INFORMATION TO USERS

This reproduction was made from a copy of a document sent to us for microfilming. While the most advanced technology has been used to photograph and reproduce this document, the quality of the reproduction is heavily dependent upon the quality of the material submitted.

The following explanation of techniques is provided to help clarify markings or notations which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting through an image and duplicating adjacent pages to assure complete continuity.

2. When an image on the film is obliterated with a round black mark, it is an indication of either blurred copy because of movement during exposure, duplicate copy, or copyrighted materials that should not have been filmed. For blurred pages, a good image of the page can be found in the adjacent frame. If copyrighted materials were deleted, a target note will appear listing the pages in the adjacent frame.

3. When a map, drawing or chart, etc., is part of the material being photographed, a definite method of "sectioning" the material has been followed. It is customary to begin filming at the upper left hand corner of a large sheet and to continue from left to right in equal sections with small overlaps. If necessary, sectioning is continued again—beginning below the first row and continuing on until complete.

4. For illustrations that cannot be satisfactorily reproduced by xerographic means, photographic prints can be purchased at additional cost and inserted into your xerographic copy. These prints are available upon request from the Dissertations Customer Services Department.

5. Some pages in any document may have indistinct print. In all cases the best available copy has been filmed.

University Microfilms International
300 N. Zeeb Road
Ann Arbor, MI 48106

Liddell, Emmons Blaine, Jr.

CHANGES IN PERCEIVED LOCUS OF CONTROL AND SELF-REPORTED ANXIETY IN ALCOHOLICS DURING TREATMENT

The University of Arizona M.A. 1985

CHANGES IN PERCEIVED LOCUS OF CONTROL AND SELF-REPORTED ANXIETY IN ALCOHOLICS DURING TREATMENT

By

Emmons Blaine Liddell, Jr.

A Thesis Submitted to the Faculty of the

DEPARTMENT OF COUNSELING AND GUIDANCE

In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF ARTS

In the Graduate College

THE UNIVERSITY OF ARIZONA

1 9 8 5

STATEMENT BY AUTHOR

This thesis has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his or her judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: Emmons Blaine Liddell Jr.

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

Betty J. Newlon
Betty J. Newlon
Assistant Professor

April 23, 1985
Date

ACKNOWLEDGMENTS

This thesis would not have been possible without the assistance of some very important people, to whom I wish to express my thanks.

Dr. Betty Newlon, my academic advisor, thesis director and mentor provided guidance, support and valuable feedback throughout the course of this project.

Dudley Bush served as a member of the thesis committee and provided access to the participants who took part in this study as well as information on methodology. Dr. Richard Erickson, the third member of the thesis committee also provided valuable assistance.

Dr. Glenn Nicholson made the results and interpretations sections possible by providing statistical and research design information.

Gratitude is extended to Leann Newman who transformed this thesis into type, the counselors who allowed me to test their clients, and the clients who participated in this research.

Finally, gratitude and thanks go to my wife Carrie Montgomery for her continued support and encouragement, throughout the course of this project as well as all of the other areas of my life.

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

This study attempted to duplicate earlier findings on locus of control among alcoholics in treatment. In addition, measuring on alcoholics' perceived level of anxiety was used to look for consistencies or discrepancies between reported levels of personal control and distress. It was hypothesized that decreases in both reported levels of personal control and anxiety would decrease as a function of time spent in treatment.

The participants in this research consisted of twenty-one alcoholics enrolled in one of three treatment groups. Data on members of each treatment group were gathered, using Rotter's Internal versus External Control of Reinforcement Scale to assess perceived personal control, and the Symptom Checklist to measure perceived anxiety. Analyses of variances on the responses of both the Rotter and SCL-90 scales failed to show any significant differences among the three treatment groups. The experimental hypotheses were not confirmed. The findings and their implications are discussed.

CHAPTER 1

INTRODUCTION

Over the past ten years there has been an increased emphasis on the problem of alcoholism. Organizations such as MADD (Mothers Against Drunk Drivers), famous people who have publically admitted to problems with alcoholism (i.e., Betty Ford and Mary Tyler Moore), and an increasing number of rehabilitative programs which have recently come into existence have helped to draw attention to alcoholism. It has become a very popular, as well as a controversial topic.

Although there has been a large amount of research on alcoholism, it still remains unclear why some individuals become dependent on this drug while others do not. The debate as to whether alcoholism is genetically transmitted, a product of poor social learning and environment or some other set of factors rages on with no clear-cut resolution. One factor that does seem to be clear and distinguishes an alcoholic from one who is not is a loss of control over the ability to drink moderately. If a person loses control over the ability to drink normally, it is possible that a loss of control over other aspects of life might also occur.

