THE COGNITIVE STYLE OF THE SELF-DESTRUCTIVE PERSONALITY

A Thesis

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by

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* * * * *

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# Table of Contents

ACKNOWLEDGEMENTS ........................................... ii
VITA ....................................................... iii
TABLE OF CONTENTS .......................................... iv
LIST OF TABLES ........................................... vi

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II. SELF-DESTRUCTIVE BEHAVIORS AND COGNITIVE STYLES</td>
<td>4</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>4</td>
</tr>
<tr>
<td>Drug Abuse</td>
<td>7</td>
</tr>
<tr>
<td>Field Dependence vs Field Independence</td>
<td>9</td>
</tr>
<tr>
<td>Perceptual vs Conceptual Information Processing Style</td>
<td>11</td>
</tr>
<tr>
<td>Cognitive Rigidity vs flexibility</td>
<td>19</td>
</tr>
<tr>
<td>Tolerance vs Intolerance of Ambiguity</td>
<td>21</td>
</tr>
<tr>
<td>III. METHODOLOGY</td>
<td>24</td>
</tr>
<tr>
<td>Subjects</td>
<td>24</td>
</tr>
<tr>
<td>Measures</td>
<td>25</td>
</tr>
<tr>
<td>Testing Procedure</td>
<td>29</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>30</td>
</tr>
<tr>
<td>IV. RESULTS</td>
<td>31</td>
</tr>
<tr>
<td>Field Dependence vs Field Independence Measure</td>
<td>31</td>
</tr>
<tr>
<td>Perceptual vs Conceptual Information Processing Measure</td>
<td>33</td>
</tr>
<tr>
<td>Cognitive Rigidity vs Flexibility Measure</td>
<td>35</td>
</tr>
<tr>
<td>Tolerance vs Intolerance of Ambiguity Measure</td>
<td>37</td>
</tr>
</tbody>
</table>
V. DISCUSSION .................................................. 41

Field Dependence vs Field Independence .... 41
Perceptual vs Conceptual Information
  Processing Style ...................................... 43
Tolerance vs Intolerance of Ambiguity .......... 44
Race and Cognitive Style ............................ 46
Limitations of Study ................................... 47
Future Research Implications .................... 49

APPENDICES

A. Manifest Rigidity Inventory ................. 52
B. Ambiguous Pictures Test .................... 56
C. Field/Dependence/Field Independence Test 58
D. Millet Information Processing Measure .... 66

LIST OF REFERENCES ................................. 69
### LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mean Field Independence Scores by Race</td>
<td>32</td>
</tr>
<tr>
<td>2. Mean Field Independence Scores by Condition</td>
<td>32</td>
</tr>
<tr>
<td>3. Mean Information Processing Scores by Race</td>
<td>34</td>
</tr>
<tr>
<td>4. Mean Information Processing Scores by Condition</td>
<td>34</td>
</tr>
<tr>
<td>5. Mean Rigidity Scores by Race</td>
<td>36</td>
</tr>
<tr>
<td>6. Mean Rigidity Scores by Condition</td>
<td>36</td>
</tr>
<tr>
<td>7. Mean Ambiguity Scores by Race</td>
<td>38</td>
</tr>
<tr>
<td>8. Mean Ambiguity Scores by Condition</td>
<td>38</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

A factor seemingly common to all people in this society is stress. Two temporary escapes from stressors are drugs and alcohol, however each of these also has its own pitfalls which eventually add to the stressful state (Pittman and Glidewell, 1959).

The purpose of this research is to explore the relationships, if any, between self-destructive behavior and cognitive styles. The two self-destructive variables of interest are alcohol abuse and drug abuse. The purpose of this study is not to investigate causality (i.e. do self-destructive behaviors cause the person to have certain cognitive styles and evidence certain social disruptions or vice-versa). The purpose is to identify which cognitive styles are common to people manifesting self-destructive behaviors.

Research clearly suggests that one commonality of persons manifesting alcohol and/or drug abuse is that they are all experiencing stress of one form or another. Research by Linsky, Strauss, and Colby (1985) showed a positive relationship between stress and alcoholism.
Using the State Stress Index (SSI) as the measure of stress, a statistically significant relationship was found between alcoholism and stress.

According to Milt (1976) and Goodwin (1981) some common stressors for alcoholics might include work disruption, familial disruption, social breakdown, and various detrimental physical and mental conditions attributable to the alcohol. For drug abusers additional stressors might include fear of jail (police), disruption of work and social functioning, familial breakdown, and physical problems. Often criminal activities are engaged in as an attempt is made to satisfy the craving for illicit drugs when there is no other adequate source of money (Susman, 1972; Einstein, 1970). Akbar (1981) describes the self destructive behavior of alcoholics and drug abusers as the end result of humans trying to live in inhuman conditions. He states that victims of the self-destructive disorders (eg. alcoholics and drug abusers) are the most direct victims of oppression (Akbar, 1981).

Akbar (1981) suggests that persons showing symptoms characteristic of the self-destructive disorder can be divided into three groups, those who try to cope with or avoid reality (1)socially, (2)chemically or (3)psychologically.
The people in group two opted to use chemicals as their way of avoiding looking at reality and their problems head on. All of these methods of coping are detrimental, both to the individual and to society.

The self-destructive behaviors of interest in this study are alcoholism and drug abuse. A brief discussion of each disorder follows in chapter two.
CHAPTER II

SELF-DESTRUCTIVE BEHAVIORS AND COGNITIVE STYLES

The review of literature was divided into two sections: a section on self-destructive behaviors, and a section on cognitive styles. The section on self-destructive behaviors reviews the literature on alcoholism and drug abuse. The section on cognitive styles reviews the relevant literature on 1) Field Dependence vs Field Independence 2) Perceptual vs Conceptual Information Processing Style 3) Cognitive Rigidity vs Flexibility 4) Tolerance vs Intolerance of Ambiguity.

SELF-DESTRUCTIVE BEHAVIORS

Alcoholism

Alcoholism is said to run in families. Despite the fact that the specific causes of alcoholism are numerous, children of alcoholics tend to become alcoholics about four times more often than children of non-alcoholics (Goodwin, 1981). In men it usually develops in the twenties and thirties, while in women it often develops later. This study focuses mainly on male alcoholics.
This makes sense since they outnumber female alcoholics about three to one. Although the distribution of alcoholism among social classes is bimodal, with the highest rates being in the upper and lower classes, in the United States blacks living in urban ghettos have among the highest rate of alcoholism.

