ATTRIBUTION THEORY AND MILD DEPRESSION: A COGNITIVE TREATMENT APPROACH

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by

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Abstract

The study was designed as a cognitive modification approach to the treatment of mild or moderate depression, to test three hypotheses relating the theory of causal attributions to this behavior disorder. It was hypothesized first, that people with depressed feelings feel the locus of responsibility for their depressed feelings to be more internal than external; second, that depressed individuals make causal attributions concerning their own behavior in at least one of three characteristic manners or "patterns"; and therefore, third, that covert rehearsal of a statement designed to initiate causal attributions in a manner contrary to that of the predominant attribution pattern has the effect of reducing depressed feelings in these individuals.

Thirty mildly depressed female subjects volunteered to participate in the project. Assessment of subjects consisted of the administration of three self-report depression rating scales, and three attribution scales designed to measure locus of responsibility, attribution pattern, and subjective level of depression. Ten subjects were randomly assigned to each of three experimental conditions. In the Treatment condition, subjects were initially assessed and interviewed; two days later they were given an attributional statement to rehearse for one week; and after that week were assessed again. Subjects in the

Expectancy Control condition were initially assessed and interviewed; two days later they were given a non-attributional statement to rehearse for one week, and after that week were assessed again. The Waiting-List Control subjects were initially assessed and interviewed; they then waited one week before being assessed again, and were then given an attributional statement to rehearse for one week; and after the second week, they were assessed a third time.

The results indicated that, although all subjects' depression scales' scores decreased from pre-test to post-test, on one measure scores for Treatment subjects changed significantly more than scores for control subjects, indicating that Treatment subjects perceived themselves to be less depressed at post-test than control subjects. Treatment subjects also indicated that they felt less responsible at post-test for the problems which made them feel depressed than did subjects in the two control conditions. Scores on the scale designed to measure attribution patterns showed Treatment subjects changing more from pre- to post-test than control subjects. Finally, in general, pre- to post-test change scores on the measures of locus of responsibility and attribution pattern were found to be significantly related to change scores on depression rating scales for subjects in the Treatment condition only, suggesting that the concepts of locus of responsibility and

of patterns of attributions are related to an already recognized part of depression. These results are discussed with respect to the potential of an attributional approach to the treatment of mild depression.

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Introduction

Depression can present itself in many ways. The depressed person can be sad, down, low in spirits, anxious, and irritable. He might have difficulty in concentrating and be self-critical and self-derogatory. The depressed person might describe himself as deprived of emotional support, empty, lonely, unworthy, inferior, and inadequate. He might experience physical changes such as insomnia, anorexia, weight loss, aches and pains, and a diurnal variation in mood feeling typically low in the morning and better in the afternoon, (Ayd, 1961). He might lose interest in his friends and usual activities, might become inefficient at work and generally seclusive. In severe cases he might make suicidal threats and even attempts.

The United States National Institute of Mental Health estimated that between two and four million Americans might need professional care for depressive disorders (Williams, Friedman, & Secunda, 1970). This number is in the order of 2 to 4% of the American general population. Other studies report that an estimated 3 to 4% (Lehmann, 1971) and 5% (Mendels, 1970) of the general population require clinical intervention for disorders of a depressive nature.

As an area in the field of mental illness, the study of depression covers a broad spectrum of issues. The present study does not attempt to deal with all of these issues nor to provide more than a brief critical review for various approaches to treatment. This thesis contains the development of a cognitive treatment approach to

mild or moderate depression, based on the tenets of attribution theory. An experimental test of this treatment approach is reported and conclusions about the outcome are drawn.

Though it might be desirable to assume complete background knowledge on the part of the reader, it is hardly practical. This introduction then, has been divided into six sections, with the aim of providing such a background. First, a brief review of the major areas of research interest in depression is presented. Second, a general overview of the main etiological and treatment approaches to depression is given. Third, in light of the cognitive orientation of the present study, a short history of the use of cognitive mediation methods in the treatment of behavior disorders is covered. Fourth, the aspects of attribution theory relevant to the present study are reviewed. Fifth, a pilot study is presented wherein the arguments for the use of the present cognitive treatment approach are developed. Finally, the rationale for the present study, the general hypotheses, and the experimental predictions are presented.

Areas of Research Interest

Historically, the literature on depression has been concerned with a number of research issues apart from, though related to, etiology and treatment. These issues might be described as centering around three areas: semantics, nosology, and diagnosis.

A primary problem with any disorder is one of definition. This problem is particularly acute with depression where the word "depression" has been used to describe alternately, a mood, a symptom, a syndrome, or a specific disease entity. As a mood, depression is usually considered to apply to a sub-clinical manifestation of flattened affect. As a symptom, it can accompany any number of medical or psychiatric disorders (Akiskal & McKinney, 1975; Stewart, Drake, & Winokur, 1965). As a syndrome, it is difficult to define, as the symptoms of the syndrome encompass both physical and psychological disturbances. Finally, the notion of a specific disease entity implies physiological as well as psychological impairment. This difficulty of definition has contributed to the confusion surrounding the disorder (Levitt & Lubin, 1975; Mendels, 1970).