Personal control as defined in the literature by Rotter (1966) and others consists of internal and external components. Leftcourt (1966) defined these two elements as follows:

> Internal control refers to the perception of positive and/or negative events as being a consequence of one's own actions and thereby under personal control; external control refers to the perception of positive and/or negative events as being unrelated to one's own behavior in certain situations and, therefore, beyond personal control (p. 90).

Research in the area of locus of control has predominately utilized J. B. Rotter's Internal versus External Control of Reinforcement Scale (1966), a twenty-nine question forced-choice scale dealing with areas of personal control, as well as control of societal and world events. Several of the studies using this scale produced the interesting conclusion that although the populations being assessed were primarily in-patient alcoholics who had lost control over their lives and especially their drinking, the resulting scores reflected a more internal, rather than external, locus of control (Obitz and Oziel, 1978; O'Leary, Rosenhow, and Donovan, 1975; O'Leary, Donovan, Hauge, and Shea, 1975, Oziel and Obitz, 1972; Gozali and Sloan, 1971; Goss and Morosko, 1970). An example of this phenomenon is illustrated in the following study.

Obitz and Oziel (1978) administered Rotter's scale, along with a specially developed control of drinking measure (Keyson and Janda, 1972), to a group of fifty alcoholics who successfully completed a two-month rehabilitation program. The clients were tested during the first week and again following the seventh week of treatment. A group of fifty non-alcoholics was also employed to act as controls, and tested in the same manner as the alcoholics. The results seemed to indicate that the alcoholics became "significantly more internal with

regard to their behavior in general and their drinking behavior in particular" between week one and week seven, while the non-alcoholics showed no significant changes in perceived control between the first and second administrations of the two scales. The authors went on to suggest that the perceived changes in the alcoholic group may have been a function of treatment more so than a "predisposing personality dimension".

O'Leary, Rosenhow and Donovan (1975) conducted a study with alcoholics and attrition rates from treatment. In addition to acknowledging that a shift toward an internal locus of control took place they also made the following observation: "Increased internality may have reflected overconfidence, a degree of belief in their own control that was unwarranted by their actual situations or abilities (p. 90)".

Gozali and Sloan (1971) also concluded that a group of alcoholics were significantly more internal when compared with a group of non-alcoholics and that "this may account for their irrational persistence in believing they can control their drinking (p. 159)".

O'Leary, Donovan, Hague, and Shea (1975) went one step further to test for shifts toward internality by dividing Rotter's scale into two sections: factor I, which deals with personal control and includes questions posed in the form of "I" statements; and factor II, including those statements which focus on societal and world events. The subjects in this particular study consisted of forty male Veteran's Administration patients who received the Rotter scale as part of a larger battery of tests approximately one-and-a-half weeks after admission and again

following six weeks of intense small group treatment. The authors' findings suggested shifts toward internality on both factors, although respondents shifted significantly only on factor I (personal control) statements.

Obitz (1978), in his research on locus of control in alcoholics undergoing treatment investigated the scores obtained on Rotter's scale and came up with the following observation:

> It is suggested on the basis of these data, the more internally controlled alcoholic should be defined by a locus of control score of 6 or below, the more externally controlled alcoholic by a score of 7 or above (p. 380).

Many of the studies seem to indicate that alcoholics undergoing treatment do tend to respond to Rotter's scale in a more internal direction. Henrichsen (1976), however, posed the following assessment which is worth noting: "Some alcoholics may be 'defensive internals' -- their I-E (internal control) scale scores indicate an internal locus of control but they behave as though externally oriented (p. 21)".

If an individual does indeed answer Rotter's scale in a defensive manner a second dimension may need to be assessed so that consistencies or discrepancies between individual locus of control may be compared.

A related area to locus of control is an individual's perceived level of anxiety. Watson (1967), employing 648 subjects, found that those who scored as external on Rotter's scale also tended to score as external on both the Taylor Manifest Anxiety Scale (TMAS) and a device known as the Test Anxiety Scale.

In another early study Ray and Katahn (1967), in addition to replicating Watson's findings, went on to suggest that the two anxiety scales (TMAS, TAS) and Rotter's scale were measuring two separate, yet correlated variables. They further stated, "A feeling of lack of control over the outcome of one's actions is associated with anxiety".

