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AN ARCHIVAL INVESTIGATION OF THE
RELATIONSHIP OF SEVERITY OF
PROBLEMS AND AMOUNT OF EXPOSURE
PRACTICE, TO POSITIVE CHANGES AND
OUTCOME STATUS AMONG
AGORAPHOBIC PARTICIPANTS IN A
BEHAVIOURAL TREATMENT PROGRAM.

CAROL. FRANKLYN-PHILLS

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TO POSITIVE CHANGES AND OUTCOME STATUS
AMONG AGORAPHOBIC PARTICIPANTS IN A
BEHAVIOURAL TREATMENT PROGRAM

by

© Carol Franklyn-Phills

B.A., University of Windsor, 1980

M.A., University of Windsor, 1982

A Dissertation
Submitted to the Faculty of Graduate Studies
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in partial fulfillment
of the requirements for the degree of
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1986

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DEDICATION

This dissertation is dedicated with love and respect,
to my dear husband Ernie.

ABSTRACT

The present archival study focused upon the relationship between amount of exposure practice, severity of problems, outcome status and positive change in a behavioural treatment program for agoraphobia. This program primarily involved in-vivo exposure (systematic desensitization) to feared situations. Subjects recorded the duration and frequency of their exposure practice on behavioural diaries. These diaries, along with other self-report data, were treated as an archival source which was subjected to the scrutiny of "control" hypotheses as suggested by Kerlinger (1964). Since the program to be utilized here was behavioural in its approach, these hypotheses were deduced from findings of the behavioural theorists. Lines of evidence for each of the hypotheses were then pursued in the data.

The 30 subjects who participated in this program were assessed at pre and posttreatment, thereby allowing an investigation of treatment outcome, prior to a consideration of practice variables. The results of repeated measures analyses of variance (ANOVA) supported the predicted post-treatment reductions in generalized anxiety, phobic anxiety as well as depression. Additionally, as predicted, there were no changes in locus of control at posttreatment. In terms of exposure practice, the expected relationship

between amount of practice and treatment outcome, was consistently and remarkably unsupported. However, the anxiety experienced during practice was found to be predictive of outcome. Other significant relationships did not occur as consistently as the latter two.



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CHAPTER I
INTRODUCTION

A common definition of the word "agoraphobia", is "fear of the marketplace." Originally coined by Westphal, (1871) this term derives from a combination of the Greek word "agora" which means place of assembly or marketplace, and "phobos" meaning fear or panic. However, this definition has been criticized for failing to accurately describe the condition, since the fear is quite often generalized to places other than the "marketplace." A better definition might be "a fear of leaving the place (often the home) or person, that symbolizes security." This suggests that the central fear of agoraphobia is not one of external stimuli as such, but a fear of one's own reactions to these stimuli. Described by Goldstein and Chambless (1978) as a "fear of fear", this anticipation of a loss of control or panic, becomes the major problem with agoraphobics. As the frequency of panic attacks increases, so does the person's fear of leaving the place or person which represents security. This separation anxiety is reinforced by the ultimate relief of symptoms that occurs when the "dangerous" situations are avoided. The avoidance is therefore perpetuated, and eventually the fear is generalized to a series of locations and/or situations.

The treatment of agoraphobia has received much attention

in recent years. Advocates of drug therapy, psychotherapy, cognitive restructuring techniques as well as behavioural approaches, have all reported varying degrees of success, in well-controlled studies (Rapp and Thomas, 1982). A detailed account of current research on agoraphobia is also available in Rapp and Thomas (1982), "The Review: Agoraphobia." However, since the treatment approach to be considered here is behavioural in nature, the present discussion will focus on research that has been advanced by the behaviourists.

Researchers such as Emmelkamp, Kuipers and Eggeraat (1978), and Watson, Mullett and Pillay (1973) have now established the efficacy of real life or "in-vivo" exposure to the feared stimuli, in the treatment of agoraphobia. According to Mavissakalian and Michelson (1983) variations in the actual practice of in-vivo exposure seem to be equally efficacious. In addition, the realization that homework practice might be a significant variable in successful treatment outcome, resulted in the utilization of behavioural diaries (Mathews, Gelder and Johnston, 1981) as measures of both homework practice, as well as outcome. Mavissakalian and Michelson (1983) have found the use of such diaries quite helpful in the monitoring of patient practice. In the present study, the main focus will be placed on variables derived from the agoraphobics' behavioural diaries which,

along with other objective psychological test data, will be treated as an archival source. Here, these personal documents will be subjected to the scrutiny of "control" hypotheses (Kerlinger, 1964; Bringmann, 1975). This archival procedure calls for the recasting of the data in different theoretical contexts (hypotheses, theories, models). Lines of evidence for each of the positions can then be pursued in the data (Leenaars and Balance, 1984). As a prelude to the development of these hypotheses however, a discussion of the essential features of the agoraphobia syndrome, as well as relevant behavioural research findings, will be presented.

The Agoraphobia Syndrome

Women between the ages of 18 and 35 (and especially married women) are the most likely victims of this crippling syndrome. In fact, some 66 to 75% of all agoraphobics are female (Marks, 1970; Agras, Sylvester and Oliveau, 1969). Agras et al. (1969) estimated the incidence of agoraphobia in North America to be over one million. Today, that estimate has increased to about five million in the United States alone, 80% of them being women.

The clinical picture of an agoraphobic is that of an anxiety-ridden individual who suffers from various combinations of certain universal symptoms when faced with, or even just anticipating fearful situations. These symptoms usually culminate into the dreaded "panic attack", and include sweaty palms, tachycardia, muscle weakness and tremor, a lump in the throat and shortness of breath. In short, the body reacts as if real danger were imminent. Some agoraphobics also experience colitis, vomiting, derealization and depersonalization. In depersonalization, the person feels that she or her body is unreal; whereas in derealization the person experiences a barrier between the self and the environment. The duration of these feelings is usually a few seconds or minutes and might accompany a panic attack. The symptoms discussed above fail to convey the subjective emotional response that accompanies a panic attack. The terror is best described by an

ex-agoraphobic who states that:

"One word can explain it - Hell! I compare the fear of the agoraphobe to the fear of the men in the trenches during the first World War, who were ordered to go "over the top" in the full knowledge that they were almost certain to be killed. If you can just imagine for one moment the almost blind terror of many of those men, then you have felt a faint shadow of what agoraphobia is all about. That is what it feels like from the moment the severe agoraphobe wakes up to the moment he goes to sleep, and the fear often follows him into his dreams as well." (Vose, 1981, p.36)

This panic reaction leads the agoraphobic to believe that something is dreadfully wrong with either their body or mind. For example, a frequent assessment of the symptoms is that either a heart attack or stroke will follow. A fear of losing control and therefore appearing foolish in public, as well as the fear of "going crazy" are also common among agoraphobics. However, this is not really surprising if one accepts the tenet of Goldstein and Chambless (1978) that agoraphobics tend to be hypersensitive or hyperalert to bodily sensations, and so they interpret any experience of anxiety as a prelude to a panic attack. The thoughts or cognitions that they experience while having a panic attack are quite similar from one case to another, and generally include thoughts such as the following:

"I saw all the people looking at me - just faces, no bodies, all merged into one. My heart started pounding in my head and in my ears.. I thought my heart was going to stop...I could

not think of anything except the way I was feeling and that now I had to get out and run quickly or I would die." (Hawkrigg, 1975, p.1281-1282).

These thoughts and behaviours aid in the maintenance of the phobic anxiety. Although these panic attacks generally last no longer than ten minutes (Clarke and Jackson, 1983) it is their unpredictability and intensity that contribute to their great impact. The onset of agoraphobia is characterized by suddenness in the majority of cases. After the first panic attack, the process begins, and although the exact precipitators of the attack are often not known, they usually initially occur during a period of generalized stress. In very few cases, the symptoms might not persist over a long period. However, the occurrence of "spontaneous remission" is rare in agoraphobia (Marks, 1969; Mathews et al., 1981).

The amelioration of anxiety has been an essential ingredient in many treatment approaches to agoraphobia. Seligman (1975) defined anxiety as "the chronic fear that occurs when a threatening event is in the offing, but is unpredictable." Clarke and Jackson (1983) however, have suggested a tripartite classification system for the concept of anxiety. The three categories are phobic, cognitive and panic. It should be stressed that in agoraphobia, these anxieties often coexist.

Phobic anxiety is defined as a special form of fear

which is (1) out of proportion to the demands of the situation (2) cannot be explained or reasoned away (3) is beyond voluntary control and (4) leads to avoidance of the feared situations (Marks, 1969). Here, there is an irrational element, which can be illustrated by cases where a person might experience anxiety while merely looking at a photograph of the feared object. Agoraphobics also suffer from cognitive anxiety which entails the apprehension of adverse consequences. For some agoraphobics, this anticipatory anxiety is the most disturbing and difficult to control. On the other hand, patients generally find the anticipatory anxiety to be worse than that which is experienced in the actual situation. The final "panic" anxiety refers to an extremely high level of arousal. Clinical studies suggest that the most devastating aspects of panic anxiety are the suddenness and unpredictability. This is the anxiety of which the agoraphobic is most afraid, i.e. the "fear of fear."

Quite often, there is also an element of depression, stemming from the person's perceived lack of control or "learned helplessness." This phenomenon has been described by Martin Seligman (1973) as the result of past experiences of powerlessness. Here, the individual has learned that in spite of his/her efforts at mastery over the environment, traumatic events persist. In the case of the agoraphobic,

unsuccessful attempts to control the occurrence of panic attacks, lead to feelings of incompetence. In addition, depressive symptoms are common among agoraphobic patients (Bowen and Kohut, 1979). The presence of depression in agoraphobia is not surprising, when one considers that the individual's life is greatly restricted in many cases, that their level of dependence upon significant others might become overwhelming to both parties, and finally, that their symptoms only seem to worsen with time, therefore intensifying the tendency towards avoidance. It is this problem of avoidance that is directly attacked by the behaviourists.

Behavioural/Learning Theory of Agoraphobia

Researchers such as Eysenck and Rachman (1965) believed that phobias were examples of conditioned avoidance reactions, and that knowledge of the underlying causes of the syndrome was not necessary for behavioural change. In Mowrer's two-factor theory, fear acquisition and maintenance are considered the results of Pavlovian (classical) and operant conditioning respectively. In the case of agoraphobia, panic attacks are said to occur as an unconditioned emotional response to prolonged, chronic conflict and stress (Chambless and Goldstein, 1981a). Since the most consistent and contiguous stimuli are interoceptive ones such as heart rate, breathing, etc., anxiety becomes

conditioned to them. As a result, minimal levels of anxiety produce sensations that become conditioned stimuli for greater levels of anxiety and panic (Chambless and Goldstein, 1980b; Goldstein and Chambless, 1978). This classical conditioning then sets up a motivational state (that is aversive) for the subject to respond operantly. The phobic avoidance which then develops, is attributed to the negative reinforcement which is afforded the agoraphobic, when she escape/avoids the "fearful" situation and her level of anxiety decreases. As the person learns that the avoidance is reinforcing, this behaviour is perpetuated. Another reinforcer that operates in the continuation of avoidance behaviour is the "secondary gain" obtained when for example, attention is showered on the "victim" by significant others, or a reduction in marital conflict occurs.

Often, the behavioural approach to treatment of agoraphobia has emphasized real-life exposure to anxiety-producing as well as avoided situations. This involves having the patient come face to face with feared situations/objects. The term "exposure" has been labeled in various ways (in-vivo systematic desensitization, flooding, successive approximation, shaping, etc.) denoting slight procedural variations (Rapp and Thomas, 1982); however, the therapeutic effects have not proven significantly different from one technique to another. In the present study, systematic desensitization in-vivo was

the procedure that was utilized. This is probably the most widely used behavioural technique (Rohs and Noyes, 1978).

Desensitization techniques, which rely on reciprocal inhibition, were originally developed by Wolpe (1958). He proposed that the contiguity of strong relaxation responses with fear stimuli acts to inhibit or neutralize the fear responses. Systematic desensitization has been used both with imagined scenes as well as with exposure to the real stimuli. Usually, the agoraphobic is first trained by the therapist in some form of activity such as muscular relaxation, which is incompatible with anxiety, and therefore inhibits its occurrence. The second step in systematic desensitization is to develop a hierarchy of feared situations, ranging from nonanxiety provoking to terrifying, and finally these situations/places are either imagined or faced gradually, all the time utilizing the particular anxiety-controlling agent (e.g. relaxation) to counter any occurrence of the same. It is important, however, that the agoraphobic remains in the feared situation for a sufficiently long period of time until the fear recedes, according to the behaviourists. Repeated exposure is also expected to gradually desensitize the individual to these stimuli. Since the agoraphobic's behaviour is considered a learned or conditioned response, then this can be unlearned, via in-vivo exposure. The proponents of this

view have tested their expectations in several studies, some of which will be outlined in the next section.