In general, distinctions have been made on the basis of biological symptoms between depression as everyday sadness, and melancholia as a disease entity (Whybrow & Parlatore, 1973). However, as will be pointed out subsequently, many of the biochemical changes which seem to accompany depression also accompany many other psychiatric disorders (Miller, 1975).

Symptom classification, or nosology, is a second issue which has been the subject of research interest. The American Psychiatric Association, in the Diagnostic and Statistical Manual of Mental Disorders (1968), the DSM-II,

makes the distinction between psychotic and neurotic depression. This distinction is based on the Kraepelinian formulation of two types of depression. One, manic-depressive (psychotic) depression, was presumed to be caused by internal, genetic, hormonal, or biochemical factors. The other, psychogenic (neurotic) depression, was presumed to be caused by external or environmental factors.

In the literature as well as in practice, this binary distinction has been paralleled by such terms as endogenous-reactive, retarded-agitated, as well as primary-secondary (Akiskal & McKinney, 1975). The controversy surrounding this distinction might be expressed in the question: are psychotic and neurotic depression two distinct disease entities or merely opposing ends of a continuum? Factor-analytic studies of symptom data obtained from clinical interviews have been carried out in an attempt to resolve this issue. Mendels (1970) in a review of the literature, reports the findings of seven factor-analytic studies. Overall there was considerable agreement that certain symptoms tend to form two discrete clusters of factors. Yet Mendels (1970) suggests that the theoretical orientation of these investigators may have influenced their findings.

Kendell (1968, 1969, 1976; Kendell & Gourlay, 1970) also emphasizes the importance of experimenter bias in these studies and points to the method of obtaining data (the clinical interview) used in these factor-analytic studies. He suggests that this experimenter bias cannot be ignored

and implies that it severely restricts the amount of reliance which can be placed on studies of this nature. A more recent factor analytic study, however, provides support for the binary distinction (Lewinsohn, Zeiss, Zeiss, & Haller, 1977).

Eysenck (1970), assuming that this question has been effectively answered in favor of the binary aspect, poses another research question: are the two depressions categorical or dimensional? That is, do persons within categories vary or not vary in severity of illness? Taking the dimensional perspective, Eysenck suggests that diagnosis in depression would consist of two scores, one for the intensity of the endogenous factor, and one for the intensity of the reactive factor. Unfortunately, these notions await empirical test, and thus the position taken by Eysenck remains little more than a testable hypothesis.

In another vein, Levitt and Lubin (1975) report data from five studies in which a total of 32.6% of the cases diagnosed as depression could not be categorized as either reactive or endogenous type. These authors raise the possibility of a third, central category, like Mendels' (1965) "endo-reactive" depression. It would seem that this would provide some support for Eysenck's position, but these authors do not mention this possibility.

One further point should be raised. Most factor-analytic studies of depressive symptoms have not included measures of physiological changes in the analyses. This

failure to include such a major variable would seem to make the conclusions of these studies more suspect.

A third question of research interest has been related to diagnosis, and the relationship between physical and psychological symptoms. As Akiskal and McKinney (1975) have noted, the physical changes accompanying severe depression, e.g., psychomotor and vegetative dysfunction, are often experienced by individuals who are not suffering from depression as a primary disorder. Several studies (Poe, Lowell, & Fox, 1966; Ripley, 1947; Schwab, Bialow, Clemmons, & Holzer, 1966; Schwab, Clemmons, Bialow, Duggan, & Davis, 1965) have reported the presence of depressive symptoms in a non-psychiatric hospitalized population. In relating this observation to diagnosis, Levitt and Lubin (1975) have asked the questions: "Which is etiological -- the depression or the physical symptoms? Is the affect change reactive to an illness, or is it part of an illness?" (p. 18). The conclusion which is reached by these authors is that an answer to this question is not possible given the presently available diagnostic tools.

Approaches to Depression

No one theory has been universally recognized as providing an adequate explanation for all symptoms commonly associated with depression. The diffuse nature of the disorder has contributed to this situation (Blaney, 1977). Depression appears to vary along a number of dimensions including type and number of symptoms manifest, severity of

illness, and response to mode of treatment.

Many theories as to the causes of depression have been advanced with the intent of providing not only an explanation for the origin of the disorder, but also a successful treatment (Akiskal & McKinney, 1975). Most of these theories fall under one of four general areas or approaches to the disorder: biological, psychoanalytical, behavioral, and cognitive. Following is a general overview of each of these areas.

