Do you ever take a drink to calm your nerves?
20. Do you frequently take a drink to calm your nerves?
21. After a drinking bout do you sometimes feel nervous and apprehensive?
22. After a drinking bout do you almost always feel nervous and apprehensive?
23. Do you worry that you drink too much?
24. Has your drinking substantially increased over the last 5 years?
25. Does it seem that you get drunk more easily now than you used to?
26. Do you suspect that the amount of alcohol that you drink may be harmful to your physical health?
27. Are you concerned that drinking may be damaging your mental functioning?
28. Do you sometimes have the shakes after drinking?
29. Do you frequently have the shakes after drinking?
30. Have you ever been told by a doctor that drinking is harming your health?
31. Have you sometimes discovered bruises or other injuries following a drinking occasion?
32. Do you frequently eat only light snacks on days when you are drinking?
33. Do you change eating habits when you are drinking?
34. Do you eat less when you are drinking?
35. Do you sometimes skip meals when you are drinking?
36. Do you frequently skip meals when you are drinking?
37. Have you ever had "blackouts" when drinking?
38. Have you ever fallen and hurt yourself while drinking?

39. Has your drinking caused a financial hardship for you and your family?

40. Do you wake up and stay awake for long periods in the middle of the night after you have been drinking?

41. Do you usually feel down in the dumps before you start drinking?

42. Do you usually feel down in the dumps when you start drinking?
## APPENDIX B

SEVERITY OF ALCOHOLISM IN RELATION TO FIELD DEPENDENCE IN SEVERE ALCOHOLIC ABUSERS

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*a Class I: Upper middle class; Class II: Middle class; Class III: Lower middle class; Class IV: Working class; Class V: Lower class*
APPENDIX C

SEVERITY OF ALCOHOLISM IN RELATION TO FIELD DEPENDENCE IN MILD ALCOHOLIC ABUSERS

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VITA

York Yee Lee