It appears that the factors that lead the alcoholic to excessive drinking are needs to find a decreased state of awareness, a relief from sensitivity, or in some cases oblivion (Pittman and Glidewell, 1959). What this condition does is change the individuals I-world relationship. For him/her the immediate perceptual world is dulled. It no longer contains the intensity of meaning nor the urgent demand for his/her response. He/she is now somewhat insulated from the sharp hard world of objects and facts.

It is inherent in many westerners to want to be in control of their lives to some degree. The alcoholic introduces a new aspect of the struggle to control by seeking control of him/herself as well as of the physical world (Pittman and Glidewell, 1959).

Psychologically, control of the natural world is achieved through a focusing of experience in the perceptual world. Control of the self is achieved by manipulating bodily states so that how one feels is altered. Alcohol is one substance that can be used to alter bodily
states. Dulling the perceptual world reduces the urgency of action and permits that world that makes up the past and future to assume more saliency. Another way to say this is that perceptual objects lose some of their articulation and come closer in quality to objects of fantasy, which represent our dreams and aspirations (Pittman and Glidewell, 1959).

The alcoholic claims that drinking introduces him/her to a more rosy world, and it is apparent that he/she seeks to find it, and that he/she gives as his reason for seeking it, that it is more pleasant. This implies that the perceptual (real) world, is for him/her unpleasant (Pittman and Glidewell, 1959). Conversely, excessive alcohol consumption can be anxiety arousing for those who find fulfillment in a perceptual world.

For a person to become an alcoholic means that he/she has gained knowledge which enables him/her to have some semblance of control, at least over him/herself and his/her feeling states. It means that he/she has a tool at hand that allows him/her at will to change his/her lifestyle in a way where there is no pain, prejudice or failure. If only for a short time he/she is in control and powerful.

For the alcoholic the ultimate threat to his/her style of life is the loss of alcohol. With it goes, the
security and comfort he/she is unable to obtain in the real world (Pittman and Glidewell, 1959).

Drug Abuse

According to Susman (1972) the most frequently abused drugs can be divided into three groups; 1) those that serve to sedate and/or tranquilize (i.e. barbiturates/sedatives) 2) those that serve to pep up or revive a person (i.e. pep pills, diet pills) 3) those that serve to produce a euphoric, semi-hallucinogenic state (i.e. marijuana, cocaine, heroin, methedrine) (Susman, 1972). Research by Susman (1972) also suggests that the main abusers of the drugs in group 1, barbiturates, are white, female, middle class, with at least a high school education, and over 35 years of age. The main abusers of the drugs in group 2 appear to be white, female, between the ages of 18-24, with at least a high school education and in the middle socio-economic strata. The primary users of the drugs in the third group appear to be white, male, in the low to medium socio-economic strata, 18-24 years of age and with at least a high school education. The only incident of drug abuse in which blacks appear to a significantly higher degree than whites is in the case of heroin, a drug in group #3. Here blacks account for approximately 37% of its use (Susman, 1972).
In the case of addiction to heroin, morphine, and cocaine the motive is often to escape from loneliness and pain. Older heroin addicts are mostly solitary people. Tranquilizers and barbiturates are often resorted to by middle aged housewives, under emotional stress. Also, drug addiction often stems from frustration as a result of lack of work opportunities or unsuccessful crimina-

ty. The social reasons for adolescent drug abuse/mis-

tuse appear to be feelings of inadequacy, unhappiness and depression. Many have emotional problems or disturbed social backgrounds (Sington, 1964).

Many drug abusers describe their experiences with drugs as a way of blocking out reality, a feeling of being relieved of all one’s problems (Gorodetzky and Christian, 1970). As with the alcoholic these experienc-

ces suggest that for the drug abuser the real world is too painful for them to bear. They don’t appear to be able to cope with the pain, stress and lack of control they feel. When they look at their available options this self-destructive method of coping allows them the control they desire along with the extra bonus of at least a temporary respite from the pain of the real world.
COGNITIVE STYLES

This section will review the literature on the cognitive styles common to persons manifesting symptoms indicative of the self-destructive disorder. The variables of interest are 1) Field Dependence vs Field Independence 2) Perceptual vs Conceptual Information Processing Style 3) Cognitive Rigidity vs Flexibility 4) Tolerance vs Intolerance of Ambiguity.

Field dependence vs field independence

A study by Reinking et al.,(1974) suggested that stress increased field dependence among field dependent subjects and increased field independence among field independent subjects. In a more recent study, Sarris et al., (1976) used a flickering light to generate stress. Using the Rod and Frame test (RFT), they found increased FD under the stress condition for a sample of 60 German university students.

The Rod-and-Frame Test (RFT) was the major instrument used in this early research. The subject taking the RFT is seated in complete darkness and views a luminous rod suspended within a luminous frame. Both the rod and frame can be tilted independently. Initially, the rod and frame are both tilted, and the subject is told to direct the experimenter to adjust the rod to a position
that the subject believes is vertical. Some subjects are successful at this task and are termed field independent. Others orient the rod in relation to the frame and are termed field dependent; that is, their perceptions are dependent on the surrounding environment (Goldstein, et al., 1978).

Another test commonly used to examine the field dependence/independence dimension is the embedded figures test (EFT). Numerous studies (Witkin, Goodenough, Karp, 1967, Nevill, 1974) have shown statistically significant correlations between the RFT and the EFT. The magnitude of these correlations generally falls within the .40 - .65 range.

A study by Shade (1986) showed significant racial differences between Afro-Americans and Euro-Americans on the FD/FI dimension. Afro-Americans were found to be more FD when given the Embedded Figures Test (EFT) with alpha <=.0001. (The embedded figures test "EFT" requires the subject to locate a simple figure within a complex context). These findings were confirmed in a discrimination analysis that revealed that the group EFT discriminated between racial groups correctly at least 86% of the time. Furthermore, a study by Canavan (1969) using a modified Rod and Frame test (RFT) showed white subjects to be more FI than Mexican American children who in turn were more FI than Black children. This suggests that to
a large degree Afro-Americans often appear to be more FD than their Euro-American cohorts, at least on the EFT and the RFT.

A 1985 study by Steiger, Negrete, and Marcil examined field dependence in alcoholics in relation to: years of drinking, severity of alcohol dependence, and emotional distress level. The instrument used was the EFT. This study produced three major findings:

1) Findings consistently suggest that there is an association between FD in alcoholics as measured by the EFT, and the chronicity of their excessive drinking. More severe chronic drinking was shown to be associated with greater FD. 2) FD in alcoholics appears to be related to the severity of their alcohol misuse. The findings indicate that heightened FD in alcoholics, is at least in part, a consequence of progressive and cumulative neural damage caused by alcohol misuse. 3) Emotional distress appears to maintain the alcoholics misuse and dependence. Pharmacological and psychological effects of alcohol may increase the alcoholics level of distress, so that more alcohol dependent individuals would show higher levels of negative effect (Steiger et al., 1985).