Biological approach. The biological approach to depression concentrates mainly upon depression as a physiological disorder and tends to emphasize the biochemical and physical changes which occur with severe depressive illness. Body chemistry is altered during severe depressive illness (Stern, McClure, & Costello, 1970). These alterations consist of changes in adreno-cortical hormone metabolism, changes in the metabolism of calcium and other electrolytes, and disturbances in biogenic amine levels (Mendels, 1970).

Psychological functioning also changes. Impairment of cognitive functioning, disturbed time perception, psychomotor abilities, slower reaction times, impairment of perceptual abilities, increased visual threshold, and impairment of communication abilities, reduced frequency of verbal behavior, and lower rates of emission of positive responses have been noted (Miller, 1975). Whether or not these impairments are due to physiological changes is still

a question of research interest.

The biological approach to the etiology of depression posits a genetically pre-disposed central nervous system suffering from depletion of the neuro-transmitter group, indoleamines and catecholamines. Additionally, the alteration of electrolyte metabolism, specifically intraneuronal retention of sodium, is believed to potentiate excitation in the central nervous system (Whybrow & Mendels, 1969).

The treatment suggested by this approach usually takes the form of anti-depressant medication, tricyclics or mono-amine oxidase inhibitors, the aim of which is to reverse the depletion of biogenic amines. Electro-convulsive treatment is also frequently employed as a treatment, although the mechanism by which it is found to be effective has yet to be clearly explained (Costello & Belton, 1970).

The biological approach to depression is mainly symptom-based, and not integrated into a clearly defined theory. That is, the disorder is diagnosed on the basis of physical, biochemical, and psychological changes, and the treatment is administered on the basis of these changes. The most telling criticism of this approach it seems, is that the noted psychological impairments and the observed physical and biochemical changes are not unique to depression (Miller, 1975). For example, alterations in metabolism can be observed in patients diagnosed as suffering from paranoid schizophrenia, as well as patients with organic

psychosyndromes. Similarly, as mentioned previously, many of the physical changes associated with depression have been observed in non-psychiatric, hospitalized patients.

The biological approach is useful insofar as it not only provides a biochemical explanation for many observed physiological and psychological symptoms, but also suggests a useful and explainable treatment method, anti-depressant medication. It is possible to base a conceptual model of severe depressive illness on this approach (see for example, Akiskal & McKinney, 1975). A biological treatment approach based on medication and other physical treatments such as ECT (see for example, Royal College of Psychiatrists, 1977), would seem to be restricted to the more severe forms of the disorder where biochemical changes are manifest. In mild or moderate depression, where these changes are not so prominent, if at all present, a biological approach to etiology, diagnosis, or treatment would not seem to be as useful or as helpful as other approaches.

Psychoanalytic approach. Psychoanalytic theory interprets depression as anger turned inward. For instance, a person who feels hostile toward the employer who fired him turns such feelings inward, as they are unacceptable and would arouse anxiety if acknowledged. The defense mechanism of projection allows this person to perceive that it is others who are angry with him, not he who is angry. Since good reasons must exist for their anger toward him, he must be incompetent and worthless (Abraham, 1911). Freud (1917)

suggested that prolonged depression experienced following the death of a loved one indicated ambivalence towards the lost person, that is, simultaneous positive and negative feelings. Thus, for the ambivalent daughter, the death of her mother produces, along with normal grief, feelings of guilt that she somehow was responsible for her mother's death.

This "metaphysical" model does not easily lend itself to empirical test and the evidence as to its veracity comes mainly in the form of case studies where the mode of treatment has been psychoanalysis. This takes the form of an intensive inquiry into the patient's life history to obtain information concerning the stage of psychosexual development at which the disorder has its roots (Freud, 1917). This intrapsychic conflict is then brought into conscious awareness and worked through in a series of therapy sessions with a psychoanalyst.

Critical analysis of this approach quickly reveals that the efficacy of psychoanalysis as a treatment for depression cannot be separated from a number of other contributing factors, e.g., experimenter bias, spontaneous remission, and patient expectancy (Seligman, Klein, & Miller, 1976). As an etiological explanation, it is untestable owing to its "metaphysical" nature and the current orientation toward practice. Though a psychoanalytic approach to the etiology and treatment of depression would appear to be more of historical than current effective

interest, in practice it seems to be linked with biochemical approaches and is still used by some psychiatrists.

Behavioral approach. The central element in most behavioral conceptualizations of depression is an analysis of the behavior pattern of depressed individuals in terms of an extinction schedule. Different theorists have postulated different reasons for the initiation of an extinction schedule.

Ferster (1966) was the first to propose an explanation for the extinction schedule. He viewed depression as a reduced frequency of emission of positively reinforced behavior resulting from a withdrawal of positive reinforcement. Lazarus (1968) suggested that depression might be regarded "as a function of inadequate or insufficient reinforcers" which resulted in a "weakened behavioral repertoire" (p. 84). Thus, the extinction trial may result from a loss of reinforcers or merely loss and deprivation of such things as love, money, status, prestige, security, or recognition.