Although both the Watson and Ray and Katahn studies showed a positive correlation between locus of control and perceived anxiety, the subjects used were college students.

O'Leary, Donovan and Hague (1974) attempted to find a correlation between locus of control and anxiety with an alcoholic sample. In addition to utilizing both the Taylor (TMAS) and Rotter scales a third device known as the Activity Preference Questionnaire (APQ) was added as an unobtrusive measure of anxiety. O'Leary, Donovan and Hague found a significant correlation between the Rotter scale and the APQ, supporting Ray and Katahn's earlier suggestion that locus of control and anxiety are separate but correlated variables. They also cited a relationship between Rotter's scale and the Taylor Manifest Anxiety Scale (TMAS), although there was uncertainty as to whether the TMAS measured anxiety, neuroticism or self-esteem.

This present study will attempt to duplicate some of the earlier findings on locus of control; namely, that subjects will move toward an increased perception of internal control. In addition, measuring a subject's perceived level of anxiety will be used to look for any consistency between changes in locus of control and level of distress.

Statement of the Problem

This study explored whether or not alcoholics changed their perception of personal control and perceived anxiety as the direct result of having spent time in an outpatient treatment setting. The specific questions addressed were: 1) Will an alcoholic express a greater sense of personal (internal) control and a decrease in perceived anxiety, during time of treatment? 2) Will an alcoholic express a decrease in personal (external) control coupled with an increase in anxiety during time of treatment? or 3) Will no significant change be evidenced by an alcoholic during time in treatment?

Research Hypotheses

This present study attempted to duplicate some of the earlier findings on locus of control; namely, that subjects involved in treatment would move toward an increased perception of internal control. In addition, measuring an individual's perceived level of anxiety was used to look for consistency between changes in locus of control and level of anxiety. It was hypothesized that as a subject's perceived level of control became more internalized, his/her level of anxiety would decrease. Specifically:

1. As a function of time spent in alcoholism treatment, individual ratings on the internal versus external locus of control scale will move significantly in the internal direction; that is, subjects will see themselves as having more personal control over their lives. Scores for individuals in the outpatient group will be significantly more internal than those in the

pre-outpatient condition, but significantly more external than those subjects who are members of the aftercare group.

2. As a function of time spent in alcoholism treatment, subject ratings on the Symptom Checklist or SCL-90 (Derogatis and Cleary, 1977), will become significantly lower; that is personal anxiety levels will decrease. Scores for individuals in the outpatient group will be significantly lower than those in the pre-outpatient condition, but significantly higher than those who are members of the aftercare group.

Definition of Terms

The following is a list of important terms used in the context of this study:

Alcoholic -- A person who has lost control over the ability to drink liquor in a socially acceptable fashion, or is unable to use alcohol moderately.

Anxiety -- A vague, unpleasant feeling that something bad is about to happen. Freud identified three types of anxiety: moral anxiety, or guilty conscience; neurotic anxiety, or the fear that defense mechanisms will break down and objectionable impulses will be released; and reality anxiety, or justified fears in everyday living (McNeil and Zubin, 1977).

Phobic reaction (anxiety) -- An anxiety state characterized by unreasonable fears (Kagan and Havemann, 1976).

Locus of control -- The idea that the world is either controlled by one's actions (internal) or outside forces (external).

Pre-outpatient treatment -- A group which helps to prepare the alcoholic for outpatient treatment by such methods as reinforcing abstinence, attendance at Alcoholics Anonymous meetings, etc.

Outpatient treatment -- A group which focuses on personal issues that are somehow tied to the alcoholic's drinking history. The goal here is to help the individual learn to alter situations which previously reinforced the urge to become intoxicated.

Aftercare -- A group designed to help the alcoholic re-enter the world as a functioning, sober individual.

Assumptions

The following assumptions were made during the course of this research:

1. As alcoholics establish a period of sobriety, they see themselves as being more in control of their everyday lives.
2. Participants truthfully answered instruments.
3. The instruments were reliable and valid for use with this population.

This chapter includes a summary of important literature relating to alcoholism and treatment. It also includes the statement of the problem, research hypotheses, definition of terms, and assumptions.

Chapter 2 will discuss procedures, methodology, subjects, and instruments used in the study.

CHAPTER 2

PROCEDURES

This chapter discusses the procedures following in testing the hypotheses of the study. The areas of focus include: methodology, subjects, variables, description of the instruments, procedure, research design, and statistical methods.