Behavioural Research Findings on Agoraphobia

In-vivo Practice: Numerous studies have indicated significant decreases in both generalized as well as phobic anxiety, subsequent to exposure to the feared stimulus. This finding has been demonstrated in studies of snake phobias (Bandura Blanchard and Ritter, 1969), swimming fears in people unable to swim (Sherman, 1972) as well as in mixed phobias (Watson, Gaid and Marks, 1971; Crowe, Marks, Agras and Leitenberg, 1972) and agoraphobia in particular (Watson, Mullett and Pillay, 1973; Mathews et al., 1981). In addition, Mavissakalian and Michelson (1983) note that " a number of analogue and clinical studies have demonstrated the...(efficacy)...of in-vivo exposure" (Barlow, Agras, Leitenberg and Wincze, 1970; Barlow, Leitenberg Agras and Wincze, 1969; Crowe, Marks, Agras and Leitenberg, 1972; Emmelkamp and Wessels, 1975; Stern and Marks, 1973). However, Mathews et al. (1981) point out that the effect of in-vivo treatment is reduced in the absence of practice between treatment sessions. Furthermore, these authors hypothesized that when practice between sessions is allowed to develop, it becomes the main determinant of outcome. Con-

sistent exposure, carried out daily in a systematic fashion, is reportedly of paramount importance. This was previously confirmed by McDonald, Sartory, Grey, Cobb, Stern and Marks, (1979) who showed that the instruction to practice with the therapist had an effect on agoraphobia that was not present if such instructions were not given. The conclusion to be drawn from these studies is that more attention should be directed towards between-treatment-session activity, in the development of treatment approaches.

In an attempt to monitor practice between treatment sessions, Mathews et al., (1981) devised behavioural diaries, in which patients recorded such variables as duration and frequency of outings, as well as the amount of anxiety experienced during practice. Mavissakalian and Michelson (1983) found the inclusion of diaries facilitated weekly discussions regarding progress or a lack thereof. In addition, they reported that patients appreciated the feedback given by the therapist and did not resent the added task of daily recording.

The in-vivo treatment of agoraphobia brings into focus certain questions regarding the factors that might influence its effectiveness. On the topic of duration, it is the general opinion that longer periods of exposure are preferable, since it gives the agoraphobic an opportunity to experience anxiety reduction while still exposed to the situation that had been feared. Stern and Marks (1973) found that continu-

ous exposure for two hours was more effective than exposure for 30 minute periods. Mathews et al., (1981) concur, stating that "it is our strong clinical impression that extensive periods of exposure to actual situations are more effective in reducing fear in agoraphobia." Similarly, Rapp and Thomas (1982) in their review of agoraphobia concluded that longer exposures (one and a half hours or more) are more effective than shorter ones (45 minutes or less). As a result of these findings, many researchers began to implement prolonged (as opposed to brief) exposure in-vivo as the treatment of choice. Emmelkamp and Wessels, (1975) Hafner and Marks (1976), Hand, Lamontagne and Marks (1974) are but a few who have reported "favourable effects" of prolonged practice.

Since duration of practice is considered of such importance as a mediating factor in the treatment of agoraphobia, then one should expect to find (a) greater posttreatment improvement in patients with longer and more frequent practices as well as (b) relatively shorter and less practices in patients with less posttreatment improvement. This was the expectation of Mavissakalian and Michelson (1983) who investigated the role of self-directed in-vivo prolonged exposure (practice) in 49 agoraphobics treated with either combined imipramine-flooding, imipramine, or flooding. A control condition consisted of

rationale, instructions and reinforcement for practice, which were common to all treatment conditions. Surprisingly, the argument for a positive relationship between frequency/duration of practice and posttreatment alleviation of agoraphobic symptoms was not supported. The authors stated that "none of the behavioural diary variables such as number of outings, number of practices and time spent in these activities, differentiated treatment groups or discriminated between posttreatment "low" versus "high" functioning patients." These results are unique, since they do not support the widely maintained positive relationship between exposure practice and treatment outcome. Although this discrepancy in findings has not been clearly explained, it does tend to suggest that further research in this particular area is necessary. Most studies have focused upon pre-posttreatment scores on various anxiety, phobic anxiety, depression and even locus of control measures. Although the latter has not been found to be a consistent or even valid indicator of patient improvement in agoraphobia (Michelson, Mavissakalian and Meminger, 1983) it has yet been used. On the other hand, behavioural diary baseline and change score variables have been generally neglected. In the present study, these variables, with other outcome measures, will be investigated in an attempt to identify any existing relationships.

Anxiety during Practice: Short of avoidance, anxiety will almost always exist when the agoraphobic is initially exposed to the feared stimulus. However, since it is imperative that patients be encouraged to repeatedly return to situations previously avoided (Emmelkamp, 1982; Marks, 1978, 1981; Mathews et al., 1981) exposure is generally accompanied by some form of instruction regarding anxiety management techniques. This is where the use of relaxation techniques can be of great benefit. However, Butler, Cullington, Munby, Amies and Gelder (1984) state that these techniques have not been demonstrated to add significantly to the effect of exposure itself. In addition, Butler et al., stated that behavioural methods of anxiety reduction (other than relaxation) have not been very successful (Hafner and Marks, 1976; Solyom, McClure, Heseltine, Ledwidge and Solyom, 1972).

Attempts at clarifying the role of anxiety during exposure have been innumerable in the recent past. Common questions asked include the following; should anxiety be minimized as in desensitization, maximized as in flooding or simply ignored? Mathews et al., (1981) believe that this question is difficult to answer, because anxiety and exposure cannot be completely untangled. The occurrence of anxiety is inevitable during exposure and patients' experiences with this anxiety, frequently result in a reduction in both the frequency and duration of practice.

The most common solution to this problem is the use of drugs. Anxiolytics and tricyclic anti-depressants, as well as monoamine oxidase inhibiting anti-depressants have been widely used in the treatment of anxiety. These drugs have been found to be useful in agoraphobia (Zitrin, Klein and Woerner, 1980; Sheehan, Ballenger and Jacobsen, 1980), especially in terms of reducing panic attacks. Once panic attacks have been brought under control, patients often learn to enter previously avoided situations (Rohs and Noyes, 1978). Furthermore, the knowledge that they have ingested a drug tends to increase their confidence in threatening situations (Mathews et al., 1981) and therefore also increases the duration of practice. In a previously cited study, Mavissakalian and Michelson (1983) used the anti-depressant imipramine in their study of exposure practice in agoraphobia. Although these authors found neither frequency nor duration of practice to be predictive of outcome, they did find that "subjective anxiety during outings in general and practice in particular was consistently and significantly lower in the more improved subgroup of patients." One explanation that was offered for these findings, was the possibility that the drug facilitates habituation to anxiety, by reducing excessive amounts of autonomic arousal. However, this requires further study before any definite statements can be made.

At the present time, the exact role of anxiety during exposure practice is undecided. While some maintain that this anxiety (as recorded on the behavioural diaries) is a significant predictor of therapeutic outcome (Mavissakalian and Michelson, 1983), others find the information on the topic contradictory. Hafner and Milton (1977) even suggested that the absolute level of anxiety during exposure, may be of less importance than the direction (and size) of change in anxiety. Although Mavissakalian and Michelson's (1983) finding that anxiety during practice was predictive of outcome is interesting, questions remain. For example, does the change in anxiety during practice provide further insight? The present study will also attempt to address this issue.

Prediction of Outcome in Agoraphobia: The realization that not all agoraphobics react in the same way to treatment (Thomas-Peter, Jones, Sinnott and Fordham, 1983; Mathews et al., 1981) has led to various "prediction of outcome" studies. Apart from the obvious contribution to increased therapeutic effectiveness, the ability to make accurate outcome predictions would also be of significant theoretical value. However, previous studies have generally reported disappointing and conflicting results (Emmelkamp and Kuipers,

1979; Hafner and Marks, 1976). A few exceptions follow.

Mathews, Johnston, Lancashire, Munby, Shaw and Gelder (1976) found that Emotional Stability of the 16PF questionnaire and the patient's expectancy of improvement, correlated with treatment outcome. Bland and Hallam (1981) on the other hand, found that patients' level of dissatisfaction with their spouse, to be predictive. While Thomas-Peter et al., (1983) found that "aggression" scores and the rated ability of designated significant others to manage the agoraphobic's behaviour successfully to be predictive, they found no relationship between phobic anxiety (as measured by the Fear Survey Schedule) and response to treatment. This finding is surprising, since it has been demonstrated that patients with high pretreatment phobic anxiety scores tend to respond less favourably to treatment (Hafner and Ross, 1983; Mathews et al., 1981). Similarly, Hafner (1977) contended that agoraphobics who demonstrated "a high frequency of other neurotic and phobic symptoms" should respond less favourably to treatment. Other variables identified as possible predictors include the number of symptoms, (Gelder, Marks and Wolff, 1967) and marital and interpersonal rela-

tionships (Emmelkamp, 1977). A more recent study done by Hafner and Ross (1983) implicated pretreatment levels of agoraphobic disability (avoidance) and extrapunitive ness in the prediction of treatment outcome. Pretreatment predictors of change during follow-up, were levels of social fear and fears which suggested dependency problems.

One variable which frequently occurs in the behavioural literature, is that of locus of control. This refers to an individual's tendency towards external or internal control. Rotter's IE scale (1966) is intended to operationalize locus of control beliefs in individuals. An individual classified as an internal believes generally that his behaviour determines the outcomes he will receive. Externals believe the world is unpredictable, events are predetermined, control of reinforcement lies in the hands of others, or the world is too complex to be predicted. Although this scale has been utilized in the study of agoraphobia, it has not been satisfactorily demonstrated that agoraphobics differ from the general population in locus of control (Michelson, Mavissakalian and Meminger, 1983). In fact, many studies found no pre to post changes in locus of control after treatment (Emmelkamp, 1974; Emmelkamp et al., 1978; Everaerd, Rijken and Emmelkamp, 1973; Michelson et al., 1983). In spite of this, locus of control has been studied as a possible prognostic indicator in agoraphobia, but with little success.

Michelson et al., (1983) for example, found that the effectiveness of agoraphobia treatments is not reflected in shifts in IE scores from pre to posttreatment. These findings are not surprising, when one considers Rotter's (1975) warning regarding the prognostic utility of locus of control in the prediction of behavioural outcomes. Rotter believed that as a predictive measure, the IE scale's utility is limited. According to Newman (1977) the IE scale allows for more accurate behavioural predictions in psychological situations which are novel and/or ambiguous for the individual.

The many studies which have attempted to identify reliable predictors of outcome in agoraphobia confirm the great difficulty of this task. Researchers must yet continue their attempts. To this end, the present author will, also investigate the predictive value of exposure practice variables, as well as other subjective variables.

As previously mentioned, the practice variables to be studied were recorded in subjects' behavioural diaries (Appendix A) which will be treated as an archival source. The use of personal documents (e.g. diaries, etc.) in ex post facto research such as this is not uncommon. In the next section, a discussion of the research approach to be utilized here, will serve as an antecedent to the derivation of the hypotheses.

Ex Post Facto Research

Because it is not always possible or even plausible for researchers to directly manipulate variables of interest, archival methods of investigation have been implemented. Kerlinger (1964) considers historical investigations to be a type of ex post facto research and defines the latter thus:

"Ex post facto research is systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable. Inferences about relations are made, without direct intervention, from concomitant variation of independent variables and dependent variables." (Kerlinger, 1964, pp. 379)

Since the antecedent or independent variables have already occurred, then the researcher must begin the investigation with an observation of consequent variables (Bringmann, 1975). The danger of this approach is that improper and erroneous interpretations could be made. Indeed, it would be easy to accept the first and most obvious interpretation of an established relationship. Therefore, Kerlinger has suggested that one should carefully define alternative hypotheses.

As outlined by Kerlinger (1964), the development of these control hypotheses acts to minimize an inherent weakness of ex post facto research, i.e. the lack of control of independent or antecedent variables. Since neither manipulation nor random assignment are possible, researchers must formulate these control hypotheses in an attempt at some form of control

over extraneous variables. This procedure involves the recasting of the data (i.e. diaries, objective tests) in light of the various research findings of the behaviourists. Lines of evidence will subsequently be pursued for each of the alternative hypotheses (Leenaars and Balance, 1984). Although this procedure does not allow the making of definite causal inferences, it at least "establishes rank-orders of plausibility among several alternative explanations" (Bringmann, 1975).

In the present study, a number of variables can be considered alternative hypotheses that identify the critical antecedents. The diary variables provided reports of the duration and frequency of practice, as well as the amount of anxiety experienced during practice outings. These variables can therefore be considered independent or antecedent variables, with outcome measures such as generalized anxiety, phobic anxiety and depression acting as dependent or consequent variables. In addition, since pretreatment measures of generalized anxiety, phobic anxiety, depression and initial exposure practice were also made available, their potential role as antecedent variables can also be investigated. The richness of the data is to the author's advantage in this study, since it allows a more extensive examination of the relationship between several variables, as well as the development of a larger number of control hypotheses.

An important problem to be considered in the use of archival data, is that of generalizability. This potential lack of generalizability is directly related to the previously discussed lack of controls. However, it should be noted that in the study of a group of 30 subjects who all suffer from as distinct a syndrome as agoraphobia, and who were all subjected to the same general treatment approach, the generalizability of findings should have more validity than that of a single case study. Specifically, the question to be asked is whether agoraphobics who record their exposure practice in behavioural treatment programs are generally representative of other agoraphobics who do not keep behavioural diaries in similar treatment approaches. Since the current trend in behavioural research has been towards the use of diaries, the question of generalizability is indeed important. However, caution is necessary here in order to avoid erroneous generalizations.