Costello (1972) proposed that depression resulted from the loss of reinforcer effectiveness. This hypothesis has considerable heuristic value in that it accounts for the loss of effectiveness in terms of both biological and behavioral causes. Costello suggested that loss of effectiveness might arise from biochemical and neurophysical changes, a suggestion which was supported by Stein (1968), and/or "a disruption in a chain of behavior" by "the loss of one

of the reinforcers in the chain" (Costello, 1972, p. 241). Costello saw the reinforcer effectiveness of all chain components as being contingent upon the completion of the chain whether it be overtly or covertly. Thus, when one component is lost, the reinforcer effectiveness of the remaining components is reduced and the individual reverts to an extinction schedule.

Lewinsohn (1968, 1974a, 1974b) and his colleagues (Lewinsohn & Graf, 1973; Lewinsohn & Libet, 1972; Lewinsohn & MacPhillamy, 1974; MacPhillamy & Lewinsohn, 1974) have referred to a lack of social skills, the non-emission of behaviors which evoke positive responses from others, as central to the emission of depressive behaviors. Lewinsohn described the assumptions underlying the origins of depressive behaviors as being (a) a low rate of reinforcement, initiating depressive behaviors, (b) a low rate of positive reinforcement leading to a low rate of activity, and (c) a lack of social skills as well as possible environmental events such as physical loss of a source of social reinforcement. The result is an extinction schedule of behavior, as in other models. Social reinforcement, such as sympathy, interest, and concern serves to maintain, and in some cases increase, depressive behaviors, thus excluding the opportunity for the depressed individual to learn alternate more adaptive behaviors.

There is one major exception to the "extinction-schedule analysis" of depressed behavior. Seligman's model

of learned helplessness (1974, 1975) is based on the notion of an independence between response and outcome. As a result of this independence, an organism exposed to an inescapable aversive stimulus will display a motivational deficit and an interference with learning of new response-relief contingencies. Seligman argued that mild or reactive depression in humans results from a state of learned helplessness characterized by the perception of no control.

Treatments within the general behavioral framework have been successful in increasing the activity level of depressives through token economy programs (Hersen, Eisler, Alford, & Agras, 1973), programming the home environment (Liberman & Raskin, 1971) as well as other techniques (Jackson, 1972; Rosenthal & Meyer, 1971). In all cases, the therapeutic mechanism has been the initiation of adaptive behavior patterns through the building up of coping skills which ultimately leads to an increased probability of obtaining positive reinforcement.

Behavioral theories, particularly that developed by Lewinsohn and his colleagues, are based largely on empirical studies where the data is correlational in nature. As such Blaney (1977) noted, they might more appropriately be treated as characterizations of the depressed person's interactions with the environment than as theories concerning the causal factors involved in the onset of depression.

The learned helplessness model would seem to encounter difficulty with studies which produce anger and hostility

as well as depression, when helplessness is induced (Gatchel, Paulus, & Maples, 1975; Klein, Fencil-Morse, & Seligman, 1973; Miller & Seligman, 1973). Blaney (1977) has raised the question: Is helplessness specific to depression? Surely if the answer to this question is in the negative, then a model of depression built on the notion of learned helplessness would seem to lose some credibility. This issue however, has yet to be fully addressed by researchers working in the area of learned helplessness

Cognitive approach. The cognitive approach to depression has been developed primarily in the theories of Aaron Beck (1967, 1970, 1974, 1976). Though other workers (Coleman, 1975; Fuchs & Rehm, 1977; Todd, 1972; Velten, 1968) have taken a cognitive approach to depression, Beck is the only one to have constructed a theory which outlines a treatment.

Beck perceived depression as caused by distortions in thinking patterns. In the case of loss, most people would perceive their situation and attribute feelings of depression to loss. An individual who becomes clinically depressed however, construes the experience in a different manner. He misinterprets or exaggerates the loss or attaches over-generalized or extravagant meanings to the loss. He exhibits aberrations of thinking characterized by four features which Beck has defined.

The first of these cognitive distortions is arbitrary inference, which according to Beck, represents the process

of drawing a conclusion when evidence is lacking or is actually contrary to the conclusion. For instance, a depressed person, when passed by a frowning person on the street, might say "He is disgusted with me." The second distortion is over-generalization which is the process of making unjustified statements on the basis of one instance. For example, the person who has experienced one failure might say "I never succeed at anything." Third, is magnification, the exaggeration of the significance of a single event. Finally, selective abstraction is the failure to integrate an important piece of information into the life experience.