Methodology

The following study is an empirical analysis of changes in a subjects level of perceived control and anxiety as the result of treatment in an outpatient alcoholism clinic.

Subjects

The subjects in this study consisted of twenty-one individuals enrolled as outpatients at an alcohol treatment center in the Southwest. Those employed in this study were members of one of the following groups: 1) pre-outpatient, where individuals were prepared for group counseling by education, Alcoholics Anonymous meetings, etc., 2) outpatient, where personal issues affecting the life of the alcoholic were thoroughly examined, and 3) aftercare, the phase at which the alcoholic was prepared to re-enter the world as a sober individual.

Originally thirty-six people answered both the Rotter and Symptom Checklist (SCL-90) surveys but fifteen were eliminated. Of

these fifteen, six were co-alcoholics (spouses or friends who were not alcoholics); two had a history of drug usage in addition to alcohol and these were eliminated to minimize the possibility of locus of control or anxiety scores being influenced more by chemical than alcohol abuse; and two began but subsequently decided not to complete the Rotter and SCL-90 questionnaires. The remaining five questionnaires were randomly eliminated. This occurred to prevent overinflation of results during the analysis of variance procedure which often happens when groups of unequal size are compared.

Variables

The independent variable in this study was a subject's membership in one of three groups: pre-outpatient, outpatient, or aftercare. The dependent variables in this case were changes in locus of control and level of anxiety.

Description of the Instruments

The instruments used in this study consisted of Rotter's Internal versus External Control of Reinforcement Scale (1966), as well as the Symptom Checklist, or SCL-90, a device developed by Derogatis and Cleary (1977).

Rotter's scale consists of twenty-nine questions dealing with items of internal, or personal control (factor I) and control over societal and world events (external control or factor II). These items are in a forced-choice format and scored in the external direction, meaning that the higher the score, the more external the testee's

perceived locus of control. The following reliability correlations have been cited: internal (.65 — .79); test-retest (after one month — .79, two months — .55). The following information is provided concerning validity: Rotter's scale correlates with such dimensions as anxiety, dogmatism, mistrust, maladjustment and social influence (Rosenhow and O'Leary, 1978; Joe, 1971).

The Symptom Checklist (SCL) 90 will be used to measure anxiety (Derogatis and Cleary, 1977). The SCL-90 is a ninety-item, self-report scale designed to reflect the psychological status of the testee. Although its primary design has been for psychiatric centers, the SCL-90 is appropriate for counseling centers, student health centers, etc. The SCL-90 consists of symptom statements with each one rated on a five-point scale of discomfort (0-4), ranging from "not at all" at one end to "extremely" at the other. The SCL-90 measures nine primary symptom dimensions (i.e, Anxiety, Depression) plus three global indices of distress. The following reliability data are provided: internal — .77 (psychiatric) to .80 (depression); test-retest — most coefficients range between .88 and .90 (Derogatis and Cleary, 1977). For this study the symptom dimensions of anxiety and phobic anxiety were measured.

Procedure

Subjects in the pre-outpatient group, which met once a week, were asked to complete a copy of Rotter's internal versus external control scale (a shorthand, 24-question format) as well as the SCL-90 during the educational portion of their group meeting (the first half hour of a two-hour session).

Subjects in the outpatient group, which met three times a week, were asked to complete a copy of the Internal versus External Control Scale (24-question format) as well as the Symptom Checklist during the educational portion of their group meeting (the first half hour of a three-hour session).

Finally, members of the aftercare group, which met once a week, were asked to complete a copy of the Internal versus External Control Scale (24-question format) as well as the SCL-90 during the educational portion of their group meeting (the first half hour of a ninety-minute session).

Following the collection of data for these three groups, pre-outpatient, outpatient and aftercare, comparisons were made to determine whether or not significant changes in subjects' perceived levels of control and anxiety occurred.

Research Design

The research design employed was the Between Subjects Causal-Comparative design (Borg and Gall, 1983). This particular method was utilized in order to try and obtain as large an N as possible. This procedure is especially important when research time is limited. Although this was not the most desirable research design available, it can be useful for gathering data and making inferences.

Analysis of Data

Analysis of variance is the appropriate statistical procedure for this design and was employed to test the null hypothesis (Minium, 1978).

Delimitations

The following delimitations are recognized by the investigator:

1. This study was restricted to the alcoholic's self-assessment of his or her locus of control and level of anxiety and did not take the pre-outpatient, outpatient, and aftercare counselor's perceptions into account.
2. Separate analyses on subjects who volunteered for outpatient treatment versus those who were required to enter treatment were not conducted.
3. Both the SCL-90 and the Rotter scale were given just once rather than twice to the same subjects to measure changes over time. A one-time measure was done rather than a pretest-posttest format.