Although several uses have been made of personal or archival documents in psychological research (Allport, 1942) few behavioural researchers have studied methodological and design issues in archival research (Bringmann, 1975). The observed increase in the use of diaries and other personal documents should nevertheless incite further research in this area. The archival method has been adapted to the study of suicide notes (Leenaars and Balance, 1984), applied to educational and sociological research (Kerlinger, 1964),

as well as to various clinical inquiries. However, one frustration in the use of diaries such as those used in this study, is the tedium involved in the scoring and analysis of the diary data. Mavissakalian and Michelson (1983) have suggested the use of a few, but salient measures which include frequency of outings, anxiety experienced during practice and the duration (total and mean) of practice. These authors considered mean duration of practice of particular interest, due to the prescription of prolonged practice. They defined this variable as the mean duration of "weekly" outings. However, if one wishes to investigate the relationship between the "length of exposure practices" and treatment outcome, then a measure of the mean duration of "individual" (as opposed to weekly) practice outings, should be utilized. This, in addition to the other diary variables outlined by Mavissakalian and Michelson (1983), will be studied here. Another potential source of frustration is the realization that none of one's control hypotheses may prove plausible (Balance, 1973). In the event that this does occur, further questions to be studied may be generated by the process.

Since the program to be studied here was essentially behavioural in nature, the control hypotheses will be derived from the major aspects of the behavioural theories outlined earlier. This procedure is in keeping with Carnap's (1932/1959) suggestions regarding the development of different

hypotheses from a theoretical perspective (Leenaars and Balance, 1984) thereby allowing the investigation of the available data, in a logical and empirical fashion.

Carnap stated that:

"A person tests (verifies) a system-sentence by deducing from it sentences of his own protocol language and comparing these sentences with those of the actual protocol." (Carnap, 1932/1959, pp. 66).

Specifically, Carnap is suggesting that the theory to be investigated should be translated into antecedent (protocol) sentences which should be publicly observable as well as singular and specific. These sentences are considered representations of the particular theory in question, which were deduced from the theory itself. An attempt at verification of these sentences is then made, by comparing each statement with the actual content of the diaries and other available data. A second step in this procedure is to utilize the method of induction from those statements (protocol sentences) which were verified, in order to discover general ideas and hopefully facilitate further theoretical improvement.

In the present study, the verification of already stated behavioural findings is not a major point of interest. Nonetheless, prior to any consideration of the contributing factors in positive outcome, it is essential to determine whether or not there were significant posttreatment improvements. Fortunately, pre and posttreatment measures of generalized and phobic

anxiety, depression and locus of control were available for comparison. Since the efficacy of the behavioural in-vivo treatment approach in terms of anxiety reduction etc., has been repeatedly demonstrated in well-controlled studies, one would expect the general pattern of these results to generalize to other studies where treatment has been effective and similar measurements have been made. This will be a necessary finding; otherwise, conclusions and hypotheses about which specific variables augment effectiveness, would be unsupportable in the absence of a plausible demonstration that effective treatment has occurred.

The final step in this section is development of the antecedent protocol statements. The first set of statements refer to the efficacy of the treatment program, while the next set of statements refer to the diary and other psychometrically assessed subjective variables. The deductions of the behavioural theory presented earlier, lead to the following statements:

A. The pattern of results found in controlled studies will largely generalize to behavioural therapies conducted in clinical settings, where the primary concern was treatment. This would be demonstrated by the following specific findings.

1. Anxiety Hypothesis: There should be a significant decrease in subjective feelings of generalized anxiety.
2. Phobic Anxiety Hypothesis: There should be a significant decrease in subjective feelings of phobic anxiety.
3. Depression Hypothesis: A significant decrease in depression should be demonstrated.

4. Locus of Control Hypothesis: There should be no significant shift from perceptions of external to internal locus of control.

B. (i) It will be recalled that researchers such as Stern and Marks (1973), Mathews et al., (1981), Rapp and Thomas (1982) and Emmelkamp and Wessels (1975) have concluded that in terms of practice, a greater amount results in more favourable outcome effects. This leads to the general hypothesis that the amount of exposure practice is negatively related to outcome scores obtained on the psychometrically assessed subjective variables of generalized anxiety, phobic anxiety as well as depression. Here, "amount of exposure" is operationally defined as (i) total duration of practice (ii) mean duration of practice and (iii) frequency of practice. The studies pertaining to exposure practice lead to the following singular, specific hypotheses.

1. The total duration of exposure practice is negatively related to outcome generalized anxiety, phobic anxiety and depression.

2. The mean duration of exposure practice is negatively related to outcome generalized anxiety, phobic anxiety and depression.

3. The frequency of exposure practice is negatively related to outcome generalized anxiety, phobic anxiety and depression.

B. (ii) In spite of Mavissakalian and Michelson's (1983) expectation that amount of practice would be predictive of treatment outcome, these researchers found no support for such a relationship in their data. An alternative hypothesis can therefore be that the amount of practice will not be related to treatment outcome. Specifically, the following alternative statements can be made.

1. The total duration of exposure practice is not related to outcome generalized anxiety, phobic anxiety or depression.
2. The mean duration of practice is not related to outcome generalized anxiety, phobic anxiety or depression.
3. The frequency of practice is not related to outcome generalized anxiety, phobic anxiety or depression.

C. Mavissakalian and Michelson's (1983) finding regarding the positive relationship between anxiety experienced during practice and outcome status, leads to the following hypothesis.

1. The anxiety experienced during exposure practice is positively related to outcome generalized anxiety, phobic anxiety and depression.

D. Common sense would suggest that people who practice more at the outset, would tend to exhibit a greater amount of practice throughout the treatment. Additionally, if the overall amount of practice is predictive of treatment effectiveness,

then measures of baseline practice should be predictive of treatment effectiveness. The following specific statements outline these hypotheses.

1. The duration (total, mean) and frequency of baseline practice is positively related to the duration (total, mean) and frequency of the overall amount of practice.
2. The duration (total, mean) and frequency of baseline practice is negatively related to outcome generalized anxiety, phobic anxiety and depression.

E. If the latter hypothesis that baseline practice is predictive of treatment effectiveness is true, then it follows that baseline measures of practice should also be related to the degree of reduction in generalized and phobic anxiety, as well as depression. Specifically;

1. The duration (total, mean) and frequency of baseline practice is positively related to the degree of reduction in generalized and phobic anxiety, and depression, from pre to posttreatment.

F. Although the prediction of treatment outcome from psychometrically assessed subjective variables has produced conflicting results (Emmelkamp and Kuipers, 1979) certain predictions regarding symptom severity and outcome, can yet be made. It has been demonstrated that individuals with higher pretreatment levels of phobic and generalized anxiety tend to respond

less favourably to treatment (Hafner and Ross, 1983; Hafner, 1977). In addition, since depressive symptoms frequently covary with anxiety states in agoraphobia (Bowen and Kohut, 1979), then one would also expect more depressed agoraphobics to respond less favourably to treatment. If it is true that more severe agoraphobics respond less favourably to treatment, then it should follow that these individuals also demonstrate less pre-posttreatment improvement. These predictions are outlined below.

1. Pretreatment levels of generalized anxiety, phobic anxiety and depression are positively related to outcome generalized anxiety, phobic anxiety and depression.
 2. Pretreatment levels of generalized anxiety, phobic anxiety and depression are negatively related to reductions (from pre to posttreatment) in generalized anxiety, phobic anxiety and depression.
6. The generalized and phobic anxiety as well as the depressive symptoms associated with agoraphobia are considered major contributors to the development of avoidance behaviours, i.e. the lack of exposure practice (Mathews et al., 1981). If this is indeed so, then there should be a relationship between the severity of these symptoms and the initial amount of practice. Similarly, more severe agoraphobics might be expected to demonstrate less exposure practice throughout treatment, as well

as less improvement (change) in their practice behaviours.

These predictions are outlined in the following specific statements.

1. Pretreatment levels of generalized anxiety, phobic anxiety and depression are negatively related to the duration (total, mean) and frequency of baseline practice.
2. Pretreatment levels of generalized anxiety, phobic anxiety and depression are negatively related to the duration (total, mean) and frequency of overall practice.
3. Pretreatment levels of generalized anxiety, phobic anxiety and depression are negatively related to the change in the duration (total, mean) and frequency of practice.

H. It is a common sense notion that individuals who demonstrate higher pretreatment levels of generalized and phobic anxiety, should also experience more anxiety during initial as well as overall practices. If this is so, then individuals with higher levels of pretreatment generalized and phobic anxiety should also experience less change in the anxiety experienced during practice. Similarly, the reduction in generalized and phobic anxiety should relate to the change in the anxiety experienced during practice. These predictions are outlined below.

1. Pretreatment levels of generalized and phobic anxiety are positively related to the anxiety experienced during baseline as well as overall practice.

2. Pretreatment levels of generalized and phobic anxiety are negatively related to the change in anxiety during practice.

3. The reduction in generalized and phobic anxiety is positively related to the change in the anxiety experienced during exposure practice.

1. If a greater amount of baseline, as well as overall practice is predictive of favourable treatment outcome, then there should also be a relationship between the degree of change in practice behaviours and the reduction in generalized anxiety, phobic anxiety and depression. In addition, the degree of change in practice behaviours should also relate to treatment outcome. Similarly, the total amount of practice and the anxiety experienced during that practice, should be predictive of the reduction in the anxieties and depression. Specifically;

1. The degree of reduction in generalized anxiety, phobic anxiety and depression, is positively related to the degree of change in duration (total, mean) and frequency of practice.

2. The degree of change in duration (total, mean) and frequency of practice is negatively related to outcome generalized anxiety phobic anxiety and depression.

3. The duration (total, mean) and frequency of overall practice is positively related to the reduction in generalized anxiety, phobic anxiety and depression.

4. The anxiety experienced during practice is negatively related to the reduction in generalized anxiety, phobic anxiety and depression.

CHAPTER II

METHOD

The present study utilized the data collected from agoraphobic participants in a primarily behavioural group approach to the treatment of agoraphobia. The six groups of subjects who had completed this six-month treatment program were assessed at pre and posttreatment. In addition, behavioural diaries were kept by the subjects throughout the treatment program. These were used as an archival source of information regarding exposure practice.

Selection of subjects for the treatment program:

Subjects were obtained from the Outpatient Department of the Windsor Western Hospital Centre. The six groups of subjects were a sample seen over a three-year time span, with a total of 30 clients who had completed the program. There were six males and 24 females, with the size of individual groups ranging from 4-7. Drop-outs were not included. Each subject was initially interviewed in order to determine eligibility for the program. Here, certain criteria were applied to the diagnosis of "agoraphobic." These are listed below;

- (1) The frequent experience of anticipatory anxiety or phobic anxiety. This has been referred to as the "fear of fear",

and is manifested both cognitively (in thoughts such as "I will lose control") as well as physiologically (e.g. sweaty palms, tachycardia etc.). In addition, past experience with the occurrence of panic attacks, was an important criterion.

(2). Avoidance of the feared stimuli, sometimes at considerable inconvenience to self and others. This behaviour usually alleviates the phobic symptoms.

(3). The agoraphobic symptoms must be of primary importance to the individual, with no other psychological disorder requiring more immediate attention.

Subjects were accepted into the program on the basis of the interview. Each individual was then administered a battery of psychological tests which served as pretreatment measures. Subsequent to the diagnostic phase, clients were asked to carefully read and then sign an "Agoraphobia Group Contract" (Appendix B) which clearly outlined the conditions under which treatment would be offered. In addition, certain verbal agreements were made. This included subjects' restraining from any other form of psychotherapy for the duration of treatment. The purpose of this request was to avoid conflicting messages and potential confusion on the subject's part. In the case of those who were currently taking drugs in order to face feared situations, or even just to alleviate the anxiety, a resolution to eventually discontinue the use of such aids was also made. In order

to benefit from the program, a basic level of verbal competence was necessary.

A detailed description of the treatment program is available in Appendix C. A condensed description, which also includes the duration of each program stage, is available in Table 1.

Instruments

The variables which were measured at pre and posttreatment include the following; (1) generalized anxiety (2) phobic anxiety (3) depression and (4) locus of control. These variables were chosen on the premise that they are symptomatic of the agoraphobia syndrome. Similarly, the program goals were reflected in these variables. The behavioural diary variables which were utilized, included (1) duration of practice (2) frequency of practice (3) anxiety experienced during practice. The measurement of each variable is discussed below.

1. Generalized Anxiety: This variable was measured by the Psychasthenia (PT) scale of the Minnesota Multiphasic Personality Inventory (MMPI). The MMPI is an objective personality measure, composed of three validity scales and 10 clinical scales. The subject is required to sort each of 399 statements into three categories of True, False and Cannot Say. Statis-

TABLE 1

Condensed Program Description

Week No.	Activity
1 - 3	Orientation/Education: Familiarization with agoraphobia syndrome in terms of conditioning paradigms.
4 - 6	Didactics: Group discussions - occurred from here to end of treatment, where necessary.
7 - 15	Relaxation training: Deep muscle, followed by autogenic relaxation techniques.
16 - 17	Individual Goal Setting: Each subject setting up an individual hierarchy for desensitization.
17 - 24	Group Exposure: Real life exposure to generally feared stimuli, e.g. malls, elevators etc. Subjects were initially accompanied by ex-agoraphobic and therapist models. Subjects later acted as partners for each other.
24 - 30	Individual Exposure: Each subject attempted to expose himself/herself to stimuli of personal significance, i.e. stimuli which caused them anxiety.

tical studies regarding the test-retest reliability of the MMPI scales have indicated coefficients ranging from $r=.71$ to $r=.83$ (Hathaway and McKinley, 1940) and $r=.52$ to $r=.93$ (Holzberg and Alessi, 1949). In terms of the validity of the measure, high scores have been found to predict final clinical diagnosis in more than 60 per cent of new psychiatric admissions (Hathaway and McKinley, 1967). The PT scale includes items which reflect dread and anxiety, excessive sensitivity and moodiness. It is frequently used as an indicator of generalized anxiety.