Treatment from within Beck's framework is psychotherapeutic in nature and involves pointing out the distortions in the individual's thinking. This is done by teaching the individual to identify the distortions through distancing, the process of gaining cognitive objectivity toward the distorted cognitions. Training the client to make distinctions between thought and external reality is central to the treatment. Once the client has objectified his thoughts through distancing, then he is in a position to begin the process of reality testing -- "applying the rules of evidence and logic and considering alternative explanations." (Beck, 1970, p. 190).

As with the behavioral approach to depression, support for the cognitive viewpoint comes mainly from correlational studies. As Blaney (1977) points out, "No theory denies

that depressed persons have depressed thoughts ... correlational studies fail (however) to prove that the cognitive manifestations are primary." (p. 204).

Alternatively, there does exist a growing body of literature which suggests that feeling states can be manipulated by cognitive intervention. For example, Velten (1968) has shown that a negative affective state can be induced by requiring subjects to think unpleasant thoughts. Conversely, Ludwig (1975) has shown that negative affective states can be changed to more positive states by manipulating the beliefs which Beck suggests contribute to the negative view of the self.

Summary. One conclusion which might be drawn from this brief review of research areas and overview of approaches is that the field of depression is characterized by a certain amount of confusion. A surfeit of notions and hypotheses would seem to have contributed to this state of confusion.

In terms of theories and explanations of origins, recent research trends appear to be leading toward a stress on the milder forms of the disorder (Blaney, 1977). Perhaps this has been directed by a new emphasis on prevention and early intervention in the area of mental health. Alternately, it might have derived from a realization that it is possible to treat observed biochemical changes with medication. Thus the more severe forms of depression where these changes are manifest, might more appropriately be

transferred to the realm of internists and psychopharmacologists.

Irrespective of speculations as to the reasons for the new emphasis on mild depression, it appears that as a treatment approach to behavior disorders in general, psychoanalysis is receding in prominence, and is being replaced by behavioral and cognitive approaches. And these two latter approaches to behavior disorders are becoming intermeshed as the notion that conditioning does not occur automatically, but rather is cognitively mediated, gains prominence. (See for example, Bandura, 1974; Brewer, 1974; Lazarus, 1977; Mahoney, 1974; and Meichenbaum, 1977).

In keeping with this then, the approach to depression which provides the theoretical base for the present research, reflects a cognitive-behavioral trend.

Cognitive Mediation Theories

The recent development of cognitive methods as applied to therapy has been a significant contribution to the behavior modifier's armamentarium. In general however, interest has focused on the treatment of fear-related disorders, for example, speech anxiety (Meichenbaum, Gilmore, & Fedoravicius, 1971; Thorpe, Amatu, Blakely, & Burns, 1976; Trexler & Karst, 1972), fear of dead animals (D'Zurilla, Wilson, & Nelson, 1973), test anxiety (Meichenbaum, 1972; Wine, 1971) and snake phobias (Meichenbaum, 1971; Wein, Nelson, & Odom, 1975). These cognitive methods have been variously termed "systematic rational restructuring"

(Goldfried, Decenteceo, & Weinberg, 1974), "self-instructional training" (Meichenbaum, 1975, 1976, 1977; Meichenbaum & Cameron, 1974) as well as "cognitive restructuring" (D'Zurilla, Wilson, & Nelson, 1973; Wein, Nelson, & Odom, 1975). The three approaches differ in terms of their emphasis on the underlying beliefs of the individual and the extent to which they employ behavioral techniques.

Systematic rational restructuring is a cognitive change technique based on Ellis' (1962) Rational-Emotive Therapy (RET). In RET the therapist assesses and evaluates the individual's thoughts in terms of Ellis' list of 12 irrational beliefs. The therapist then systematically challenges and alters the individual's thought processes and encourages coping responses incompatible with these beliefs. Recognition of the contribution of irrational beliefs to maladaptive behavior has led behavior therapists in recent years to systematize Ellis' therapeutic approach within a behavioral orientation (Goldfried, et al., 1974; Goldfried & Goldfried, 1975). Applications of this systematic approach to phobias and irrational fears have resulted in therapeutic success (DiLoreto, 1971; Trexler & Karst, 1972).

Meichenbaum (1976) in his description of self-instructional training drew a distinction between cognitive therapies as employed by the semantic or cognitive therapists (Ellis, 1962; Beck, 1970) and that employed by

behavior therapists. Meichenbaum suggested that the semantic therapists focused on faulty thinking style of the client while the behavior therapist, recognizing cognitions as "covert operants" (Homme, 1965) attempted to affect the client's maladaptive thoughts by pairing them with reinforcement or punishment. Behavior therapists focused on overt behaviors under the assumption that changes in behavior produced changes in thinking style. Alternatively, Meichenbaum's self-instructional training proposes a merger of these two types of therapy into a cognitive behavior therapy employing such techniques as coping imagery, covert desensitization, and anxiety relief training.