This chapter includes a summary of the procedures followed in testing the hypotheses of this study. The methodology, instruments, research design, and statistical procedures were also described.

Chapter 3 will discuss the results obtained from the Rotter and SCL-90 questionnaires, as well as the results obtained from the statistical procedures used to test the null hypotheses which were posed.

CHAPTER 3

RESULTS

In this chapter the results obtained from the analyses of variance, are performed utilizing Rotter's scale as the independent variable, and the other using the SCL-90 as the second independent variable are reported. In addition, the subgroup means and standard deviations for the pre-outpatient, outpatient, and aftercare groups are reported, one set obtained using Rotter's scale and the other following the administration of the SCL-90. These results are posted under the heading Hypotheses Testing. There is also a heading for Subject Demographics.

Hypotheses Testing

In order to statistically deal with changes in subject's perceived locus of control and perceived anxiety as the product of time spent in outpatient treatment the following null hypotheses were formulated:

1. Individual ratings on the internal versus external locus of control scale will not move significantly in the internal direction as a function of time spent in alcoholism treatment. Specifically, scores for individuals in the outpatient treatment group will not be significantly more internal than

those in the pre-outpatient group, nor will those subjects in the aftercare group score significantly lower than subjects in the outpatient condition.

2. Individual ratings on the SCL-90 will not significantly decrease as a function of time spent in alcoholism treatment. Specifically, individuals who are members of the outpatient group will not exhibit significantly lower anxiety scores than those in the pre-outpatient condition, nor will subjects who are members of the aftercare group obtain significantly lower anxiety scores than those in the outpatient group.

The scores reported on the SCL-90 are reported in Table 1. A mean of 6.43 and a standard deviation of 7.05 were obtained for the pre-outpatient group. A mean of 10.71 and a standard deviation of 8.8 were obtained for the outpatient group. A mean of 10.43 and a standard deviation of 9.80 were obtained for the aftercare group.

The scores reported on the Rotter's scale are listed in Table 2. A mean of 7.29 and a standard deviation of 2.71 were obtained for the pre-outpatient group. A mean of 4.71 and a standard deviation of 1.28 were obtained for the outpatient group. A mean of 7.29 and a standard deviation of 2.86 were obtained for the aftercare group.

The statistical test used to provide information which would serve to expose significance differences between pre-outpatient, outpatient, and aftercare groups was the one-way analysis of variance. According to Minium (1978) this procedure is appropriate in cases where there are two or more treatment conditions or subgroups as opposed to a method such as multiple t-tests. In this study the means of

Table 1. Summary of Symptom Checklist 90 (SCL-90) -- Group Means and Standard Deviation

Treatment Group	N	Mean	Standard Deviation
Pre-outpatient	7	6.43	7.05
Outpatient	7	10.71	8.83
Aftercare	7	10.43	9.80

Table 2. Summary of Rotter's Internal versus External Control of Reinforcement Scale -- Group Means and Standard Deviation

Treatment Group	N	Mean	Standard Deviation
Pre-outpatient	7	7.29	2.71
Outpatient	7	4.71	1.28
Aftercare	7	7.29	2.86

three subgroups (pre-outpatient, outpatient, and aftercare) were compared for significant differences following the administration of Rotter's scale and the SCL-90. A null hypothesis with a .05 level of significance was used to evaluate results.

The results of the analysis of variance test for the SCL-90 are reported in Table 3. The mean score for the among groups was 5.74 and 87.04 for the within groups. These scores provided a Fischer's f-score of .07. The tabled f-score of 3.55 at the .05 alpha level of significance was not exceeded, so the null hypothesis was retained. Retaining the null hypothesis means that there was no significant difference in perceived anxiety scores on the SCL-90 between subjects in either the pre-outpatient, outpatient, or aftercare groups. However, scores for the pre-outpatient group were lower than those in both the outpatient or aftercare conditions. These results differed from the Rotter scale, which showed the lowest mean for the outpatient condition.