2. Phobic Anxiety: A more specific type of anxiety, this can be defined as persistent responding with considerable anxiety in situations in which it is maladaptive to respond with more than mild anxiety. This variable was measured by the Fear Survey Schedule III (FSS III), an 87-item scale which was revised and extended by Wolpe and Lang (1964). The FSS III includes frequently encountered anxiety stimuli which are subclassified into six categories; A-animal, T-tissue damage, illness, death or associated stimuli, C-other classical phobias, S-social stimuli, N-noises and M-miscellaneous.

Subjects responded on a five-point Likert-type format which ranged from (0) not at all to (4) very much. The internal consistency reliability of the FSS has been found to be $r=.89$ for both sexes (Arrindell, 1980), $r=.88$ for men alone

and also $r=.88$ for women alone. Other researchers such as Wolpe and Lang (1964) have indicated coefficients as high as $r=.95$. Regarding validity, correlations of $r=.80$ and $r=.76$ have been found between the agoraphobia dimension of the Symptom Checklist-90 (SCL-90) and the agoraphobia factor of the FSS III and between the social inadequacy scale of the SCL-90 and the social anxiety factor of the FSS respectively. In addition to the total score on the FSS III, scores on the Agoraphobia Factor of the FSS III (Arrindell, 1980) were also utilized as measures of phobic anxiety.

Phobic anxiety as stated earlier, has been described by some as a fear of fear. Goldstein and Chambless (1978) view this a two-component fear, in which (1) thoughts of the negative consequences of panic attacks as well as (2) sensory cues associated with panic attacks, are involved. The final measures of phobic anxiety, the Agoraphobia Cognitions Questionnaire (ACQ) and the Body Sensations Questionnaire (BSQ) tap these two areas (Chambless, Gallagher and Bright, 1981b). The ACQ considers 15 thoughts commonly reported by agoraphobics, regarding the consequences of phobic anxiety. The frequency of their occurrence is rated on a five-point scale which ranges from "thought never occurs" to "thought always occurs when I am nervous." The BSQ lists 17 specific body sensations that agoraphobics have reportedly experienced and which increased their level of anxiety. Again, a five-

point scale is used, ranging from "not frightened or worried by this sensation" to "extremely worried by this sensation."

In a recently published paper, Chambless, Caputo, Bright and Gallagher (1984) found both the ACQ and BSQ to have reasonable reliability ($r=.75$ and $r=.68$ respectively). In addition, the tests were found to have both discriminant as well as construct validity.

3. Depression: This variable was measured by the Depression (D) scale of the MMPI, which has been widely used for the diagnosis of depression for clinical and research purposes. In addition, the Beck Depression Inventory (BDI) was also used.

The BDI is a self-report inventory consisting of 21 categories of symptoms and attitudes which include mood, irritability, loss of libido, etc. As described by Beck (1967) each category describes a specific behavioural manifestation of depression, and consists of a graded series of four self-evaluative statements. The statements are ranked to reflect the range of severity of the symptom, from neutral (0) to maximal (3) severity. Reliability studies (Beck, 1967) indicated coefficients as high as $r=.93$. A study done by Nussbaum, Wittig, Hanlon and Kurland (1963) utilizing clinical ratings of depression, the BDI and the D scale of the MMPI as criterion measures, indicated that the highest

correlation ($r=.75$) was between the MMPI and the BDI scores.

4. Locus of Control: Rotter's Internal/External (IE) scale was the measure of locus of control. Rotter's scale is comprised of 29 statements in a multiple-choice format and was devised to measure "people's generalized expectancies in learning situations regarding whether or not reinforcement, reward or success in these situations is dependent upon their own behaviour or is controlled by external forces, particularly luck or chance" (Rotter, 1960). The individual is asked to circle the statement that best describes his/her beliefs.

Internal consistency reliability estimates ranging from $r=.65$ to $r=.79$ have been found by Rotter (1966) with various populations. Similarly, test-retest reliability estimates ranged from $r=.60$ to $r=.83$. When correlated with other methods of assessing the same variable, Rotter reported "satisfactory" validity estimates (1966).

Behavioural Diary Variables: As suggested by Mathews et al., (1981) and Mavissakalian and Michelson (1983), behavioural diaries were kept by each subject in which exposure practice was recorded. At each weekly meeting, diaries were collected from subjects, and their progress or lack thereof was discussed. The practice variables which were derived from

the diary data included duration (total, mean), frequency and anxiety experienced during practice. It should be noted that separate scores were obtained for outings which were undertaken while the subject was alone, as opposed to those outings on which they were accompanied. Specifically, the diary variables included the following;

- (i) Total duration of outings: Each outing was recorded by the subject on the Behavioural Diary. The times of departure and return were also recorded. The duration (hrs.) of each outing could therefore be deduced from this information. Subjects indicated which outings were undertaken alone and which were accompanied (Appendix A).
- (ii) Mean duration of outings: This variable was operationally defined as the average amount of time spent per outing.
- (iii) Frequency of outings: Again available from the Behavioural Diaries, the number of outings completed by subjects could also be determined.
- (iv) Mean maximum subjective anxiety experienced during practice: Subjects were required to rate their highest level of anxiety experienced during each outing, on a scale which ranged from 0 (no anxiety) to 100 (maximum anxiety or panic). The average amount of anxiety experienced during the outings, was the measure utilized here, (see Appendix A).

Statistical Analysis

In order to test the first set of hypotheses regarding pre-posttreatment differences in anxiety, phobic anxiety, depression and locus of control, repeated measures analyses of variance (ANOVA) will be the statistical design used. Since in some cases more than one instrument was used to measure the same treatment effect, Pearson r correlations will be computed in an attempt at establishing a relationship between these instruments.

Correlational evidence (Pearson r) will be sought for the other hypotheses which are outlined in the Introduction. Relationships which do not achieve at least a .05 level of significance, will not be considered significant.

CHAPTER III

RESULTS

The results of the present study will be presented in two major parts. Part A will focus on the results of the repeated measures analyses of variance (ANOVA) for the first set of hypotheses regarding treatment effectiveness. In the event that more than one instrument was utilized to measure a particular treatment effect, Pearson r correlations between these instruments will also be presented.

The second part of the results (B-I) will focus on the correlational analyses (Pearson r_s) done to test the remaining hypotheses regarding exposure practice.

Part A

1. Anxiety: The anxiety hypothesis stated that there would be a decrease in generalized anxiety at posttreatment. The instrument used to measure this variable was the Psychasthenia (PT) scale of the MMPI. The analysis of variance results are summarized in Table 2. An F value of 40.54 is significant ($F_{.01}(1,29) = 7.60, p < .0001$). There was therefore a significant decrease in generalized anxiety at posttreatment.

2. Phobic Anxiety: The phobic anxiety hypothesis predicted a decrease in the same. The four measures of phobic anxiety

TABLE 2

Analysis of Variance Summary
Table for Psychasthenia (MMPI)

Source of Variation	SS	DF	MS	F
Subjects	7870.40	29		
Time	2208.26	1	2208.26	40.54**
Error	<u>1579.73</u>	<u>29</u>	54.47	
Total	11658.40	59		

** $p < .0001$

included (i) the Fear Survey Schedule III (FSS), (ii) the Agoraphobia Dimension of the FSS III, (iii) the Agoraphobia Cognitions Questionnaire and (iv) the Body Sensations Questionnaire. Table 3 summarizes the correlational relationship between these instruments. The coefficients which obtained significance ranged from $r=.41$ ($p<.05$) to $r=.70$ ($p<.01$), thereby supporting their use as related measures. However, it should be noted that in the case of the Agoraphobia Cognitions Questionnaire and the Body Sensations Questionnaire, a coefficient of only $r=.30$ was obtained, thus failing to achieve significance.

(i) Fear Survey Schedule; Table 4 summarizes the ANOVA results. An F value of 56.61 is significant at the .0001 level ($F_{.01}(1,29)=7.60$, $p<.0001$). A significant decrease in phobic anxiety as measured by the FSS, was demonstrated at posttreatment.

(ii) Agoraphobia Dimension of the FSS; Analysis of variance resulted in an F value which is significant, ($F_{.01}(1,29)=7.60$, $p<.0001$); see Table 5. A significant decrease in agoraphobic anxiety was also demonstrated at posttreatment.

(iii) Agoraphobia Cognitions Questionnaire; The results of the analysis of variance are summarized in Table 6. An F value of 30.61 is significant, ($F_{.01}(1,29)=7.60$, $p<.0001$). Agoraphobia cognitions also reduced significantly at post-

TABLE 3

Pearson r_s between
Measures of Phobic Anxiety

	FSS	AGFSS	ACQ	BSQ
FSS	1.00	0.70**	0.43**	0.48**
AGFSS	0.70**	1.00	0.41*	0.53**
ACQ	0.43**	0.41*	1.00	0.30
BSQ	0.48**	0.53**	0.30	1.00

N.B. - FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the Fear Survey Schedule
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire

* $p < .05$

** $p < .01$

TABLE 4

Analysis of Variance Summary
Table for the Fear Survey Schedule III

Source of Variation	SS	DF	MS	F
Subjects	94437.48	29		
Time	52984.81	1	52984.81	56.61**
Error	<u>27144.68</u>	<u>29</u>	936.02	
Total	174566.98	59		

** $p < .0001$

TABLE 5

Analysis of Variance Summary
Table for Agoraphobia Dimension/FSS

Source of Variation	SS	DF	MS	F
Subjects	2773.40	29		
Time	3681.66	1	3681.66	73.06**
Error	<u>1461.33</u>	<u>29</u>	50.39	
Total	7916.40	59		

** $p < .0001$

TABLE 6

Analysis of Variance Summary Table for the
Agoraphobia Cognitions Questionnaire - ACQ

Source of Variation	SS	DF	MS	F
Subjects	2939.68	29		
Time	1260.41	1	1260.41	30.61**
Error	<u>1194.08</u>	<u>29</u>	41.17	
Total	5394.18	59		

**p < .0001

treatment.

(iv) Body Sensations Questionnaire; Table 7 summarizes the ANOVA results. There was a significant F value (28.08) at the .0001 level of significance, ($F_{.01}(1,29)=7.60$, $p < .0001$). Bodily sensations related to phobic anxiety were also reduced significantly at posttreatment.

The ANOVA results for the phobic anxiety measures, strongly support hypothesis two. There was an observed significant decrease in the posttreatment means, on each of the four measures.

3. Depression: The third hypothesis predicted a decrease in depression. Since two instruments were used here, a Pearson r correlation was performed. These results indicated a correlation coefficient of $r=.64$ ($p < .01$) between (i) the Depression scale of the MMPI and (ii) the Beck Depression Inventory, which supports their use as assessments of related aspects of depression.

(i) Depression scale - MMPI; The analysis of variance results are summarized in Table 8. An F value of 38.33 is significant at the .0001 level ($F_{.01}(1,29)=7.60$, $p < .0001$). A significant posttreatment decrease in depression as measured by the D scale was therefore demonstrated.

(ii) Beck Depression Inventory; Table 9 summarizes the analysis of variance results. An F value of 43.73 is

TABLE 7

Analysis of Variance Summary Table for
the Body Sensations Questionnaire - BSQ

Source of Variation	SS	DF	MS	F
Subjects	7231.60	29		
Time	2829.06	1	2829.06	28.08**
Error	<u>2921.93</u>	<u>29</u>	100.75	
Total	12982.60	59		

** $p < .0001$

TABLE 8

Analysis of Variance Summary
Table for the Depression Scale-MMPI

Source of Variation	SS	DF	MS	F
Subjects	10981.35	29		
Time	4116.81	1	4116.81	38.33**
Error	<u>3114.68</u>	<u>29</u>	107.40	
Total	18212.85	59		

** $p < .0001$

TABLE 9

Analysis of Variance Summary Table
for the Beck Depression Inventory

Source of Variation	SS	DF	MS	F
Subjects	4035.93	29		
Time	1685.40	1	1685.40	43.73**
Error	<u>1117.60</u>	<u>29</u>	38.53	
Total	6838.93	59		

** $p < .0001$

significant at the .0001 level ($F_{.01}(1,29)=7.60, p < .0001$). Again, a significant decrease in depression at posttreatment was observed.

The depression hypothesis was supported by the significant decrease in posttreatment means, on both measures of depression.

4. Locus of Control: Hypothesis four predicted no change in locus of control. Rotter's IE scale was the instrument used here. As predicted, analysis of variance results indicated no significant differences between the means (Table 10).

Thus, the locus of control hypothesis was supported by the data.