Finally, cognitive restructuring as described by D'Zurilla et al. (1973) involves a description by the subject of a past event which was fearful. The subject is then provided with a rational explanation and understanding of his fear. This explanation, given in straight-forward language, is in terms of various learning theory rationales. In noting the role that re-attribution or relabeling of fear experiences might play in the effectiveness of cognitive restructuring, Wein, Nelson, and Odom (1975) assessed its contribution relative to other components of the cognitive restructuring "package." They found that the element of re-attribution contributed significantly more than verbal extinction to the effectiveness of cognitive restructuring in reducing avoidance of feared objects and,

to a lesser degree, subjectively assessed fear.

These attempts to "restructure" the thinking of individuals with disordered behaviors have in general been successful. Success may have resulted, however, from the provision of alternate causes for observed behavior. Such an emphasis is not unlike that associated with the attribution literature, where change is induced by shifting causal attributions. Kelley (1967) pointed out, and Valins and Nisbett (1972) further emphasized, that what the individual perceives to be the cause of his behavior and the behavior of others will have a determinant influence on his subsequent beliefs and actions. Attribution research would suggest then, that if an alternative presented through "cognitive restructuring" is not salient or plausible, and directly related to the individual's causal structure, then its acceptance as an alternative might not be effected. (See for example, Kiesler, Nisbett, & Zanna, 1969; Ross, Rodin, & Zimbardo, 1969.) An emphasis then, in "cognitive restructuring" on what the client perceives to be the causal relationships between observed events, the causal links, and then on attempting to provide alternative causes for observed behavior, appears to have potential for increasing its current effectiveness. The theory developed around an attribution framework would seem to provide a model for cognitive restructuring.

Attribution Theory

The expression "attribution theory" is a descriptive phrase which has been applied to a group of theoretical models characterized by a cognitive approach to social perception and sharing roughly the same empirical data base. These models are concerned mainly with the factors which influence the perceived causal relationships between actions and events and observed outcomes.

The theory of attribution can be traced to two sources, the work of Fritz Heider and the work of Stanley Schachter and Jerome Singer (1962). Although Schachter and Singer's work was concerned with the nature of emotions and the role of cognitive factors in the interpretation of emotional states, the original experiment and subsequent work are considered with attribution theory. Heider (1958), and later Kelley (1967), on the other hand, have placed more emphasis on information attended to in forming causal attributions and factors influencing the use of information.

Theoretical aspects. Basic elements of attribution theory can be traced to the writings of Fritz Heider (1944). In later work Heider (1958) described the processes by which an individual makes causal attributions about his world. Predicating his theory on the notion that individuals act as if they were naive psychologists, Heider noted that people observe their own and others' actions in a situation and proceed to search for the meaning of, causes of,

and reasons for, these acts. When making these observations, people tend to make inferences about responsibility and intention in relation to actions. These inferences are what Heider called attributions. Heider observed that people attempt to structure the events in their environment so as to facilitate control and prediction of these events. This structuring procedure is carried out through a "causal analysis" in which observed events are attributed to a number of possible causes. Causes are linked to effects to form cause-effect relationships. In forming these cause-effect relationships, Heider stated that the individual was also directing his own behavior, since the choice of a causal agent had an effect upon his perception of the event and ultimately his own behavior.

These notions concerning social interaction lay dormant for some time until two prominent researchers sparked new interest in attribution theory. Edward Jones (Jones, 1964; Jones & Davis, 1965; Jones & Nisbett, 1972) and Harold Kelley (1967, 1972a, 1972b) elaborated models of the attribution process and generated considerable research interest. While Jones' interest was primarily with interpersonal attributions, Kelley emphasized intra-personal attributions. In his 1967 paper, Kelley described the Heiderian attribution process as related to the individual and outlined a model of the mechanisms involved. This model of Kelley's provides a basis for some of the hypotheses to be later developed in this thesis. A third worker

in the area of attribution, Richard deCharms (1968, 1972), concentrated mainly upon the concept of perceived locus of causality and developed a theory of personal causation based on this notion. The implications of deCharms' work on locus of causality and personal causation add to the theoretical base of this paper.

Kelley suggested that people operate "as if (they) were motivated to attain a cognitive mastery of the causal structure of (their) environment." (1967, p. 193). In stating this, Kelley implied that relationships exist between observed events and causes and that individuals through the attribution process seek to discover the nature of these relationships. Attribution of events or effects to agents or sources of causality takes place after an effect is observed. For example, a balloon bursts when it is stuck with a pin. The event, the bursting, is causally related to the insertion of the pin in the rubber of the balloon.