The results of the analysis of variance test for the Rotter's scale are reported in Table 4. The variance score for the between groups was 15.54 while the within groups variance score was 6.67. These two scores provided a Fischer's f-test of significance score of 2.33. The tabled f-score of 3.55 at the .05 alpha level of significance was not exceeded, so the null hypotheses was retained. Retaining the null hypothesis means that there was no significant difference in perceived locus of control scores on Rotter's internal versus external locus of control scale for subjects in either the pre-outpatient,

Table 3. One-way Analysis of Variance -- Alcoholics' Perceived Anxiety and Phobic Anxiety Scores on the Symptom Checklist 90 (SCL-90)

Source	SS	Df	MS	Calculated f	Tabled f
Between	11.47	2	5.74	.07	3.55
Within	1566.76	18	87.04		
Total	1578.23				

Total N = 21

Table 4. One-way Analysis of Variance -- Alcoholics' Perceived Locus of Control Scores on Rotter's Internal versus External Control of Reinforcement Scale

Source	SS	Df	MS	Calculated f	Tabled f
Between	31.08	2	15.54	2.33	3.55
Within	120.21	18	6.67		
Total	151.29				

outpatient, or aftercare groups. Mean scores between the pre-outpatient and outpatient scores did decrease, but the mean score between the outpatient and aftercare group showed an increase.

Subject Demographics

The demographic characteristics of subjects involved in this present study are shown in Table 5. The two major characteristics involved were the client's age and sex. The majority of the clients were white though exact percentages were not gathered.

Table 5. Total Number of Males, Females and Mean Age of Each Sex

Subjects	Mean Age
Male Subjects, N=16	37.9
Female Subjects, N=5	30.8

This chapter includes an analysis of the data obtained and the statistical methods used during the course of this research. Data on means, standard deviations, analyses of variance and the accompanying Fischer f-test of significance are reported, along with accompanying tables.

Chapter 4 will focus on interpreting the results stated in this chapter, as well as conclusions and recommendations for future research.

CHAPTER 4

INTERPRETATION AND IMPLICATIONS OF FINDINGS

Introduction

The purpose of this study was to duplicate some of the earlier findings on locus of control; namely, that subjects would move toward an increased perception of internal control as a function of time spent in outpatient treatment. In addition it was hypothesized that as an alcoholic's locus of control became more internal, his or her level of anxiety would also decrease. This present chapter is presented in the following manner: Discussion of Results, Conclusions, Implications and Recommendations, and a Summary.

Discussion of Results

The results cited in the previous chapter seemed to indicate that there were no significant changes in scores on either the Rotter or SCL-90 scales as a function of time spent in treatment. In addition, both locus of control and anxiety scores did not decrease during the course of treatment, with the exception of the mean score on the Rotter scale between the pre-outpatient and outpatient conditions. This lack of significant findings, coupled with the lack of a consistent decrease in mean locus of control scores comes into conflict with the results of the studies cited in the literature section of the first chapter

of this present research (Obitz and Oziel, 1978; O'Leary, Rosenhow and Donovan, 1975; O'Leary, Donovan, Hague and Shea, 1975; Oziel and Obitz, 1972; Gozali and Sloan, 1971; and Goss and Morosko, 1970).

Henrichsen (1976) stated that some alcoholics may be deemed "defensive internals". They exhibit internal locus of control scores while their actual behavior is more externally oriented. Hendrichsen's findings seem to cast doubt on the outcome of some of the previous research using perceived locus of control as a criterion. Did the subjects in this study actually develop a more internal locus of control as a function of time spent in treatment or did they merely respond in a defensive manner?

The SCL-90 was used to determine if a high degree of anxiety might be present even in the face of low internal versus external locus of control scores, but no significant results were found here. However, the highest mean score for anxiety (10.71) was found in the outpatient group, which also happened to report the lowest mean score on the Rotter scale (4.71). These results make Henrichsen's claim worth noting.

Another study which does seem to support Rotter's scale was conducted by Naditch (1975). The primary difference between this piece of research and the others listed above is that Naditch conducted his study on an army base. He measured 517 army recruits on Rotter's scale during their early weeks of basic training and reported that mean locus of control scores tended to increase toward externality as drinking problems increased.

Rotter warned about the use of his scale to measure and assess locus of control of alcoholics in treatment. Concerning changes in perceived locus of control he had this to say:

> It is more likely that they (alcoholics) have been told so many times and by so many people that their cure 'is up to them' that they fully recognized that this is the attitude they are supposed to present to the staff when they are trying to appear cooperative in a treatment program, either in an institution or as an outpatient (p. 62).