Perceptual vs conceptual information processing style

One way that level of conceptual coherence can be determined is by examining subject’s differing styles of
categorizing (organizing) variables. Due to the less than optimal conditions caused by the highly stressful situations many self-destructive persons experience (Reynolds, 1986; Diana, 1985; Goodwin, 1981, Susman, 1972) they should exhibit less than optimal performance given a categorizing or organizing task. This means that they will be restricted to a certain degree to the lower, less theoretically complex end of the continuum, and will experience some difficulty as they approach the complex theory (ad hoc) portion of the continuum. The reason for this is that their performance will not be at its optimal level because of their stressful situations.

Conceptual coherence is the degree to which a concept fits a person's background knowledge or naive theories of the world. These theories help to relate concepts in a domain and to structure the attributes that are internal in a concept (Murphy et al., 1985). Simply put, something is conceptually coherent to the degree that it makes sense to an individual and fits in with the knowledge the individual currently has about the world.

One method often used to achieve conceptual coherence is to group variables into meaningful categories. The grouping can be accomplished by either a similarity based approach, a theory based approach, or an ad hoc (goal derived) approach.
A) **Similarity (Taxonomic) Grouping**

Using a similarity based grouping method, variables form a coherent group if they are similar to each other in terms of features (attributes). An example of this type would place a robin, an eagle and a crow in the same group due to their like features: flight, wings, beaks, make nests etc. There are two main problems that arise from this explanation of groupings, that of weighting and that of attribute selection. The weighting asks how much attention (weight) is to be placed on a particular feature of a variable. For example, a penny and an automobile tire would be more similar than a basketball and a football if the feature "shape" had sufficient weight (Tversky, 1977; Murphy et al., 1985).

The other complication derives from the fact that no constraints have been placed on what is to count as a property in an analysis of similarity (Murphy et al., 1985). Suppose for example one wanted to list the attributes a Cadillac and a platypus had in common. Easily the list could be infinite: both do not dance well, both did not exist 50,000,000 years ago, both are flammable etc. Likewise the list of differences could also be infinite. However according to the similarity approach, as the number of like attributes increases so should the similarity between them, and therefore the assignment to the same conceptual category. Any two entities can be
viewed as similar or dissimilar by changing the criteria of what counts as a relevant attribute (Murphy et al., 1985). Similarity cannot be equated with, or measured in terms of, just possession of common characteristics (Goodman, 1972).

B) Theory Grouping

The theory based approach states that rather than grouping variables into categories by attribute matching (surface features) they are placed into categories according to a persons underlying knowledge of the world. An example of a theory based categorization can be seen in the case of ice, water and steam. On a perceptual (similarity) basis these variables would most likely be placed into three separate categories. Using a theory whereby you incorporate your knowledge of the physical changes temperature has on molecular structure, you could correctly place them into one category of related variables.

C) Ad Hoc (Goal-Derived) Grouping

A recent paper by Barsalou (1983) talked among other issues about two types of categorical groupings, similarity grouping and ad hoc (goal derived) grouping. The similarity based category is the same as the simple perceptual method described above. It has graded structure and well established category representation. By
graded structure Barsalou refers to a concept with three key components: 1) some examples are better examples of a category than others 2) there is the presence of unclear cases 3) nonmembers of a category vary in how similar they are to the concept of the category. When Barsalou (1983) speaks of well established category representation, he is referring to the establishment of the variables in the working memory. Examples of these common categories are "fruit" and "furniture", for which examples might be apple, orange, and chair, table respectively.

In categorical grouping there are three basic types of associations; concept-to-instance associations, instance-to-concept associations, and memory establishment. Strong concept-to-instance associations in common categories enable category concepts to easily activate category instances. Such top-down associations are useful when one is trying to generate category members during category production tasks or trying to recall information from a categorized list. For example, activating "furniture" might activate "chair", "table", "desk", and so on.

Strong instance-to-concept associations in common categories enable instances to activate their category concepts. Such bottom-up associations are useful for categorizing single instances and for organizing multiple
instances of the same category. For example, perceiving the words "oak," "maple," and pine will activate the superordinate category "tree," which can be used for purposes of categorization and organization.

The category concepts for common categories are well established in memory because the associations between a concept and its properties and associations between the properties themselves are well established. For example, "bird" is highly associated with "wings, flies, feathers" and so on, which are highly associated among themselves. To the extent a category is well established, it should be easier to locate in memory. This follows from the assumption that well established concepts are more "visible" to a memory scanning mechanism or from the assumption that well established concepts have more pathways into them from other information in memory (Barsalou, 1983).

Ad hoc categories are those derived for the purpose of achieving goals. While concept-to-instance association, and instance-to-concept associations and the category concepts are not well established in memory, ad hoc categories do possess graded structure as salient as that structuring common categories (Barsalou, 1983). The reason that the types of associations mentioned above are not well established in memory is that usually they are not thought of together often enough to become well
established in the working memory. That taxonomically organized lists are better recalled than lists of unorganized words has been demonstrated on numerous occasions (Bower et al., 1969). Most investigators have viewed the effects of taxonomic organization as reflecting the existence of pre-experimental structure in memory. Words that form common categories are easily organized during encoding because memory structures for these categories assimilate presented information. When such organization does not exist eg. a group of unrelated words), subjects have trouble organizing and retrieving a list because 1) subjects have less relevant structure to begin with and 2) the structures used may be created during learning and therefore not well established. An example using the ad hoc method could have a category of "things you would need if stranded on a desert island". Examples of such instances are clothes, matches, knives rope, food, etc. While within group associations are low, the graded structure is self evident.

Research by Melkman et al., (1981) shows that there is a clear developmental trend in categorization as evidenced by the use of simple vs. complex theories in categorization. Results of a study by Tversky (1985) showed a clear developmental trend from perceptual grouping to conceptual grouping as children’s age increased. Preschoolers frequently prefer to group objects by the
perceptual features underlying basic level categorization, whereas school-age children prefer object groupings based on the conceptual features underlying superordinate categorization (Bruner et al., 1966; Melkman et al., 1981). The taxonomic (theory based) method of categorization appears to be the more complex (more difficult) of these two methods of categorization.

The next logical step on this continuum of theoretical complexity would be the ad hoc or goal derived method described by Barsalou (1983). What we have now is perceptual grouping (simple theory), (Medin, 1983), conceptual grouping (more complex theory), (Murphy et al., 1985), and ad hoc grouping, (most complex theory), (Barsalou, 1983). Under most conditions individuals have free reign of this continuum, moving up and down this continuum of theoretical complexity which allows them to better understand and organize their world. This however is under optimal conditions.