Heider identified yet another component of the attribution network -- the importance of internal (personal) and external (situational) factors. Kelley (1967) to illustrate Heider's distinction between internal and external attributions, used the example of enjoyment of a movie. Suppose that an individual went to a movie and enjoyed it. What caused that enjoyment? If the individual attributed the enjoyment of the movie to the properties of the movie, then he has made an external attribution. If however, he

took the enjoyment as attributable to personal preferences, then he has made an internal attribution. Both Kelley and deCharms as well as others (Jones & Davis, 1965; Valins & Nisbett, 1972) incorporated this distinction into their work, and various research supports the concept of the effect of difference in attributions following from the relative contribution of internal and external factors (Beckman, 1970; Davison & Valins, 1969; Weiner, Freize, Kukla, Reed, Rest, & Rosenbaum, 1972).

DeCharms (1968) concentrated on this aspect of Heider's work -- perceived locus of causality for behavior -- and developed a theory of personal causation based on this notion. According to deCharms, when an individual performs a behavior which is intended to produce some kind of change in the environment, he experiences himself as having originated the intention and the behavior; as such he is said to be the locus of causality for that behavior and is said to be intrinsically motivated. DeCharms referred to this person as an "Origin." On the other hand, when some outside force causes the individual to act, then, deCharms stated, he experiences himself as the instrument of these forces; the locus of causality is outside of him. In this case, he is said to be extrinsically motivated in his actions; deCharms referred to him as a "Pawn."

DeCharms viewed the two concepts of Origin and Pawn as dimensional in nature, and situationally specific. That

is, in some situations, people might be forced to act in certain ways whereas in other situations they may be free to make an independent decision as to the outcome. For the present discussion, the most important of deCharms' notions is the relationship between Origin behavior and increased personal motivation with the resultant view of the self as more competent and capable of more satisfying behavior. DeCharms' (1972) study of personal causation training in underprivileged black elementary school children demonstrated that training teachers and pupils to act as Origins can have a marked effect on performance. Over a two year period, deCharms carried out a program which was, for the pupils, designed to emphasize four major concepts: achievement motivation, realistic goal setting, self-concept, and the Origin-Pawn concept. Briefly, this involved exercises carried out daily in the classroom which required the child to write stories on motivation-oriented topics (achievement motivation), to spell words set at his own level of ability (realistic goal-setting), compose self-statements (self-concept), and participate in a project which stressed personal responsibility, feelings of confidence and personal causation, planning, and goal setting as well as alerting the child to feelings of being pushed around.

Teaching children that behavior can result from personal sources and that people can learn to act as Origins resulted in enhanced academic performance and increased in-

dividual motivation. As well, deCharms' program had a positive influence on career advancement for teachers, indicating that this general approach was applicable to adults as well as children.

DeCharms was not alone in postulating a relationship between internal causation and increased motivation. Other research has shown that a person's achievement is related to his attribution of the cause of his success and failure to himself or to external sources (Kukla, 1971). In addition, it has been shown that attitude formation and changes are influenced by the locus of attribution (Ross, Insko, & Ross, 1971; Valins, 1966, 1967).

In summary, research in attribution theory based on Heiderian ideas has centered around the notions of covariation of events, of perceived causal relationships between events, of perceived locus of causality, internal and external attributions, and of the effects that these perceptions can have on our subsequent behavior.

Experimental and applied aspects. As mentioned previously, the experimental work of Schachter and Singer on the experience of emotion focused on the labeling and interpretation of internal states. This emphasis provided a basis for much of the experimental and applied work which has since been carried out on attribution theory. In their 1962 study, Schachter and Singer demonstrated that an individual while feeling aroused can experience disparate emotional states depending on the factors in the immediate

environment which influence their cognitions.

Though the Schachter and Singer study was never replicated, a number of studies reported since then have provided empirical support for their results (Borkovec, Wall, & Stone, 1974; Cantor, Zillmann, & Bryant, 1975; Girodo, 1973; Nisbett & Schachter, 1966; Ross, Rodin, & Zimbardo, 1969; Schachter & Wheeler, 1962; Storms & Nisbett, 1970).

The model developed by Schachter and Singer was subsequently applied to naturally occuring arousal states. Nisbett and Schachter (1966) caused subjects to misattribute the source of their experimentally induced fear. These researchers, through instructions to the subjects, had explicitly emphasized a link between physiological arousal and a highly plausible, though inaccurate source of arousal.

Ross, Rodin, and Zimbardo (1969) however noted the limitations of the Nisbett and Schachter (1966) study regarding the use of the misattribution phenomenon as a therapeutic technique. These researchers alternately emphasized the temporal contiguity between two different events -- physiological arousal and cognitive cues of a non-emotional source. By obscuring the link between arousal and cognitive cues of a previously salient emotional source, and establishing instead a link between arousal and cues of a non-emotional source, misattribution would take place.