Stafford (1982) also conducted a study on locus of control and drinking and his statement below supports Rotter's conclusions:

> Alcoholics more often chose to blame themselves for their drinking but to place responsibility elsewhere. Possibly this is because you can blame yourself, and doesn't require anything, but taking responsibility eventually means having to make changes (p. 597).

Despite the conflicting findings concerning the use of the Rotter scale with alcoholics this questionnaire was chosen for use in this study because of reported reliability and validity results. Rosenhow and O'Leary conducted a literature review of tests which have been developed to measure locus of control among alcoholics in teatment. Of the several batteries cited, Rotter's scale reported the best reliability and validity data (Rosenhow and O'Leary, 1978; Joe, 1971). A few drinking locus of control scales were cited, the best one being a measure developed by Keyson and Janda (1972). Unfortunately, some reliability and validity data were not reported for this scale, so this battery was passed over for Rotter's test instead. Keyson and Janda's measure was based on Rotter's questionnaire pointing to yet another reason for employing this device.

Due to the lack of data supporting the Taylor Manifest Anxiety Scale (TMAS), the SCL-90 (Symptom Checklist 90) was utilized. The pattern of mean scores between pre-outpatient, outpatient, and aftercare groups for this scale did not follow the pattern obtained following the administration of the Rotter Internal versus External Scale. Results obtained here showed that reported anxiety increased during time in rehabilitation, with the highest mean scores being in the outpatient (10.71) and aftercare groups respectively (10.43). Although the findings here did not prove to be significant, they do appear to show that the Symptom Checklist 90 was somewhat effective in pointing out discrepancies between reported perceptions of internal control and actual levels of both simple and phobic anxiety experienced by the subjects.

Before proceeding to the next section, the conclusion, it is important to point out the flaws of this study, and it has a few. The following are some of the more major ones:

1. This was a between versus a within subjects design, meaning that twenty-one different subjects; seven different and unique individuals in each group: pre-outpatient, outpatient and aftercare, received the SCL-90 and Rotter questionnaires. Measuring personality characteristics rather than locus of control and anxiety may have led to nonsignificant results. Had twenty-one people been followed through each treatment group and tested accordingly, the results may have been significant.

2. The twenty-one subjects who received the Rotter and SCL-90 questionnaires were only tested once. Perhaps some significant changes may have been reported if these individuals had been retested a second time during their period in their respective groups.
3. The small N of this study may have been a cause of nonsignificant findings. This is especially true when it comes to the power of a study. Had a larger N been utilized either one or both of the stated null hypotheses may have been correctly rejected. A large N may have lessened the inherent variation that crept in during the analysis of variance procedure.

Conclusions

Based on the preceding discussion the following conclusions are presented:

1. There appear to be changes in locus of control during treatment, but it remains unclear as to whether these changes are based on changes in perceived locus of control, defensiveness on the part of the subjects answering the questionnaire, or some other factors.
2. There appear to be changes in perceptions of anxiety during treatment, with subjects becoming more anxious during the course of treatment.
3. Though the results were not significant, possibly due to methodological flaws, there seemed to be some evidence to indicate that using two separate devices such as the Rotter

and Symptom Checklist scales may be a good approach to assessing inconsistencies in scores, whenever self-report methods are used.

Implications and Recommendations

The following recommendations are offered for future research:

1. Use of a drinking rather than a general locus of control measuring device may yield more accurate results.
2. A within-subjects, rather than a between-subjects design might prove to be a better method for conducting the type of research outlined in this present study. Testing and retesting the same individuals throughout their entire course of treatment, from pre-outpatient to outpatient and finally to aftercare, may produce significant results and more important, help to control for personality differences.
3. A study utilizing a larger N, and control group of non-alcoholics, may be used to look for patterns of answers given on both the SCL-90 and Rotter scales. This is especially true on the dimension of anxiety. A higher N may have minimized the effect of those alcoholics who did answer in a defensive fashion.
4. Further research should be attempted using a measure such as the SCL-90 to assess anxiety in alocholics. With better research methodology and a larger N perhaps significant results will occur.
5. Co-alcoholics, the alcoholics "significant others" may be measured to see how changes in their control scores affect scores reported by the alcoholics.

Summary

This study was designed to attempt to duplicate some of the earlier findings on locus of control. In addition, measuring a subject's perceived level of anxiety was used to look for any consistency between changes in locus of control and level of distress. Research hypotheses and corresponding null hypotheses were formulated and data was gathered through the use of two standardized scales.

The subjects in this study consisted of twenty-one alcoholics enrolled in one of three groups; pre-outpatient, outpatient, and aftercare. These individuals were undergoing rehabilitation in a outpatient facility located in the Southwest.