"One of the most widely used explanatory devices using arousal for relating performance to stressors, is the Yerkes-Dodson law. This law postulates that for any task there is a level of arousal which is optimal, and which varies inversely with task difficulty" (Hamilton et al., 1979). Arousal levels, which are greater than or lesser than, the optimal level will produce inferior performance, i.e. an inverted U-shaped relation between
performances and arousal. This "law" can be related to stressors by means of the U-shaped relationship between stressor magnitude and the stress response, that was hypothesized by Levi (1972). In this model the stress response is lowest for intermediate levels of stimulation and increases for both stimulus deprivation and excessive stimulation.

**Cognitive rigidity vs flexibility**

Cognitive rigidity is best defined as a continuation of former behavior patterns when a change in the situation requires a change in behavior for more efficient functioning (Goldstein, 1978). According to this definition a person would be seen as being rigid if, as his/her life situation changed he/she failed to make necessary behavioral changes that would enable him/her to have more efficient functioning by performing at a level commensurate with that of his/her environment. This circumstance of course is contingent upon the person being free to choose, and not in a situation where certain mandated behaviors are dictated to him/her.

Self-destructive persons, as is the case with most people are free to continue in their current lifestyles or try to make changes in them. The lifestyles of most self-destructive persons are very stressful and dangerous and get more so the longer they continue with their
current lifestyles, because of the increased possibilities of premature death, physical abuse, familial breakdown, further criminal activities, drugs, etc. (Hall, 1972; Susman, 1972; Milt, 1976; Goodwin, 1981). Despite this, many, once initiated into these lifestyles continue, despite the plethora of related problems.

The fact that self-destructive persons often do not attempt to make positive, socially acceptable changes in their lifestyles, suggests that they may be cognitively rigid. Alcoholics and drug abusers for example often do not or cannot discontinue their current practices without the aid of outside intervention. This lends support for the contention that many self-destructive persons may be field dependent. Previous research has shown field dependence (as measured by the embedded figures test) to be related to rigidity (as measured by the einstellung test) (Breskin and Gorman, 1969).

Using the Einstellung problem as the measure of rigidity, studies investigating field articulation and ability to overcome set have tended to confirm the hypothesis that field-dependent persons are more rigid than field-independent persons (Fenchel, 1958). These studies however have confounded variables of intelligence and mathematical ability since they correlate with the EFT (Bieri et al., 1958) and with the Einstellung test (Levitt, 1956).
Breskin (1968) has described a non-verbal rigidity measure which required subjects to state the item he/she liked better when presented with a pair of visual stimuli. Under these conditions it was found that there was a significant relationship (alpha=.01) between rigidity and field dependence for women, but not for men (Breskin and Gorman, 1969).

**Tolerance vs intolerance of ambiguity**

There are several reasons that intuitively suggest that persons manifesting self-destructive behavior will also be intolerant of ambiguity, in a cognitive framework. "Intolerance of ambiguity is best defined as the unwarranted imposition of structure when the situation is unstructured" (Goldstein and Blackman, 1978). A person tolerant of ambiguity would be able to impose structure on a field and so perceive it as organized, when the field has relatively little inherent structure (Witkin, 1969). A person intolerant of ambiguity would have a greater degree of trouble with this. The results of research by Nebelkopf and Dreyer (1970) indicate a strong relationship between performance on the CEFT (Children's Embedded Figures Test), a traditional test of field articulation, and performance on the APT (Ambiguous Pictures Test) (Elkind, 1964). Research by Steiger et
al., (1985) shows field dependence to be related to alcoholism, a characteristic of one group of self-destructive persons. The ability to impose an initial structure and to restructure subsequently a given stimulus field into alternative configurations seems to be a relevant aspect of the behaviors defining the field-independent dimension of perceptual functioning (Nebelkopf et al., 1970).

In that it requires more cognitive energy to provide structure to ambiguous stimuli than to just leave it unstructured, it will require a higher level of cognitive functioning to structure it. An additional factor is that self-destructive persons are often under higher degrees of stress caused by their maladaptive lifestyles (Diana, 1985; Goodman, 1981; Hall, 1972; Susman, 1972). As is the case with any task, according to the Yerkes-Dodson Law, this unusually high level of arousal (stress) may lead to inferior performance (Hamilton et al., 1979). In this particular case inferior performance means having difficulty in applying structure to ambiguous stimuli (intolerance of ambiguity). If structure is applied the person will have difficulty viewing it in any other manner, or seeing any other relationships among the stimuli.

Socially speaking this may be disadvantageous for self-destructive persons in that they may have trouble
correctly understanding (getting the correct interpretation) dialogue with other persons. Research by Lefever and Ehri (1976) suggests that there is a moderate positive relationship between field dependence and difficulty at sentence disambiguation. These breakdowns in communication can lead to further alienation and social isolation of the self-destructive person resulting in reinforcement of his/her pathology.

**Hypotheses**

Based upon the above review of literature the following hypotheses are being put forward: Self-destructive persons (drug and alcohol abusers) will:

1) Appear more field-dependent than the control group of non drug & alcohol abusers

2) Evidence a more perceptual (simple theory) than conceptual (ad hoc) information processing style than the control group

3) Appear more cognitively rigid than the control group

4) Appear more intolerant-of-ambiguity than the control group

5) No significant differences are expected between the drug abuse group and the alcohol abuse group on any of the four measures
CHAPTER III
METHODOLOGY

Subjects

Subjects were identified from three different populations. Group one was composed of 20 male alcohol abusers, half of whom were black and the other half white, with a mean age of 27.6. This population was randomly sampled from a Central Ohio inhouse substance treatment program. Group two had the same demographic characteristics as group one but consisted of drug abusers rather than alcoholics and had a mean age of 28.7. Group three shared the same demographic characteristics as the other two groups but was a "normal" control group comprised of neither drug abusers nor alcoholics. They were all students currently enrolled in psychology 100 courses at The Ohio State University. They had a mean age of 24.2.

Although race is used as a variable in this study, no significant differences were hypothesized. A basic premise necessary for inclusion in the self-destructive category is that persons are experiencing high levels of stress and are living in conditions where their
current coping resources are not able to satisfy all of
the demands being placed upon them (Akbar, 1981). Any-
one, regardless of race, who fulfills this criteria is at
risk for inclusion in the self-destructive category. In
this study two races were separated in the analysis to
give the results greater external validity. The question
as to whether race has an influence on cognitive style
can be determined for both the self-destructive and non
self-destructive category.