Parts B - I

The remaining set of hypotheses focused on the relationships between practice and other psychometrically assessed subjective variables. As previously mentioned, practice outings which were undertaken alone (AL) were considered separately from those on which the subject was accompanied (AC). In addition, it will be recalled that there were four measures of phobic anxiety and two measures of depression.

TABLE 10

Analysis of Variance Summary
Table for Locus of Control

Source of Variation	SS	DF	MS	F
Subjects	1087.35	29		
Time	8.81	1	8.81	2.44
Error	<u>104.68</u>	<u>29</u>	3.60	
Total	1200.85	59		

Part B(i)

The general hypothesis to be tested here, predicted a negative relationship between the amount of exposure practice and treatment outcome. The specific hypotheses which followed are individually addressed below;

1. "The total duration of exposure practice is negatively related to outcome generalized anxiety, phobic anxiety and depression." Table 11 summarizes the results of Pearson r correlations. There were no significant relationships between total duration of practice and outcome generalized anxiety, phobic anxiety or depression.
2. The second hypothesis predicted a negative relationship between the mean duration of practice and outcome generalized anxiety, phobic anxiety and depression. Again, no significant relationships were found (Table 12).
3. Similarly, the predicted negative relationship between the frequency of practice and outcome generalized anxiety, phobic anxiety and depression, was unsupported (Table 13). There were no relationships of significance.

Part B(ii)

The alternative hypothesis that no relationship exists between the amount of practice and treatment outcome, was supported by the data. Neither duration (total, mean) nor frequency of practice were significantly related to outcome

TABLE 11

Pearson r_s between the Total Duration
of Practice and Outcome Measures

	DAL	DAC
Generalized Anxiety - PT	-0.12	0.01
Phobic Anxiety - FSS	-0.19	0.17
- AGFSS	-0.12	0.12
- ACQ	-0.18	0.03
- BSQ	-0.14	0.01
Depression - D	-0.07	-0.13
- BDI	-0.09	-0.02

N.B.- DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 PT = Psychasthenia scale/MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale/MMPI
 BDI = Beck Depression Inventory

TABLE 12

Pearson r_s between the Mean Duration
of Practice and Outcome Measures

	\bar{X} DAL	\bar{X} DAC
Generalized Anxiety - PT	-0.01	-0.07
Phobic Anxiety - FSS	-0.29	-0.26
- AGFSS	-0.24	-0.17
- ACQ	-0.16	-0.16
- BSQ	-0.10	-0.13
Depression - D	-0.09	-0.17
- BDI	-0.12	-0.17

N.B. - \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 PT = Psychasthenia scale/MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor/FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale/MMPI
 BDI = Beck Depression Inventory

TABLE 13

Pearson r_s between the Frequency
of Practice and Outcome Measures

	FAL	FAC
Generalized Anxiety - PT	-0.10	0.11
Phobic Anxiety - FSS	0.01	0.30
- AGFSS	0.03	0.22
- ACQ	-0.12	0.13
- BSQ	-0.07	0.10
Depression - D	0.04	0.01
- BDI	0.01	0.10

N.B. - FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

generalized anxiety, phobic anxiety or depression. See Tables 11 - 13.

Part C

In this section, a positive relationship between the amount of anxiety experienced during practice and outcome generalized anxiety, phobic anxiety and depression, was predicted. The results of Pearson r correlations presented in Table 14, clearly support this prediction. There were positive significant relationships ranging from $r=.36$ ($p<.05$) to $r=.63$ ($p<.01$), between the anxiety experienced during practice (while alone or accompanied) and all measures of anxiety, phobic anxiety and depression.

Part D

Part D addressed the issue of baseline practice.

1. The first hypothesis here, predicted a positive relationship between the duration (total, mean) and frequency of baseline practice and the duration (total, mean) and frequency of the overall amount of practice. Table 15 outlines these results. Significant relationships exist between the following variables;

- (i) The duration of baseline practice while accompanied and the duration of overall practice while alone ($r=.47$, $p<.01$).
- (ii) The mean duration of baseline practice while alone and

TABLE 14

Pearson r_s between the Anxiety experienced
during Practice and Outcome Measures

	AAL	AAC
Generalized Anxiety - PT	0.52**	0.55**
Phobic Anxiety - FSS	0.46**	0.59**
- AGFSS	0.58**	0.57**
- ACQ	0.37*	0.36*
- BSQ	0.47**	0.43**
Depression - D	0.52**	0.39*
- BDI	0.63**	0.60**

** $p < .01$ * $p < .05$

N.B. - AAL = Anxiety during practice while alone
 AAC = Anxiety during practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

TABLE 15

Pearson r_s between the Duration (total, mean) and Frequency of Baseline Practice and Overall Practice

	Baseline Practice					
	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Overall Practice						
DAL	0.03	0.47**	0.42*	0.32	0.03	0.24
DAC	-0.16	0.31	0.01	0.67**	-0.10	0.49**
\bar{X} DAL	-0.05	0.11	0.59**	0.55**	-0.20	-0.19
\bar{X} DAC	-0.05	0.38*	0.49**	0.73**	-0.20	-0.31
FAL	0.10	0.11	-0.07	-0.23	0.07	0.38*
FAC	-0.13	0.31	-0.22	0.07	-0.08	0.73**

** $p < .01$ * $p < .05$

N.B. DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied

- the duration of overall practice while alone ($\underline{r}=.42$, $\underline{p}<.05$).
- (iii) The mean duration of baseline practice when accompanied and the duration of overall practice when accompanied ($\underline{r}=.67$, $\underline{p}<.01$).
- (iv) The frequency of baseline practice when accompanied and the duration of overall practice when accompanied ($\underline{r}=.49$, $\underline{p}<.01$).
- (v) The duration of baseline practice when accompanied and the mean duration of overall practice when accompanied ($\underline{r}=.38$, $\underline{p}<.05$).
- (vi) The mean duration of baseline practice when alone and the mean duration of overall practice when alone ($\underline{r}=.59$, $\underline{p}<.01$).
- (vii) The mean duration of baseline practice when accompanied and the mean duration of overall practice when alone ($\underline{r}=.55$, $\underline{p}<.01$).
- (viii) The mean duration of baseline practice when alone and the mean duration of overall practice when accompanied ($\underline{r}=.49$, $\underline{p}<.01$).
- (ix) The mean duration of baseline practice when accompanied and the mean duration of overall practice when accompanied ($\underline{r}=.73$, $\underline{p}<.01$).
- (x) The frequency of baseline practice when accompanied and the frequency of overall practice when alone ($\underline{r}=.38$, $\underline{p}<.05$).
- (xi) The frequency of baseline practice when accompanied and the frequency of overall practice when accompanied ($\underline{r}=.73$, $\underline{p}<.01$).

2. The second hypothesis predicted a negative relationship between duration (total, mean) and frequency of baseline practice, and outcome generalized anxiety, phobic anxiety and depression. The results of Pearson r correlations (Table 16) do not support this prediction. There were no significant relationships between the amount of baseline practice and treatment outcome.

Part E

The relationship between the amount of baseline practice and the degree of reduction in outcome measures, was investigated here. Specifically, it was hypothesized that the duration (total, mean) and frequency of baseline practice, would be positively related to the degree of reduction in generalized anxiety, phobic anxiety and depression. Table 17 indicates that with two exceptions, there were no other significant relationships between these variables. The two exceptions are listed below;

(i) The mean duration of baseline practice when alone and the degree of reduction in phobic anxiety as measured by the Agoraphobia Factor of the FSS ($r=.41$, $p<.05$).

(ii) The mean duration of baseline practice when alone, related to the degree of reduction in depression as measured by the D scale of the MMPI ($r=.35$, $p<.05$). It should be noted that these relationships just barely obtained significance at the

TABLE 16

Pearson r s between Amount of Baseline Practice
and Outcome Measures

	Baseline Practice					
	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Generalized Anxiety - PT	-0.24	0.04	-0.12	-0.02	-0.13	0.16
Phobic Anxiety						
- FSS	-0.10	0.03	-0.32	-0.11	0.01	0.25
- AGFSS	-0.08	0.01	-0.31	-0.22	0.01	0.31
- ACQ	-0.08	0.07	-0.24	-0.16	0.01	0.31
- BSQ	0.09	0.04	0.08	-0.09	0.17	0.25
Depression - D	-0.07	-0.15	-0.16	-0.19	0.03	0.08
- BDI	-0.09	-0.10	-0.15	-0.31	-0.00	0.21

N.B. - DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied

PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

TABLE 17.

Pearson r_s between Amount of Baseline Practice
and the Degree of Reduction in Outcome Measures

	Baseline Practice					
	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Generalized Anxiety - PT	0.20	-0.11	0.25	-0.08	0.09	0.08
Phobic Anxiety						
- FSS	-0.21	-0.09	0.27	0.03	-0.25	-0.05
- AGFSS	-0.24	-0.06	0.41*	0.22	-0.28	-0.09
- ACQ	-0.05	0.09	0.31	0.22	-0.11	-0.14
- BSQ	-0.03	-0.10	0.28	0.07	-0.07	-0.17
Depression						
- D	-0.08	-0.01	0.35*	0.12	-0.21	0.07
- BDI	-0.24	0.25	0.12	0.23	-0.26	0.24

* $p < .05$

N.B. - DAL = Duration of Practice while alone
 DAC = Duration of Practice while accompanied
 \bar{X} DAL = Mean duration of Practice while alone
 \bar{X} DAC = Mean duration of Practice while accompanied
 FAL = Frequency of Practice while alone
 FAC = Frequency of Practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

.05 level.

Part F

The psychometrically assessed subjective variables of generalized anxiety, phobic anxiety and depression, were addressed in this section.

1. The first hypothesis predicted a positive relationship between pretreatment and outcome levels of generalized anxiety, phobic anxiety and depression. Table 18 outlines the results. The following relationships were found;

(i) Pretreatment generalized anxiety was related to outcome generalized anxiety ($r=.66$, $p<.01$); to phobic anxiety as measured by the Agoraphobia Cognitions Questionnaire ($r=.51$, $p<.01$); phobic anxiety as measured by the Body Sensations Questionnaire ($r=.37$, $p<.05$) and depression as measured by the D scale of the MMPI, ($r=.61$, $p<.01$).

(ii) Pretreatment phobic anxiety (FSS) was related to outcome generalized anxiety ($r=.38$, $p<.05$), and to phobic anxiety measured by the FSS ($r=.56$, $p<.01$), the Agoraphobia Factor of the FSS ($r=.42$, $p<.05$) and the Agoraphobia Cognitions Questionnaire ($r=.39$, $p<.05$). There was also a relationship between pretreatment phobic anxiety (FSS) and outcome depression on the Beck Depression Inventory ($r=.36$, $p<.05$).

(iii) Pretreatment agoraphobic cognitions (ACQ) related to outcome phobic anxiety as measured by the FSS ($r=.38$, $p<.05$)

TABLE 18

Pearson r_s between Pretreatment and Outcome
Generalized anxiety, Phobic anxiety, and Depression

	Pretreatment						
	PT	FSS	AGFSS	ACQ	BSQ	D	BDI
Outcome							
Generalized Anxiety -PT	0.66**	0.38*	0.07	0.33	0.16	0.58**	0.54**
Phobic Anxiety-FSS	0.29	0.56**	0.19	0.38*	0.19	0.22	0.56**
- AGFSS	0.22	0.42*	0.31	0.32	0.28	0.15	0.58**
- ACQ	0.51**	0.39*	0.15	0.43**	0.20	0.24	0.43*
- BSQ	0.37*	0.27	0.13	0.39*	0.42**	0.21	0.37*
Depression							
- D	0.61**	0.31	-0.03	0.09	0.01	0.56**	0.46**
-BDI	0.28	0.36*	0.14	0.21	0.12	0.37*	0.57**

* $p < .05$ ** $p < .01$

N.B. - PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

the ACQ ($r=.43$, $p<.01$) and the Body Sensations Questionnaire ($r=.39$, $p<.05$).

(iv) Pretreatment bodily sensations (BSQ) only related to outcome phobic anxiety which was measured by the same BSQ ($r=.42$, $p<.01$).

(v) Pretreatment depression (D-MMPI) was related to outcome generalized anxiety ($r=.58$, $p<.01$) and to depression on both the D scale ($r=.56$, $p<.01$) as well as the Beck Depression Inventory ($r=.37$, $p<.05$).

(vi) Pretreatment levels of depression, measured by the BDI, correlated with all outcome measures of generalized anxiety, phobic anxiety and depression, (Table 18).