The study consisted of a between-subjects causal-comparative design which was used to compare scores between members of each treatment group; pre-outpatient, outpatient, and aftercare. Each of the seven individuals in the three groups was administered a copy of Rotter's Internal versus External Locus of Reinforcement (control) scale as well as a copy of the Symptom Checklist, or SCL-90. Once means and standard deviations were obtained on all three treatment groups for administration of the SCL-90 and Rotter scales respectively, an analysis of variance was utilized to look for any significance in scores between each of the three treatment groups. The analysis of variance and the subsequent Fischer test failed to show any significant results, so the null hypotheses of no significant difference in reported scores between treatment groups was retained.

REFERENCES

Borg, W. R. and Gall, M. D. Educational research: An introduction (4th Ed.). New York: Longman, Inc., 1983.

Derogatis, L. R. and Cleary, P. A. Confirmation of the dimensional structure of the SCL-90: A study in construct validation. Journal of Clinical Psychology, 1977, 33, 981-989.

Goss, A. and Morosko, T. E. Relation between a dimension of internal-external control and the MMPI with an alcoholic population. Journal of Consulting and Clinical Psychology, 1970, 34, 189-192.

Gozali, J. and Sloan, J. Control orientation as a personality dimension among alcoholics. Quarterly Journal of Studies on Alcohol, 1971, 31, 159-161.

Henrichsen, J. J. Locus of control among alcoholics: Some empirical and conceptual issues. Quarterly Journal of Studies on Alcohol, 1976, 37, 908-916.

Joe, V. C. Reivew of the internal-external control construct as a personality variable. Psychological Reports, 1971, 28, 619-640.

Kagan, J. and Havemann, E. Psychology: An Introduction (3rd Ed.). New York: Harcourt, Brace & Jovanovich, 1976.

Keyson, M. and Janda, L. Untitled Locus of Drinking Control Scale. Phoenix, Az.: Saint Lukes Hospital, 1972.

Leftcourt, H. M. Internal versus External Control of Reinforcement. Psychological Bulletin, 1966, 65, 206-220.

McNeil, M. and Rubin, Z. The psychology of being human (2nd Ed.). New York: Harper and Row, 1977.

Minium, E. W. Statistical reasoning in psychology and education (2nd Ed.). New York: John Wiley & Sons, Inc., 1978.

Naditch, M. P. Locus of control and drinking behavior in a sample of men in army basic training. Journal of Consulting and Clinical Psychology, 1975, 43, 96.

Obitz, F. W. Normative data on locus of control in male alcoholics undergoing treatment. Journal of Consulting and Clinical Psychology, 1978, 46(2), 379-380.

Obitz, F. W. and Oziel, L. J. Change in general and specific perceived locus of control in alcoholics as a function of exposure to treatment. International Journal of the Addictions, 1978, 13(6), 995-1001

O'Leary, M. R., Donovan, D. M. and Hague, W. A. Relationship between locus of control, self-report, and non-obtrusive measures of anxiety. Journal of Clinical Psychology, 1974, 30, 322-373.

O'Leary, M. R., Donovan, D. M., Hague, W. H. and Shea, R. A. Shifts in component factors of locus of control as a function of treatment in male alcoholics. Journal of Clinical Psychology, 1975, 31, 359-361.

O'Leary, M. R., Rosenhow, D. J. and Donovan, D. M. Locus of control and attrition from treatment. Journal of Consulting and Clinical Psychology, 1975, 44(4), 90-93.

Oziel, L. J. and Obitz, F. W. General and specific perceived locus of control in alcoholics. Psychological Reports, 1972, 30, 957-985.

Ray, W. J. and Katahn, M. Relation of anxiety to locus of control. Psychological Reports, 1968, 23, 1196.

Rosenhow, D. J. and O'Leary, M. R. Locus of control research on alcoholic populations I: A review. International Journal of the Addictions, 1978, 13(1), 55-78.

Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80(1, Whole No. 609).

Rotter, J. B. Some problems and misconceptions related to the construct of internal versus external control of reinforcement. Journal of Consulting and Clinical Psychology, 1975, 43, 56-67.

Stafford, R. A. Locus of drinking problems as perceived by alcoholics and treatment personnel. Journal of Studies on Alcohol, 1982, 43(5), 593-598.

Watson, B. Relationship between locus of control and anxiety. Journal of Personality and Social Psychology, 1967, 6, 91-92.