Measures

The measure of rigidity vs flexibility was the 49
item rigidity inventory developed by Braen (1960)(See
Appendix A). The inventory questions are answered T/F.
It was concluded that the inventory possessed suitable
reliability and validity for measuring hypotheses about
manifest rigidity (Braen, 1960).

The measure of tolerance vs intolerance of ambiguity
was the Ambiguous Pictures Test (APT) (Elkind, 1964)(See
Appendix B). The test has seven pictures, each contain-
ing one ambiguous figure that can be reorganized into at
least two distinct configurations (Elkind, 1964). For
example, card one consists of a butterfly with a human
profile in each wing. Scoring for this card would in-
clude a butterfly, a face (left), and a face (right).
The APT score consists of the total number of configura-
tions identified from the 21 possible configurations in the seven pictures presented (Nebelkopf et al., 1970).

**Procedure for Ambiguous Pictures Test** - Each picture is to be administered individually and in a fixed order. Prior to presenting the pictures the examiner is to say, "I am going to show you some pictures, one at a time, and I want you to tell me what you see, what it looks like to you." Throughout the testing the experimenter's only comment is to be to the effect, "What do you see in this card?"

The measure of field articulation was the concealed figures test by Thurstone. The dependent measure consisted of the number of items correct (See Appendix C).

The measure of perceptual vs conceptual information processing style was measured by a test designed specifically for this purpose (See Appendix D). It differs from the conventional information processing tests (Tversky, 1985) in that it taps into the higher end of the continuum (goal derived categorization) (Barsalou, 1983).

The test was developed by first identifying 16 relatively ordinary super-ordinate categories. For each of these categories, five words were identified that were members of that particular category. It was then necessary to have these sixteen sets of words ranked ordered by each of twenty psychology 100 students. For each set of words, they were told to first look at the super-
ordinate category and then rank order them accordingly. The first word was to be the one they felt was least representative of that category, and the last, the most representative. For each category the words were then ranked by getting an average ranking from the scores of the twenty psychology 100 students. Before being presented to subjects the words for each category were placed in the order ranked by the 20 students. The first word was the worst example of a member of that category through the last word, which was the best example.

The test consisted of 16 sets of 5 words each, the first being a practice set. Each word was typed individually on a 3" by 5" card. Each set of words consisted of goal-derived examples of a given category. The words were set up such that the first word of each category was the worst, or least typical example of the category and the next a little better example of the category. They continued in this manner of ascending typicality up through the last (fifth) word of each set which was the best or most typical example of that particular category, of all the words in that group.

Procedure for Information Processing Test - Before placing any cards in front of the subject he was told that I would show him some cards with words printed on them. The cards on the cards are related in some important way. They have something in common that relates them. Study
them and then tell me in what important way the words are related to each other, what it is that the words have in common. He was then asked if he understood, if the subject said "no", the instructions were paraphrased. If the subject said "yes" a practice set before giving the actual test items.

Prior to the conceptual test being administered to subjects it was rank ordered by a "normal" group. Each of the 5 word groups of the 15 sets was ranked from least typical of the category to most typical of that particular category.

Administration - Cards #1 and #2 from the practice set were placed in front of the subject. The cards were placed in front of the subjects sequentially so that they went from his/her left to his/her right. Pointing to the appropriate card they were asked, "How are a chair and a table related, what do they have in common?" If the subject gave the correct answer, "furniture" he was told, "that right," and the other sets were administered. If the subject either 1) failed to give an answer after 10" or gave an incorrect answer, the next card was laid down and he was asked, "In what way are a "card #1," a "card #2," and a "card #3" related, what do they have in common?

The same instructions were followed until either a correct answer was given or all five cards in the set had
been attempted. If after all five cards had been set out and a correct response was still not given he was told, "See, they are related in that they are all pieces of furniture, that is what they have in common."

Before any more cards were presented they were told, "I am going to show you some more sets of cards. Like the ones you just saw, I want you to tell me what they have in common." Testing was started and continued until all 15 sets had been given. No further help was given after the practice set.

Scoring Criteria - The following scoring criteria was used: 1 point was scored for each card that was presented to each subject. If two cards were laid out at the time a correct answer was given the subject was given a score of 2 for that particular set of cards. This continued up to a score of 5, for giving a correct answer when five cards were laid out. A failure to give a correct answer received a score of 6. An individual's score is equal to the sum of the points earned on each of the 15 categories.

Testing Procedure

The tests were administered in two sessions, the first was a group session followed by individual sessions. In the group session subjects were first given the test of field articulation followed by the Manifest
Rigidity Inventory. In the individual sessions subjects were given first the test for intolerance of ambiguity followed by the perceptual vs. conceptual information processing measure.

Data analysis

An anova was performed to identify significant differences between each of the three groups, and according to race. This was followed by a Tukey Post Hoc Test which showed exactly which variables scored significantly differently from others. A Pearson Correlational Coefficient was then performed for all variables to look for significant relationships.
CHAPTER IV

RESULTS

Field dependence vs field independence

This measure showed statistically significant results both by race \( F(1,54) = 4.44, p < .04 \) and by condition \( F(2,54) = 18.37, p < .0001 \). Blacks appeared significantly more field dependent on this measure than did whites (See Table 1). The average score for blacks was -3.167 while the average score for whites was 9.9.

When the data are examined by condition a statistically significant difference can be seen with the control group scoring significantly higher than either the experimental drug and alcohol abuse groups (See Table 2). The average score for the control group was 29.65 with the mean scores for the drug and alcohol abuse conditions being -6.35 and -13.2 respectively. While this measure does not effectively discriminate between either of the two experimental groups it appears that the control group does respond to it in a different manner than either of the other groups. There is a correlation of -.486 between condition and the fd/fi measure. This suggests that people who are members of drug or alcohol
Table 1
Mean Field Independent Scores by Race *

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>-3.17</td>
<td>A</td>
</tr>
<tr>
<td>White</td>
<td>9.90</td>
<td>B</td>
</tr>
</tbody>
</table>

Table 2
Mean Field Independent Scores by Condition *

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>29.65</td>
<td>A</td>
</tr>
<tr>
<td>Drug</td>
<td>-13.20</td>
<td>B</td>
</tr>
<tr>
<td>Alcohol</td>
<td>-6.35</td>
<td>B</td>
</tr>
</tbody>
</table>

* Means with the same letter are not significantly different
abuse group will appear to be more field dependent than a control group.

While not very strong there was also a small negative correlation of .2554 between having a largely perceptual information processing style and being field independent. This suggests that persons who are largely conceptually oriented may to some degree have an easier time manifesting field independence.