2. The second hypothesis in this section predicted that pretreatment levels of generalized anxiety, phobic anxiety and depression would be related negatively to the reduction (from pre to posttreatment) in the same. Table 19 outlines the results of Pearson r_s . All (but one) of the significant relationships were not negative as predicted, but positive. This indicates that individuals with higher pretreatment scores also experienced a greater amount of reduction in anxiety (generalized and phobic) and depression. The one exception was that of pretreatment levels of generalized anxiety and the reduction in agoraphobia cognitions ($r=-.46$, $p<.01$). Specific positive relationships are outlined below;

(i) Pretreatment generalized anxiety related to the degree

TABLE 19

Pearson r_s between Pretreatment Measures
and the Degree of Reduction at Outcome

	Pretreatment Measures						
	PT	FSS	AGFSS	ACQ	BSQ	D	BDI
Degree of Reduction							
Generalized Anxiety - PT	0.41*	0.15	0.24	-0.29	0.38*	-0.33	0.05
Phobic Anxiety - FSS	0.12	0.28	0.43**	-0.03	0.22	0.20	-0.03
-AGFSS	0.05	0.27	0.62**	0.09	0.23	0.13	-0.09
-ACQ	0.46**	-0.06	0.16	0.34	0.02	-0.27	-0.16
-BSQ	0.06	0.15	0.34	-0.11	0.47**	0.17	0.03
Depression							
-D	0.17	0.14	0.33	-0.13	0.41*	0.37*	0.11
-BDI	0.40*	0.40*	0.36*	0.21	0.40*	0.37*	0.60**

* $p < .05$ ** $p < .01$

N.B. - PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

of reduction in generalized anxiety ($r=.41$, $p<.05$), agoraphobic cognitions ($r=.46$, $p<.01$) and depression as measured by the BDI ($r=.40$, $p<.05$).

(ii) As a measure of phobic anxiety, pretreatment levels on the FSS related to the reduction in depression on the BDI ($r=.40$, $p<.05$).

(iii) Pretreatment levels of agoraphobic anxiety (AGFSS) related to reductions in phobic anxiety on the FSS ($r=.43$, $p<.01$) and the AGFSS ($r=.62$, $p<.01$), as well as to reductions in depression on the BDI ($r=.36$, $p<.05$).

(iv) Pretreatment levels of bodily sensations associated with agoraphobia, related to the degree of reduction in generalized anxiety ($r=.38$, $p<.05$), phobic anxiety as measured by the BSQ ($r=.47$, $p<.01$) and depression on both the D scale of the MMPI ($r=.41$, $p<.05$) and the BDI ($r=.40$, $p<.05$).

(v) Pretreatment depression (D scale) was predictive of the degree of reduction in depression on the D scale ($r=.37$, $p<.05$) and the BDI ($r=.37$, $p<.05$).

(vi) The Beck Depression Inventory (BDI) pretreatment scores were related only to the degree of reduction in depression, as measured by the same scale ($r=.60$, $p<.01$).

Part 6

In order to test for potential relationships between pretreatment measures and the amount of practice, specific predic-

tions were made.

1. The first hypothesis predicted a negative relationship between pretreatment levels of generalized anxiety, phobic anxiety and depression, and the duration (total, mean) and frequency of baseline practice. Table 20 indicates that with two exceptions, the results of Pearson r_s did not support the prediction. However, the duration of baseline practice while alone, related to pretreatment levels of phobic anxiety as measured by the FSS ($r = -.35$, $p < .05$) as well as the Agoraphobia Factor of the FSS ($r = -.36$, $p < .05$). Although the frequency of baseline practice while accompanied related significantly to pretreatment levels of depression on the BDI, the correlation was a positive one ($r = .38$, $p < .05$).
2. In the second hypothesis, it was predicted that a negative correlation would exist between pretreatment levels of generalized anxiety, phobic anxiety and depression, and the duration (total, mean) as well as the frequency of overall practice. As shown in Table 21, there were only two significant correlations. Pretreatment phobic anxiety as measured by the Agoraphobia Cognitions Questionnaire, was predictive of the duration of overall practice while alone ($r = -.46$, $p < .01$). Agoraphobic cognitions at pretreatment were also predictive of the frequency of overall practice while alone ($r = -.36$, $p < .05$).
3. Hypothesis three predicted a negative relationship between pretreatment measures of generalized anxiety, phobic

TABLE 20

Pearson r s between Pretreatment Measures
and Amount of Baseline Practice

	Baseline Practice					
	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Pretreatment						
Generalized Anxiety						
- PT	-0.07	-0.04	0.08	-0.08	-0.05	0.22
Phobic Anxiety						
- FSS	-0.35*	-0.05	-0.10	-0.09	-0.25	0.25
- AGFSS	-0.36*	-0.06	0.18	0.03	-0.31	0.18
- ACQ	-0.17	0.20	0.08	0.06	-0.12	0.23
- BSQ	-0.06	-0.06	0.08	-0.09	0.11	0.07
Depression						
- D	-0.16	-0.18	0.17	-0.09	-0.16	0.17
- BDI	-0.29	0.12	-0.04	-0.02	-0.22	0.38*

* $p < .05$

N.B. - DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

TABLE 21

Pearson r s between Pretreatment Measures
and the Total Amount of Practice

	Total Practice					
	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Pretreatment						
Generalized Anxiety						
- PT	0.05	-0.04	0.06	0.01	0.15	0.11
Phobic Anxiety						
- FSS	-0.15	0.03	-0.03	-0.07	0.01	0.24
- AGFSS	0.06	0.09	-0.09	-0.26	0.02	0.19
- ACQ	-0.46**	-0.03	-0.13	-0.14	-0.36*	0.07
- BSQ	-0.21	-0.21	-0.13	-0.03	-0.13	-0.10
Depression						
- D	0.15	-0.06	0.10	-0.13	0.18	0.11
- BDI	-0.07	0.17	-0.10	-0.12	-0.04	0.26

* $p < .05$ ** $p < .01$

- N.B. - DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

anxiety and depression, and the degree of change in exposure practice. Again, only two relationships achieved significance, with one of these being a positive correlation (Table 22). Pretreatment phobic anxiety on the Agoraphobia Cognitions Questionnaire was predictive of the degree of change in the duration of practice while alone ($r = -.41, p < .01$). However, there was a positive relationship between the change in frequency of practice while alone, and pretreatment depression on the D scale ($r = .36, p < .05$).

Part H

The predictions in this section focused upon the relationship between the anxiety experienced during practice and the psychometrically assessed subjective variables of generalized anxiety and phobic anxiety. These are outlined;

1. "Pretreatment levels of generalized and phobic anxiety are positively related to the anxiety experienced during baseline practice, as well as overall practice." Only three correlations supported this prediction (Table 23). Anxiety experienced during baseline practice while accompanied, related to generalized anxiety ($r = .38, p < .05$) as well as to phobic anxiety on the FSS ($r = .37, p < .05$). The anxiety experienced during overall practice (while accompanied) was related to phobic anxiety on the FSS ($r = .39, p < .05$).

TABLE 22

Pearson r_s between Pretreatment Measures
and the Degree of Change in Practice

	Change in Practice					
	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Pretreatment						
Generalized Anxiety						
- PT	0.07	0.00	-0.21	-0.09	0.24	-0.17
Phobic Anxiety						
- FSS	-0.09	0.26	-0.09	-0.10	0.21	0.06
- AGFSS	-0.06	0.19	0.16	-0.00	0.21	-0.07
- ACQ	-0.41**	-0.07	0.26	0.18	-0.14	0.02
- BSQ	-0.25	0.03	0.07	-0.04	-0.09	-0.04
Depression						
- D	0.22	-0.02	-0.12	-0.11	0.36*	-0.24
- BDI	0.03	-0.03	-0.06	-0.04	0.18	-0.25

* $p < .05$ ** $p < .01$

N.B. - DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

TABLE 23

Pearson r_s between Pretreatment Generalized and Phobic Anxiety, and the Anxiety experienced during Baseline and Total Practice

	Anxiety experienced during Practice			
	BAAL	BAAC	TAAL	TAAC
Pretreatment				
Generalized Anxiety				
- PT	0.30	0.38*	0.25	0.26
Phobic Anxiety				
- FSS	-0.02	0.37*	0.23	0.39*
- AGFSS	0.16	0.23	0.24	0.29
- ACQ	0.21	0.19	0.34	0.29
- BSQ	0.23	0.01	0.11	0.09

* $p < .05$

N.B. - BAAL = Anxiety experienced during baseline practice/alone
 BAAC = Anxiety experienced during baseline practice/accompanied
 TAAL = Anxiety experienced during total practice/alone
 TAAC = Anxiety experienced during total practice/accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire

2. Hypothesis two predicted that pretreatment levels of generalized and phobic anxiety would be negatively related to the change in anxiety during practice. Table 24 outlines the results of Pearson r_s . This hypothesis was not supported by the data.

3. The third hypothesis here, predicted a positive relationship between the reduction in generalized and phobic anxiety, and the change in the anxiety experienced during exposure practice. The only relationship which supported this prediction, occurred between the degree of reduction in phobic anxiety on the Agoraphobia Factor of the FSS and the change in anxiety experienced during practice, while alone ($r=.43$, $p<.01$), see Table 25.

Part I

Again addressing the issue of change scores, this final section dealt with the relationship between the degree of reduction in the psychometrically assessed subjective variables, and the change in duration and frequency of practice. The relationship of outcome generalized anxiety, phobic anxiety and depression to the amount of change in practice behaviours, was also addressed.

1. The first prediction stated that the degree of reduction in generalized anxiety, phobic anxiety and depression would be positively related to the change in the duration (total, mean) and frequency of exposure practice. Table

TABLE 24

Pearson r_s between Pretreatment Generalized and Phobic Anxiety,
and the Change in Anxiety experienced during Practice

	Change in Anxiety during Practice	
	CAAL	CAAC
Pretreatment		
Generalized Anxiety - BT	-0.06	-0.11
Phobic Anxiety		
- FSS	0.13	-0.01
- AGFSS	-0.13	-0.06
- ACQ	0.12	0.22
- BSQ	-0.10	0.04

N.B. - CAAL = Change in the anxiety experienced during practice while alone

CAAC = Change in the anxiety experienced during practice while accompanied

PT = Psychasthenia scale of the MMPI

FSS = Fear Survey Schedule

AGFSS = Agoraphobia Factor of the FSS

ACQ = Agoraphobia Cognitions Questionnaire

BSQ = Body Sensations Questionnaire

TABLE 25

Pearson r_s between the Reduction in Generalized and Phobic Anxiety, and the Change in the Anxiety experienced during Practice

	Change in Anxiety during Practice	
	CAAL	CAAC
Degree of Reduction		
Generalized Anxiety		
- PT	0.24	0.14
Phobic Anxiety- FSS	0.31	0.10
- AGFSS	0.43**	0.22
- ACQ	0.12	0.03
- BSQ	0.24	0.13

** $p < .01$

N.B. - CAAL = Change in the anxiety experienced during practice while alone

CAAC = Change in the anxiety experienced during practice while accompanied

PT = Psychasthenia scale of the MMPI

FSS = Fear Survey Schedule

AGFSS = Agoraphobia Factor of the FSS

ACQ = Agoraphobia Cognitions Questionnaire

BSQ = Body Sensations Questionnaire

26 indicates that only the change in mean duration of practice when alone, correlated significantly with the reduction in phobic anxiety on the Agoraphobia Cognitions Questionnaire ($r=.35$, $p < .05$).

2. The second hypothesis predicted a negative correlation between outcome generalized anxiety, phobic anxiety and depression, and the amount of change in duration (total, mean) and frequency of exposure practice. Table 27 indicates that this hypothesis was not supported by the data. None of the correlations achieved significance.

3. Hypothesis three predicted that the duration (total, mean) and frequency of total practice, would be positively related to the reduction in generalized anxiety, phobic anxiety and depression. Again, this prediction was not supported by the data (Table 28). None of the correlations achieved significance.

4. The final hypothesis predicted a negative correlation between the anxiety experienced during practice and the reduction in generalized anxiety, phobic anxiety and depression. Table 29 outlines the results. Only two correlations were significant. The anxiety experienced during practice while alone, was predictive of the reduction in bodily sensations (BSQ) associated with phobic anxiety ($r=-.35$, $p < .05$). The anxiety experienced during practice while accompanied, was predictive of the reduction in generalized anxiety ($r=-.35$, $p < .05$).