**Perceptual vs conceptual information processing measure**

While blacks on this measure appeared more conceptually oriented then whites [$F(1,54) = 2.00, p < .05$] the difference was not significant (See Table 3). The average score for blacks was 55 and the average score for whites was 52.633.

As predicted this measure showed a significant difference between the scores of the control and drug abuse conditions [$F(2,54) = 4.88, p < .0113$]. While the control group also scored lower than the alcoholic subjects, this result was not significant (See Table 4). The average score for the control group was 51.750. While this low score indicates that the control group responded more conceptually, to a significantly larger degree than the drug abuse group (mean = 57.00) none-the-less it did not differ significantly from the alcoholic
### Table 3
Mean Information Processing Scores by Race *

<table>
<thead>
<tr>
<th>Race</th>
<th>Score</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>55.00</td>
<td>A</td>
</tr>
<tr>
<td>White</td>
<td>52.63</td>
<td>A</td>
</tr>
</tbody>
</table>

### Table 4
Mean Information Processing Scores by Condition *

<table>
<thead>
<tr>
<th>Condition</th>
<th>Score</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>51.75</td>
<td>A</td>
</tr>
<tr>
<td>Drug</td>
<td>52.20</td>
<td>A</td>
</tr>
<tr>
<td>Alcohol</td>
<td>57.30</td>
<td>B</td>
</tr>
</tbody>
</table>

* Means with the same letter are not significantly different
condition score of 52.200. Both of these scores however did differ from the drug abuse condition mean of 57.500.

**Cognitive rigidity vs flexibility measure**

The rigidity measure showed no significant differences by either race \([F(1,54) = .14, p < .05]\), condition \([F(2,54) = 1.04, p < .05]\), or race by condition \([F(2,54) = 1.07, p < .05]\). For blacks the mean score was 28.40 and for whites the mean score was 27.87. With alpha = .05 no significant differences were found between the two groups (See Table 5). There were also no significant differences found on this measure between any of the three conditions (See Table 6). The mean score for the control group was 28.4, for the alcohol group it was 26.75, and for the drug abuse group it was 29.25. The results suggest that this variable is unable to differentiate by either race or treatment condition. This variable showed a small positive correlation with the information processing measure. High levels of cognitive rigidity were associated with a perceptual information processing style. The correlation between these two is .25. While low, it does suggest that some form of relationship exists. Those with a rigid, non yielding view of the world tend to also see it more perceptually.
Table 5

Mean Rigidity Scores by Race *

<table>
<thead>
<tr>
<th>Race</th>
<th>Score</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>28.40</td>
<td>A</td>
</tr>
<tr>
<td>White</td>
<td>27.87</td>
<td>A</td>
</tr>
</tbody>
</table>

Table 6

Mean Rigidity Scores by Condition *

<table>
<thead>
<tr>
<th>Condition</th>
<th>Score</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>28.40</td>
<td>A</td>
</tr>
<tr>
<td>Drug</td>
<td>26.75</td>
<td>A</td>
</tr>
<tr>
<td>Alcohol</td>
<td>29.25</td>
<td>A</td>
</tr>
</tbody>
</table>

* Means with the same letter are not significantly different
Tolerance vs intolerance of ambiguity

This measure showed no significant differences in scores by race \( F(1,54) = 0.00, p < .05 \) (See Table 7). A major hypothesis of the study was confirmed however in that the drug and alcohol groups \( F(2,54) = 13.73, p < .0001 \) did score significantly lower in their tolerance of ambiguity than did the control group (See Table 8).

The average score for blacks on this measure was 11.9667 while the average score for whites was 12.00. With alpha=.05 this result was not significant. Between conditions the average score for the control group was 14.7 with the average scores for the alcoholic and drug abuse conditions being 10.6 and 10.65 respectively. There was a correlation of -.496 between condition and the ambiguity measure. The control group scored significantly higher on this measure than did either of the other two groups. This suggests that there is some moderate relationship between being intolerant of ambiguity and membership in the self-destructive category.

The largest correlation found between the dependent variables was one of .519 between tolerance of ambiguity and field independence. This suggests that people who are able to apply structure to unstructured situations or function in unstructured settings are likely to be able to focus their attention on particular objects of interest, regardless of any confusion or other
Table 7
Mean Ambiguity Scores by Race *

|       |      |  
|-------|------|-----|
| Black | 11.97| A   |
| White | 12.00| A   |

Table 8
Mean Ambiguity Scores by Condition *

|       |      |  
|-------|------|-----|
| Control | 14.70 | A   |
| Drug | 10.60 | B   |
| Alcohol | 10.65 | B   |
| Alcohol | 10.65 | B   |

* Means with the same letter are not significantly different
distracting background "noise." These people appear to be able to concentrate and function effectively even in situations where underlying fields detract from the clarity of a particular stimulus.

The correlation between having a perceptual information processing style and exhibiting tolerance of ambiguity is -.316. This suggests that people with a more conceptual information processing style will also be more tolerant of ambiguity than those with a more perceptual style.

Correlations Between Condition and Dependent Variables

Significant correlations were found between condition and three of the four dependent variables. No significant correlations were found between condition and cognitive rigidity. A correlation of -.496 was found between condition and ambiguity, and a correlation of -.486 between condition and field dependence. A smaller correlation of .35 was found between condition and conceptual or perceptual information processing style.

Correlations Between Race and Dependent Variables

A Pearson Correlation Coefficient was performed to examine the relationships between the variables. There were no significant correlations found between race and any of the dependent variables. There was a small but
statistically significant correlation between race * fb/fi (r=.21), and a small negative correlation between race * c/p (r=-.174). None of the other correlations were larger than .05.
CHAPTER V
DISCUSSION

Field Dependence vs Field Independence

The self-destructive group also manifested field dependence to a significantly higher degree than did the control group. The average score for the self-destructive group on this measure was -9.8. The mean score for the control group on this same measure was 29.65. These results suggest that the self-destructive group will have an extremely difficult time at tasks that require them to pick a particular variable out of a background field. We would expect people in this group to have difficulty in picking out the most constructively feasible option out of a set of possible choices. Such an inability can present problems in everyday life where critical decisions need to be made, daily, while faced with distracting stimuli. The anxiety and frustration that come with such a decision style, could contribute to self-destructive tendencies.

Research by Witkin et al. (1954) found that individuals designated field dependent were found to be passive and to have poor impulse control, low self-esteem, and an
undifferentiated body image. Witkin et al. (1971) found the field dependent person likely to perceive a particular field as less discrete and structured, have an indefinite sense of body boundary, a lower sense of individuality, externalized standards and as more likely to use primitive indiscriminant defenses such as massive repression and denial. Research also suggests a relationship between field dependence and a need for social approval Jackson (1956).