TABLE 26

Pearson r_s between the Change in Amount of Practice
and the Reduction in Generalized Anxiety,
Phobic Anxiety and Depression

	Change in Practice					
	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Reduction Generalized Anxiety						
- PT	0.06	-0.08	0.00	-0.16	-0.14	0.00
Phobic Anxiety						
- FSS	-0.14	-0.12	0.03	-0.00	-0.26	-0.19
- AGFSS	-0.08	-0.07	0.13	0.00	-0.23	-0.12
- ACQ	-0.10	0.08	0.35*	0.22	0.01	-0.19
- BSQ	-0.01	-0.10	0.08	-0.00	-0.06	-0.17
Depression						
- D	-0.09	0.01	0.05	-0.01	0.32	0.07
- BDI	-0.04	0.07	-0.27	0.08	-0.21	0.09

* $p < .05$

- N.B. - DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

TABLE 27

Pearson r_s between the Change in Practice
and Outcome Measures

	Change in Practice					
	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Outcome Measures						
Generalized Anxiety						
- PT	0.13	-0.06	-0.18	0.03	0.13	-0.10
Phobic Anxiety						
- FSS	-0.20	0.10	0.00	-0.07	-0.05	-0.11
- AGFSS	-0.17	0.11	0.01	0.17	-0.05	-0.23
- ACQ	-0.21	0.02	-0.09	-0.06	0.09	-0.17
- BSQ	-0.23	-0.07	-0.05	-0.04	-0.15	-0.20
Depression						
- D	0.11	-0.01	-0.16	-0.09	0.03	-0.15
- BDI	-0.00	0.02	0.03	-0.24	-0.00	-0.20

- N.B. - DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

TABLE 28

Pearson r_s between the Total Amount of Practice
and the Reduction in Generalized Anxiety,
Phobic Anxiety and Depression

	DAL	DAC	\bar{X} DAL	\bar{X} DAC	FAL	FAC
Reduction						
Generalized Anxiety						
- PT	0.21	-0.07	-0.00	-0.04	0.31	0.00
Phobic Anxiety						
- FSS	0.01	-0.17	0.16	0.03	0.00	-0.12
- AGFSS	0.07	-0.01	0.25	0.14	-0.00	-0.01
- ACQ	0.16	-0.06	0.02	0.08	-0.16	-0.07
- BSQ	-0.17	-0.21	0.01	0.10	-0.04	-0.19
Depression						
- D	0.23	0.08	0.21	0.06	0.13	0.10
- BDI	0.01	0.23	0.08	0.11	-0.06	0.20

N.B. - DAL = Duration of practice while alone
 DAC = Duration of practice while accompanied
 \bar{X} DAL = Mean duration of practice while alone
 \bar{X} DAC = Mean duration of practice while accompanied
 FAL = Frequency of practice while alone
 FAC = Frequency of practice while accompanied
 PT = Psychasthenia scale of the MMPI
 FSS = Fear Survey Schedule
 AGFSS = Agoraphobia Factor of the FSS
 ACQ = Agoraphobia Cognitions Questionnaire
 BSQ = Body Sensations Questionnaire
 D = Depression scale of the MMPI
 BDI = Beck Depression Inventory

TABLE 29

Pearson r_s between the Anxiety experienced during Practice
and the Reduction in Generalized Anxiety,
Phobic Anxiety and Depression

		AAL	AAC
Reduction			
Generalized Anxiety - PT		-0.33	-0.35*
Phobic Anxiety			
	- FSS	-0.31	-0.31
	- AGFSS	-0.26	-0.21
	- ACQ	-0.12	-0.13
	- BSQ	-0.35*	-0.34
Depression			
	- D	-0.19	-0.08
	- BDI	0.00	0.05

* $p < .05$

N.B. - AAL = Anxiety experienced during practice while alone
AAC = Anxiety experienced during practice while accompanied
PT = Psychasthenia scale of the MMPI
FSS = Fear Survey Schedule
AGFSS = Agoraphobia Factor of the FSS
ACQ = Agoraphobia Cognitions Questionnaire
BSQ = Body Sensations Questionnaire
D = Depression scale of the MMPI
BDI = Beck Depression Inventory

CHAPTER IV

DISCUSSION

The primary focus of this archival study involved the relationships between amount of practice, symptom severity, outcome status and positive change. However, prior to a discussion of the results regarding these relationships, the issue of treatment outcome must first be addressed. Since the efficacy of in-vivo exposure to feared stimuli has been repeatedly demonstrated in well-controlled studies (Watson et al., 1973; Mathews et al., 1981; Barlow et al., 1970; Emmelkamp and Wessels, 1975), the author proposed that these findings should generalize to the present study, in which in-vivo exposure was utilized and similar measurements made. The results of repeated measures analyses of variance (ANOVA) indicated significant reductions at post-treatment in all measures of generalized anxiety, phobic anxiety and depression. Similarly, the prediction that there would be no significant shift in locus of control from pre to posttreatment, was supported by the data. Thus all of the hypotheses regarding treatment outcome were verified. Since the general pattern of results found in controlled studies has been precisely verified in this clinical sample, the generalizability of findings in the present study is enhanced.

Although the efficacy of specific treatment stages

cannot be separated out, anecdotal evidence suggests that the relaxation phase of the systematic desensitization, played a major role in the reduction of avoidance behaviours. This finding was also reported by Linder (1981) who stated that "all patients reported the impression that ... the relaxation exercises ... were a helpful procedure which lent itself well to transfer to the in-vivo practice sessions." Subjects in the present study, reported that the control which was afforded by the relaxation techniques, provided them with the opportunity to experience decreased anxiety while still in the feared situation. This also led to increased perceptions of self-efficacy. The relaxation training had the additional function of providing the subjects with a coping mechanism in the face of panic attacks. This was reportedly quite facilitative during exposure, in terms of anxiety reduction in-vivo. The probability of continued attempts at exposure practice therefore may have been increased.

Another factor which reportedly influenced behaviour during treatment, was the Agoraphobia Group Contract. Since the agoraphobic's primary tendency is towards avoidance, these contracts required a commitment to the program which might otherwise quite easily be broken if no agreement were to be signed. Again, Linder's (1981) findings concur with

those of the present study. His patients reported that the contracts were "essential to behavioural improvement" and "a forum from which to approach firm patient commitment."

Although such anecdotal evidence is interesting, further consideration of contributing factors to the observed treatment effectiveness is a major point for consideration. Here, the relationship between practice and other psychometrically assessed subjective variables was investigated. The results are discussed in the following section.

Contributing Factors in Treatment Effectiveness

In spite of the widely held belief that amount of practice is directly related to treatment outcome, (Stern and Marks, 1973; Mathews et al., 1981; Rapp and Thomas, 1982), the present author found no relationship between these variables. This finding was remarkable and consistent. Specifically, neither mean duration, total duration nor frequency of practice, were predictive of outcome status. It will be recalled that although unexpected, Mavissakalian and Michelson (1983) also found no relationship between amount of practice and outcome status. These authors offered no clear explanation for these unusual findings. One could propose that since most of the outcome variance is accounted for by pretreatment scores, the existing positive correlation

between pre and posttreatment measures of generalized anxiety, phobic anxiety and depression (Table 18) could account for the lack of a relationship between amount of practice and outcome status. However, outcome scores are not change scores, which do take into account the amount of variance in pretreatment scores. If amount of practice is indeed a major determinant of positive outcome, then this should be reflected in the relationship between the amount of practice and the degree of reduction in generalized anxiety, phobic anxiety and depression. The results did not support this latter prediction (Table 28). However, it is possible that the amount of change in practice behaviours could elucidate the role of this variable. Correlations which were performed to test the relationship between the amount of change in practice behaviours and outcome measures, indicated that these variables were not significantly related. In addition, the reduction in generalized anxiety, phobic anxiety and depression was in most cases, not significantly related to changes in practice behaviours. These findings regarding exposure practice, suggest that duration and frequency of practice are not major determinants of either treatment outcome, or therapeutic change.

If this is so, then the particular aspect of in-vivo exposure which facilitates improvement, is left to be discovered. Here, Mavissakalian and Michelson (1983) again

reported an interesting finding. They stated that of all the practice variables, the anxiety experienced during practice was most predictive of outcome status. The present author investigated this finding. The results were again consistent and remarkable; the anxiety experienced during practice was positively related to all outcome measures of generalized anxiety, phobic anxiety and depression (Table 14). These results suggest that individuals who experience less anxiety during practice, present more favourably at outcome. Since the agoraphobic has been described as sensitive to bodily sensations, they would more than likely be very much aware of the interoceptive cues associated with fear/anxiety. These cues are often interpreted as preludes to a panic attack. According to Mowrer's theory these cues have now become conditioned stimuli for the occurrence of panic. The agoraphobic's tendency to subsequently avoid the aversive situation is then negatively reinforced (and therefore maintained) by the resultant alleviation of fear. Clearly then, if the occurrence of anxiety were inhibited (via relaxation), the cessation of avoidance behaviour would be facilitated, possibly reducing the amount of anxiety as well as depression at posttreatment.

Although the anxiety experienced during practice has proven predictive of treatment outcome in this and Mavissakalian and Michelson's (1983) study, questions remain regarding other potential contributors to both outcome as well as

increased practice. In terms of exposure practice, this author predicted that individuals who initially practiced more, would continue to do so throughout treatment. The results indicated that this is generally if not consistently true (Table 15). The most significant and consistent relationships existed between baseline and overall mean duration of practice while accompanied. Agoraphobics therefore tended to be consistent in the average amount of time spent per outing, as well as in the frequency (when accompanied) of their practice outings. These results suggest that baseline indicators of phobic avoidance or practice behaviours could provide a therapist/investigator with some indication of a subject's level of practice throughout the prospective treatment program. This finding leads to a further investigation of baseline practice as a possible predictor of outcome status, as well as the degree of reduction in agoraphobic symptoms. The results did not support the predicted relationship between baseline practice and outcome. Duration and frequency of baseline practice were not significantly related to treatment outcome (Table 16). On the other hand, the mean duration of baseline practice while alone, was related to the amount of reduction in agoraphobic anxiety, which was measured by the Agoraphobia Factor of the Fear Survey Schedule, as well as the reduction in depression measured by the D scale of the MMPI. Specifically, subjects

who initially spent more time per outing, also showed a greater reduction in agoraphobic anxiety and depression. However, since no other relationships between baseline and change variables were demonstrated, a consistent pattern cannot be said to exist. The available information on baseline practice in this study indicates that its greatest utility is as a predictor of the overall amount of practice throughout treatment.

In addition to baseline indicators of phobic avoidance, other pretreatment measures of symptom severity were also studied. Pretreatment levels of generalized anxiety, phobic anxiety and depression were examined in terms of their relationship to themselves as well as to the practice variables. As mentioned previously, the results indicated positive relationships between many of the pre and posttreatment scores (Table 18). Not surprisingly, agoraphobic individuals who suffered more severe symptomatology initially, also tended to be worse off at outcome, thus supporting the predicted relationship. However, the subsequent prediction that pretreatment scores would be negatively correlated with reductions in generalized anxiety, phobic anxiety and depression, bore interesting results. It was found that although many of the pretreatment and change scores were indeed significantly related (Table 19), these relationships, with one exception, were all positive instead of negative. Apparently,

In spite of the fact that more severe symptoms at pretreatment are often predictive of poorer outcome status, it seems that agoraphobic individuals who experience greater pretreatment anxiety and depression also tend to show a greater reduction in these symptoms at posttreatment. It should be noted that the only negative relationship existed between generalized anxiety and agoraphobic cognitions associated with phobic anxiety. Here, agoraphobics who were more anxious at pretreatment, demonstrated a smaller reduction in agoraphobic cognitions. Nevertheless, the overwhelming positive relationships between pretreatment and change scores were unexpected and thought-provoking. Since these pretreatment scores are predictive of change, one might wonder whether they are also related to any of the practice variables. The results indicated that neither baseline practice, overall practice nor the change in practice throughout treatment, were consistently predicted by pretreatment levels of generalized anxiety, phobic anxiety and depression. If one accepts the tenet that amount of practice is unrelated to treatment outcome, then it is not surprising that duration and frequency of practice are also for the most part not significantly related to pretreatment indicators of agoraphobic symptomatology. However, since the anxiety experienced during practice is a consistent indicator of treatment outcome, and since pre and posttreatment scores are correlated, this anxiety should also be related to the

pretreatment scores. Investigation of this prediction resulted in the finding that agoraphobics who initially experienced more anxiety during practice while accompanied, also had higher levels of pretreatment generalized and phobic anxiety measured by the Fear Survey Schedule. Similarly, individuals who experienced more anxiety during practice (while accompanied) throughout the treatment, also had higher pretreatment phobic anxiety scores on the Fear Survey Schedule. Although not overwhelming in their levels of significance, these results are interesting from the point of view that they support the previous finding regarding the relationship between anxiety during practice and outcome status. Thus, the amount of anxiety experienced during practice was not only predictive of outcome, but was also predicted by certain pretreatment levels of generalized and phobic anxiety.

Yet further investigation into the predictive value of anxiety levels, indicated that pretreatment generalized and phobic anxiety appear almost totally unrelated to the change in anxiety during practice. In addition, the reduction in generalized and phobic anxiety from pre to posttreatment was with one exception, not significantly related to the change in anxiety during practice. The only significant correlation existed between the reduction in agoraphobic anxiety measured by the Agoraphobia Factor of the Fear

Survey Schedule, and the change in anxiety during practice while alone. For the most part however, these change variables were not significantly related. The final question which was posed regarding changes in anxiety, addressed the issue of anxiety reduction from pre to posttreatment, and the total amount of anxiety experienced during practice. Here, the predicted negative relationship between these variables was supported by only two correlations. Agoraphobics who experienced more anxiety during practice while alone, also showed smaller reductions in bodily sensations related to phobic anxiety. Similarly, those who were more anxious during practice while accompanied, experienced less reduction in generalized anxiety. The inconsistency in the results pertaining to change scores in anxiety leads to the conclusion that in spite of the fact that the anxiety experienced during practice was remarkably predictive of outcome status, this anxiety was not generally reflective of the amount of reduction in the psychometrically assessed variables of generalized and phobic anxiety.

The results of this study point to one major question. What aspect of in-vivo practice actually enhances treatment effectiveness? The behaviourists postulate that the effect of in-vivo treatment is reduced in the absence of practice between treatment sessions (Mathews et al., 1981). Further-

more, they believe that practice is actually the main determinant of outcome (McDonald et al., 1979), and that longer practice exposures are more effective than shorter ones (Rapp and Thomas, 1982). The present study however, found that whereas the amount of practice was unrelated to treatment outcome, the anxiety which was experienced during practice predicted outcome status. This was also the unexpected finding of Mavissakalian and Michelson (1983). These results challenge the tenet of the behaviourists that the amount of practice is crucial as a determinant of outcome, and lead to a consideration of the possible mechanisms operating in exposure practice.