The field dependent person tends to have difficulty defining borders, both externally and internally. Externally, they may have difficulty separating an item from the field in which it occurs. Internally, the line that separates the individual from others may not be clearly defined, and may foster the need for social approval (Jackson, 1956). If this approval is not given they may achieve the same effect through repression and denial. These are techniques that serve to strengthen the self-destructive disorder. When satisfaction and happiness cannot gleaned in the world in a typical manner alcohol and drugs can be used to give the person the illusion of having control of his/her life once again. By artificial means they are introduced to a cheerier world, one in which they are in control and have no need to depend on others or seek their approval (Pittman & Glidewell, 1959).
Perceptual vs Conceptual Information Processing Style

An unexpected finding arose when looking for differences between groups in terms of conceptual vs perceptual information processing style. Someone who primarily processes information using a perceptual style is likely to derive meaning from stimuli by using its superficial characteristics to derive meaning, rather than looking for underlying themes and meanings below the surface. A person with a primarily conceptual information processing style is able to switch between the two styles as dictated by the specific situation. With simple unambiguous stimuli, meaning can often be derived by mere examination of superficial characteristics. This person however is able to think about situations at a more abstract level if called for and is able to look "below the surface" and derive meanings often unavailable by mere examination of surface features (Barsalou, 1983).

As expected, the control group appeared more conceptual on the task than either of the other two groups. The control group scored significantly higher statistically than the alcoholic group but showed no statistically significant difference from the drug abuse condition. This finding suggests that of the three groups drug abusers will tend to think at a less cognitively complex level than either of the other two groups. They may tend to look at things more superficially and thus fail to
extract the full meaning from the environment, cognitions, actions, verbalizations, etc. In processing information they may take incoming stimuli at face value and never see the deeper meaning that lies just below the surface.

The control and alcoholic groups for some reason do not differ significantly on this measure and appear to be able to process information at the more conceptual end of the continuum. These people appear to be able to order certain areas of their lives and are more likely to be able to read below the surface and get at the deeper meaning of incoming stimuli. In their relationships they may experience fewer problems in that they may not naively take everything at face value, but are able to more closely scrutinize incoming information. Possibly what then would differentiate the control and alcoholic groups on this dimension is what they do with the deeper information once processed.

**Tolerance vs Intolerance of Ambiguity**

The self-destructive subjects appeared significantly more intolerant of ambiguity than the control group. The mean score for the self-destructive group was 10.625, while the average score for the control group was 14.7. This finding suggests that the self-destructive group may experience difficulty in situations where there is little
structure and have added difficulty if restructuring of that same situation is required. This cognitive style could manifest itself in a number of ways. In interpersonal relationships, there could be tendencies not to accept or see changes in others, for the better or worse, due to the difficulty self-destructive persons appear to show when restructuring or reevaluating of previously structured cognitions is required. The initial impression received could be the only one accepted. Intraper-sonally, they could have these same thoughts about themselves. Being uncomfortable with change, this need for definiteness could be a key factor in the proliferation of self-destructive behaviors and cognitions.

Frenkel-Brunswik (1954) defined intolerance of ambiguity in part as "... undue preference for symmetry, familiarity, definiteness, and regularity; tendency toward black-white solutions, oversimplified dichotomizing, unqualified either-or solutions, premature closure, perseveration and stereotypy ..."

People in this group might be expected to perform poorly in tasks that are not rigidly defined possessing clear correct or incorrect answers. In an attempt to regiment they may oversimplify or block out crucial bits of information in an attempt to achieve an either-or, black white status. This cognitive style can be extreme-ly anxiety provoking in that the world is not just black
and white. Seeing things rigidly makes it likely that one will receive only part of the information available at a given time. Intolerance of ambiguity can lead one to misinterpret incoming stimuli, by allowing the processing of only "half of the story."

Race and Cognitive Style

The study showed no differences between black and white subjects in terms of cognitive rigidity vs flexibility. This suggests that overall these two groups perform about equally well at modifying behaviors and cognitions to accommodate situational and environmental changes. Both groups would be expected to adapt to particular situational needs at about the same level of effectiveness.

No significant differences were found between blacks and whites in terms of their levels of tolerance or intolerance of ambiguity. Both groups appear to be able to apply structure to previously unstructured situations and look at the world in more than one way as called for in different situations at about the same level of competence. The measure of field dependence vs field independence showed a significant difference between the two groups at the alpha = .05 level. Blacks appeared significantly more field dependent than did the white subjects in this study. This finding supports research
by Shade (1986) in which the same significant result was reported. Despite the small correlation of .216 between race and level of field dependence the finding is still significant. From these results we would expect blacks to score differently than whites in situations where the task is to pick a particular stimulus out of a field. Outside of the laboratory setting we might expect to see these individuals less able to easily pick a particular viable option out of a set of possible choices.

In examining the relationship between race and conceptual vs perceptual information processing style, blacks appeared more perceptual, though not to a significant degree. The average score for blacks on this measure was 55 while for whites the average score was 52.63. This showed a difference, but a very slight one. Both groups appear to be able to process information at both the perceptual and conceptual ends of the continuum with approximately equal levels of proficiency.

Limitations of study

This study is limited largely in regard to its degree of generalizability. A major shortcoming is that the study was done with only male subjects. It would be unwise to assume that females with the same demographic characteristics as the males would produce the same scores on the various measures.
Another limitation is in terms of the race of the subjects. While the only significant difference between blacks and whites on the four variables was on the measure of field dependence this does not imply that other races will score in a similar manner.

The subjects in the study were all between 20 - 35 years of age. Since some measures of cognitive style have been shown to vary with age (Witkin, 1954, Axelrod and Cohen, 1961) it is not possible to assume that the cognitive manifestations of the groups in the study will be analogous to those of persons in different age groups.

The experimental group was gleaned from an inpatient treatment facility. It is possible that self-destructive persons who are not enrolled in any form of treatment program or who partake of an outpatient type program, could have significantly different cognitive styles. The very fact that they are not enrolled in such a program for a very detrimental problem, could itself be evidence of this.

A final limitation would be in the area of education/intelligence. Research suggests that there is a relationship between some cognitive styles and intelligence (Witkin et al. 1971). For example correlations between field independence and intelligence are mostly in the .40 - .60 range (Goldstein and Blackman, 1978). Subjects were not stratified on this dimension which could
have a profound effect on the way subjects appeared on the various measures of cognitive style.