Processes Operating in Exposure Practice

The anecdotal data discussed earlier in this chapter indicated that many of the agoraphobic patients attributed their success or subsequent symptom reduction to the effectiveness of relaxation exercises. Specifically, these exercises were reportedly effective in the inhibition of phobic anxiety, thereby facilitating exposure practice. If these subjects are correct in their estimation, then the findings regarding the significant and consistent relationship between anxiety during practice and outcome

status are further supported. However, the exact role of this anxiety is yet to be clarified. According to the agoraphobic subjects, the reduction in anxiety during practice acts to enhance that exposure. This claim has not been clearly demonstrated in the past, with researchers such as Butler et al., (1984) stating that "it has not been previously shown that...ways of coping with anxiety...add significantly to the effects of exposure." Nevertheless, these authors were able to show in their own study, that the combination of exposure and anxiety management is more effective than the combination of exposure and a nonspecific associative therapy. Although the combination of exposure and anxiety management might be effective, Butler et al., (1984) remained undecided about the reasons for this superior efficacy. They suggested that anxiety management might act either by encouraging exposure, or through specific effects of its own. For example, there could be a cognitive element operating here, where the subject's perceptions of increased control over the occurrence and severity of phobic anxiety, act to enhance self-efficacy.

This is quite conceivable, since the success of systematic desensitization has been previously attributed at least partially to the cognitive control that relaxation techniques afford (Seligman, 1975). In support of this, Seligman noted that in cases where relaxation was "a volun-

tary and active process, when the patient strongly believed that he had control over his anxiety," then the relaxation techniques were more effective. The implication of this statement for phobics in general and agoraphobics in particular, are obvious. Since a lack of predictability and controllability contribute greatly to the observed maladaptive behaviour, as well as to the negative emotional, motivational and cognitive changes seen in phobics, then any experience of control (whether actual or just perceived) should facilitate fear/anxiety reduction and enhance outcome status.

It should be noted that in the treatment program to which subjects in the present study were exposed, efficacy self-statements such as "I can control my anxiety" were encouraged, and cognitive restructuring in terms of reducing negative or maladaptive self-statements and cognitive "sets", was done. However, since measures of cognitive changes (in terms of self-efficacy) were not available for many of the subjects and was only incompletely so for others, this data could not be incorporated. Even if the data were complete and significant cognitive changes did occur, it would still be extremely difficult to objectively determine which aspect of the program was responsible for these changes. Was it the inhibition of anxiety

during practice, the duration of practice or the instruction to replace negative self-statements with positive ones?

Since there are cognitive effects of exposure itself, which one could not easily separate out from direct attempts at cognitive restructuring, this question would be difficult to answer.

Whatever the mechanisms operating here, it might be suggested that in the present sample, longer and more frequent exposures did not necessarily facilitate symptom reduction. This observation could be explained by Eysenck's "incubation hypothesis" in which exposure to the conditioned stimulus (CS) is followed by a conditioned response (CR) which is noxious (i.e. fear) and therefore strengthens itself. According to Eysenck (1968) conditioned fear responses such as those seen in agoraphobic individuals, are a special instance of classical conditioning. Here, the CS (e.g. a mall) elicits a CR (fear) which has taken on some of the associative properties of the UCS (panic). As a result, this noxious fear response tends to strengthen or at least maintain itself. This is especially so in cases where exposure to the CS is not over a sufficiently long period of time to allow the fear to recede. It is quite possible therefore, that even those subjects who spent "longer" periods of time practising, did not remain in the situation long enough to directly effect symptom reduction. On the other hand, it could be postulated that perhaps in therapies which utilize desensitization techniques (e.g. reciprocal

inhibition), the duration of practice is not as important as the reduction in anxiety that is experienced during practice. In fact, the observed treatment outcome might be partially due to an "all at once" as opposed to gradual realization that previously phobic situations are not to be feared since control over the occurrence of anxiety is possible.


This phenomenon has been described by theorists such as Guthrie, who proposed that in some instances, learning is complete on one trial.

Since a major goal of systematic desensitization was the inhibition of fear responses by the introduction of contiguous relaxation responses, it is not surprising that individuals who experienced less anxiety in-vivo also showed less phobic symptoms at posttreatment and greater amounts of change from pre to post-treatment. However, due to a lack of information regarding the effectiveness and frequency of relaxation techniques in-vivo, a definite relationship with reduction in fear responses cannot be established. Anecdotal evidence nevertheless suggests that relaxation responses do positively effect symptom reduction. Again, whatever the underlying mechanism, the observed relationship between anxiety in-vivo and change/outcome status remains.

It might be suggested that the "good" patient is not necessarily the one who practices more than is typical. Some patients who are succesful in terms of anxiety reduction may practice less, but receive greater benefit from the treatment. The predictive value of anxiety levels during practice could conceivably be

utilized in future treatment programs, as a possible indicator of treatment outcome. However, further research into the processes operating during in-vivo exposure is necessary, to elucidate the understanding of its effects during treatment.

Ex post facto research has been successfully utilized in many social scientific inquiries. Caution nevertheless needs to be exercised in the making of causal inferences and global generalizations, due to the inability to manipulate independent variables, lack of randomization and risk of improper interpretation. These are inherent weaknesses of the archival method. Despite this, much ex post facto research must be done in the social sciences, since many research problems (and in particular much of clinical research) do not lend themselves to experimental inquiry. Since the pattern of results found in well-controlled experimental studies was precisely replicated here, the severity of any limitations is significantly reduced. The value of this method has been outlined by Kerlinger (1964) who stated that "it can even be said that ex post facto research is more important than experimental research...since...the most important social scientific and educational research problems do not lend themselves to experimentation." The findings of the present study are interesting and likely of significant clinical utility. Furthermore, the application of these findings to future experimentation and clinical inquiry would greatly underscore its value.



APPENDIX A

BEHAVIOURAL DIARY

APPENDIX B

AGORAPHOBIA GROUP CONTRACT

AGORAPHOBIA GROUP CONTRACT

Purpose: To ensure maximal attendance at Agoraphobia Group sessions, to accept responsibility for my actions, to accept responsibility to the group therapists and group members, and to increase the probability of compliance with goals which are established to alleviate agoraphobia.

Having worked extensively with the complex problem of agoraphobia in the past, it has been found necessary to implement the following.

I, _____, while a client/patient in the treatment program for agoraphobia agree to comply with the following:

- i) I will make every effort to attend as many sessions as possible as I recognize that my participation in the program is essential in order to overcome the difficulty.
- ii) If, however, I am unable to attend, I will call and speak to Dr. Ross or leave a message with the secretary for him prior to the 10:00 session indicating my inability to participate on that day.
- iii) I am aware that failure to make the therapists and other group members aware of my lack of attendance is irresponsible on my part and is disruptive to the group procedure. As a result, I accept that failure on two occasions to call in prior to non-attendance will result in me being asked to voluntarily withdraw from the group (subject to the decision of the therapists and group members).
- iv) Knowing that group goals and homework assignments, while sometimes difficult, are in the best interest of alleviation of the agoraphobia, I agree to put forth my best effort to complete all group and individually assigned tasks. If I do not complete them, I agree to discuss with the group my rationale for not doing so.

Having read and understood the above, I will abide by the guidelines of this agreement.

Signature of group member _____
 Signature of Psychologist _____
 Signature of Intern _____

Date: _____

APPENDIX C

DESCRIPTION OF BEHAVIOURAL TREATMENT
PROGRAM FOR AGORAPHOBIA

This program was devised by Dr. William G. Ross. A group approach was implemented, with Dr. Ross and various graduate students/psychology interns acting as co-therapists. Each group was treated once weekly in two-hour sessions. These meetings lasted approximately six months, and were followed by six once-a-month follow-up meetings.

Throughout the treatment phase, individual or group problems might have occurred which needed immediate attention. As such, talk sessions were occasionally interspersed between exposures for purposes of ventilation and continued group cohesion.

The obvious goal of any treatment program for agoraphobia would be the alleviation of phobic anxiety, and the resultant cessation of behavioural avoidance. This program was developed with these goals in mind, but also considered changes in self-efficacy, locus of control, generalized anxiety and depression.

It should be noted that although individual psychotherapy was not a part of this treatment program, group members were allowed to express any feelings or thoughts that they might have had concerning the program, outings, therapists, volunteers etc. In addition, personal concerns such as marital, family, interpersonal or medical problems, were discussed within the group. In the event that participants were not decreasing avoidance behaviour, they were usually confronted by the therapist or co-therapist, who pointed out their

avoidance techniques. Occasionally, other group members might concur, and exert additional pressure on the transgressor. It was also stressed throughout the program that set-backs were to be expected, and that in order to facilitate therapeutic change, these set-backs must be accepted and tolerated. The seven program steps are outlined below. A temporal program description is available in the Method section.

A - Orientation/Education: Initial sessions involved general familiarization with the agoraphobic syndrome. In addition, this orientation afforded clients a chance to become familiar with others suffering from the same disorder. A conceptualization of agoraphobia in terms of Mowrer's two-factor theory of the acquisition (via classical conditioning) and maintenance (via operant conditioning) of phobic anxiety, was also explained. This gave subjects a framework from which to view their symptoms. An outline of the program was also given verbally to participants.

B - Didactics: This actually occurred throughout the program, and involved group discussions and individual testimonies of group members' experiences with agoraphobic symptoms. This was aimed at developing group identity as well as affording further familiarization with agoraphobia as a

syndrome shared by many others.

C - Relaxation Training: An important component of systematic desensitization, relaxation training was introduced as a coping mechanism or inhibitor of the occurrence of anxiety. Deep muscular relaxation exercises were initially taught and practiced for some weeks, followed by autogenic relaxation. Subjects were taken through the relaxation training with a decreasing time component, in an effort to facilitate its use in a wide variety of situations/places. Deep muscle relaxation involves alternate tensing and relaxation of various muscle groups. Autogenic relaxation utilizes imagery, and was offered as an alternative whose use was not as restricted as the muscular relaxation.

D - Further Didactics: Primarily for purposes of ventilation prior to the goal setting and exposure phases. Anticipatory anxiety was discussed and the effectiveness of the relaxation techniques, in terms of affording controllability, was considered. Instructions for individual goal setting were also given here, in preparation for the next stage. The determination of individual goals was done at home, during the week between stages D and E.

E - Individual Goal Setting: In preparation for individual

exposure to various phobic stimuli, each subject was required to list in order of difficulty, a minimum of 10 anxiety-provoking situations. This was the hierarchy to be used during desensitization. Subjective ratings of anticipatory anxiety were also made for each feared stimulus (see Appendix D).

F - Group Exposure: Certain places/situations which commonly generate fear in many agoraphobics (e.g. shopping malls, elevators, high places, standing in line) were visited by the entire group. On the basis of research regarding models, therapists and ex-agoraphobic volunteers accompanied the subjects to these places. The ex-agoraphobic volunteers were introduced just prior to the first group outing. They were all graduates of this program, who were requested to describe their experience with agoraphobia, as well as their eventual success, to current group members. Therapists and volunteers were later phased out, and subjects became support systems for each other. Subsequent to each outing, discussions regarding clients' performance were held. Here, attempts at cognitive restructuring, in terms of expectations of self-efficacy, perceptions of controllability, correcting incorrect self-statements etc., were made.

G - Individual Exposure: Usually the most difficult stage,

subjects attempted to achieve their individual goals in a systematic and consistent fashion. Behavioural diaries and target sheets were kept for daily record of activity, or a lack thereof (Appendices A and E). Relaxation practice was also supposed to be recorded and monitored daily.

Subsequent to the treatment phase, follow-up meetings were scheduled once monthly for the next six months. Here, subjects gave information regarding progress. Where necessary, other individual problems (which surfaced subsequent to the removal of the agoraphobic symptoms) were discussed.

APPENDIX D

INDIVIDUAL GOAL SHEET

Target Goals

On this sheet you will find designated space to record fifteen goals or items which you wish to accomplish in order to help alleviate the agoraphobia. Your task is to rank order a minimum of ten and a maximum of fifteen goals ranging from one which is very simple and can be said to create no appreciable anxiety, to one which is very difficult and which, on a scale from 0 - 100 would score, near to or, 100 (maximum anxiety).

Each goal that you record should be specific so that you can directly confront it. Please avoid ambiguity. For example, "riding 10 floors alone in an elevator" is a specific goal whereas "riding in an elevator" is not. Also, try to make the units of difficulty or steps between goals roughly equivalent so that you are able to move from one goal to the next without too much anxiety.

<u>Goal</u>	<u>Level of Difficulty</u>
15. _____	_____
14. _____	_____
13. _____	_____
12. _____	_____
11. _____	_____
10. _____	_____
9. _____	_____
8. _____	_____
7. _____	_____
6. _____	_____
5. _____	_____
4. _____	_____
3. _____	_____
2. _____	_____
1. _____	0

APPENDIX E

TARGET SHEET

Target Sheet. (X entered on successful completion of target. Progress should lead to the chart's being completed along a diagonal increasing from left to right.)

10																													
9																													
8																													
7																													
6																													
5																													
4																													
3																													
2																													
1																													
Target items (start with least difficult at bottom)	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	Reinforcement for achieving target X3
	Week 1							Week 2							Week 3							Week 4							

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