Future research implications

Initial research in this area should address the limitations evident in this study. Specifically, research should be done that looks at the effects of sex, race, education /intelligence, age and current treatment vs non treatment seeking status on various cognitive styles of interest. Once this solid foundation has been laid there are three other research areas that are paramount.

As Vernon (1973) and Watchel (1972) point out, cognitive style refers to a pattern of strategies. This pattern includes not only traditional strategies (such as the cognitive styles examined in this studies) but also includes interpersonal interactions. It is necessary to get a measure that indicates the persons perceived view of the world. In that how a person views the world determines to some degree how he/she will interact with and in it, an indication is needed of how that persons environment is being construed.

To get a more complete picture of which cognitive strategies are being used it may be desireable to examine cognitive styles other than the four in this study. Others of interest might include leveling/sharpening, and impulsivity/reflectivity.
Two other researchable areas are closely related. They deal with the areas of therapy for self-destructive persons and the modifiability of detrimental cognitive styles, and looking for a causal relationship between certain cognitive styles and certain self-destructive behaviors, or vice-verse.

Self-destructive persons in this study were shown to differ significantly from the control group in that they were more field dependent, less tolerant of ambiguity, and more likely to use a perceptual rather than a conceptual information processing style. This finding implies that in dealing with everyday living situations, self-destructive persons may utilize a different set of cognitive strategies than non-destructive persons. In the therapy setting, it would be useful to know if persons manifesting certain cognitive styles responded more positively to certain forms of therapy and treatment, rather than others. This additional knowledge could aid the therapist greatly in providing the optimal service to self-destructive persons. Research on the modifiability of cognitive styles would provide even more direction to the therapist by letting him/her decide more easily whether to focus more on modifying the particular cognitive strategy or take a more behaviorally oriented approach geared toward dealing with a particular behavior or cognition directly.
The question still remains, "Do certain cognitive styles predispose people to manifest certain self-destructive behaviors, vice-versa, or is there no real relationship between the two?" Research in this area would be extremely useful in that if a significant relationship were to surface, it might be possible to predict self-destructive behavior to a certain degree, and allow steps to be taken to circumvent it. In the event that no significant relationship was manifested, valuable information would still be gained about the cognitive style of the self-destructive personality.
APPENDIX A

MANIFEST RIGIDITY INVENTORY
1. I often act impulsively just to blow off steam.

2. I usually do as well at things as I expect to.

3. I am so concerned about the future that I do not get as much fun out of the present as I might.

4. I find that a well ordered life with regular hours and established hours and regular routines is congenial to my temperament.

5. I am poor at repartee, quick retorts, and snap judgments.

6. My plans have frequently seemed so full of difficulties that I felt I would have to give them up.

7. I often imagine myself accomplishing great deeds.

8. I prefer to "go steady" than to date different people.

9. I am a very patient person.

10. When I am interested in something my mind rarely wanders.

11. I enjoy scientific articles more than poetry.

12. I often act on the spur of the moment without stopping to think.

13. I get mad easily and get over it quickly.

14. Something that interrupts me while I am working has to be pretty important to prevent me from returning to the work.

15. I often feel that my heart is as good a guide as my head.

16. I consider a matter from every standpoint before I form an opinion.

17. In general I try to plan my activities in a careful and methodical way.

18. I know what I want to say without having to fumble about for the right word.

19. I am usually consistent in my behavior, go about my work in the same way, frequent the same preferred places, follow the same routes, etc.
20. Sometimes I start talking without knowing what I am going to say.

21. I crave variety and contrast, enjoy anything for a change.

22. I find it difficult to exclude irrelevant ideas and pin myself down to one line of thought.

23. I often wonder why human life exists and what its future is.

24. I often daydream.

25. On the whole I would say I am more realistic than idealistic.

26. Organizing a good system and sticking to it is the only way I can get things done efficiently.

27. I work for tangible, clearly defined results.

28. I have more trouble concentrating than others seem to have.

29. I do most things slowly and deliberately.

30. I have a ready word for most occasions.

31. I dislike making hurried decisions.

32. I am quick to discard the old and accept the new: new fashions, new methods, new ideas.

33. I usually get through my work efficiently without wasting time.

34. I am slow to fall in love.

35. I enjoy things more when I plan them in advance.

36. I stick to a plan of action which I have decided upon.

37. I would prefer to eat large regular meals than eat often at irregular times during the day.

38. I frequently dream.

39. When I tackle a subject, I read what others have written about it before I begin.
40. I accept the world as it is and do not try to imagine how it might be.

41. If I had my choice I would take psychological novels to adventure stories.

42. It is easier for me to deal with concrete facts in one special field than with general ideas about man or nature.

43. I frequently start new projects without waiting to finish what I have been doing.

44. I often experience rather marked "swings of mood" from elation to depression.

45. I organize my daily activities so that there is little confusion.

46. I am apt to judge people in terms of their tangible accomplishments.

47. I am often bothered by forgetting where I put things.

48. I find that my tastes and sentiments have remained relatively constant.

49. I lack simplicity, consecutiveness, and logical sequence when I try to explain something to someone.
APPENDIX B

AMBIGUOUS PICTURES TEST
APPENDIX C

FIELD DEPENDENCE/FIELD INDEPENDENCE TEST
APPENDIX D

MILLET INFORMATION PROCESSING MEASURE
Practice Set

A. FURNITURE
   chair, bed, stool, table, couch

1. DETECTED BY SENSES
   loud, sweet, bright, bitter, smooth

2. FISHING
   sandwiches, worms, hook, life jacket, boat

3. BEACH
   crabs, umbrella, bonfire, shell, sand

4. LIGHT
   book of matches, the moon, firefly, kerosene lantern
   flashlight

5. TIME
   shadows, month, stopwatch, sundial, alarm clock

6. PROTECTION / DEFENSE / WEAPONS
   baseball bat, mace, dog, alarm, karate

7. PLACES TO HIDE MONEY
   mattress, shoebox, vault, purse, bank

8. COMMUNICATION / NEWS
   smoke signals, mail, morse code, radio, telephone

9. WAYS TO MAKE MONEY / JOBS
   driving a truck, counterfeiting, playing football,
   secretary, waiter

10. SCHOOL
    pencil sharpener, bus, library, chalkboard, teacher

11. TRANSPORTATION
    wheel, dogsled, wings, spaceship, horse

12. WINTER
    hibernation, ice skating, christmas carols,
    snowtires, cold

13. SPORTS
    goalpost, swimming trunks, stopwatch, bowling alley,
    whistle

14. ART
    charcoal, music, poetry, chalk, dancing
15. CAMPING
    knife, mosquitos, rope, shovel, tent
LIST OF REFERENCES