Ross et al. (1969) presented two potential sources of arousal symptoms to subjects and directed them to attend to one or the other simply by covarying the occurrence of one

of these events with the onset of fear symptoms. By using this "principle of covariation," with the emphasis on temporal contiguity, these researchers successfully directed subjects to misattribute their arousal to a non-emotional source.

Since Ross et al. (1969), other studies were carried out which further investigated the limits of "misattribution therapy." The concept of differential labeling of internal states provided a paradigm for work with pain tolerance (Davison & Valins, 1969; Holmes & Frost, 1976; Nisbett & Schachter, 1966), phobias (Borkovec, Wall, & Stone, 1974), insomnia (Storms & Nisbett, 1970), and social anxiety (Miller & Arkowitz, 1977). In all of these studies, deception was employed as part of the experimental procedure. Subjects were unaware of the cues which caused them to redirect the sources of their arousal state. In the majority of cases, the manipulation was successful. Both Singerman, Borkovec, and Baron (1976) and Miller and Arkowitz (1977) however, reported studies where the re-attribution phenomenon failed. Johnson, Ross, and Mastria (1977) have suggested that failure in studies such as these might be due to the use of nonveridical or deceptive re-attribution manipulations.

The re-attribution paradigm however, has been shown to be effective in the absence of deception. Two case studies, both adhering to a re-attribution paradigm and neither involving deception have been reported. Neale

(cited in Valins & Nisbett, 1972) successfully treated a young man who was experiencing feelings of anxiety and depression over fears that he was homosexual. Davison (1966) reported treating a schizophrenic who believed that "pressure points" above his eyes were caused by a spirit. Such case studies, in combination with experimentally-based outcome studies, suggest that the re-attribution of an effect to an alternate cause can be a viable and effective treatment. Its effectiveness in the absence of deception appears to be a most salient point. Further investigation of the therapeutic application of attribution theory thus seems both justified and appropriate at this time.

Summary. Attribution theory, a theory of social perception, derives its theoretical roots from Heider (1944, 1958) and Kelley (1967) and its experimental and applied roots from the work of Schachter and Singer (1962) on emotions. It has been applied experimentally to the problem behaviors of anxiety and phobias, in the form of "misattribution" or "re-attribution" therapy, and with emphasis on locus of causality to the problem of underachievement in primary school children. Two case studies were reported where the concept of alternate causal attributions was applied to, respectively, the problems of depression and anxiety, and the problem of schizophrenia, without the use of deception.

Pilot Study and the Present Investigation

Cognitive restructuring has been shown to be an effective treatment approach for different behavior disorders (Goldfried, et al., 1974; Mahoney, 1974; Meichenbaum, 1975, 1976). Wein et al. (1975) have shown re-attribution to be the most effective single component of the cognitive restructuring "package." Attribution research cited in the preceding section emphasizes this finding.

An examination of the theory of attribution has revealed that the important elements are the perceived cause-effect relationship between events, the perceived locus of causality, and the effect that these perceptions can have on subsequent behavior.

The review of the issues and treatment approaches to depression has emphasized the elusive and diffuse nature of this disorder. A more effective approach to treatment of mild depression might be directed at the perceived causal structure of the depressed individual, and the relationships which they perceive exist between themselves and objects and events in their environment.

The present study, then, as an investigation primarily of the problem of depression applies the principles of attribution theory to this behavior disorder. The intent is to determine if these principles have the potential to provide a well-defined model for the treatment of depression. Prior to arriving at a design for a therapeutic tri-

al of an attributional approach to depression, a pilot study was carried out. This was done to investigate the depressed individual's expectations and predictions about his own behavior and his interactions with the environment to which a re-attribution manipulation might most appropriately be directed.

General introduction. DeCharms (1968) conceived of "Pawn" behavior as associated with extrinsic motivation and external locus of causality, whereas "Origin" behavior was related to intrinsic motivation and internal locus of causality. DeCharms' (1972) study of classroom behavior indicated a direct relationship between internal causation on the one hand and increased motivation and achievement levels on the other. These findings appeared to be related to the problem of depression, thus deCharms' work provided the direction for the pilot study.

People who have depressed feelings complain of a lack of motivation or a will to do things. Conceptualized in deCharms' terms, depressives may perceive themselves as Pawns, extrinsically motivated and the instrument of outside forces. To this end, undergraduate students who indicated that they had depressed feelings were interviewed. If this was the case, then a shift from Pawn to Origin behavior or view of the self, or, using Heider's terms, from external to internal attributions for observed behavior, might be useful.

In addition to investigating the possible existence of a Pawn orientation and a tendency to make external rather than internal attributions, it was the purpose of the pilot study to look at the nature of attributions made by people with depressed feelings. This was done to determine if any pattern or characteristic causal structure existed which might be seen as typifying the beliefs and behavior of depressed individuals.

The intent at the outset was to conduct the pilot study in two parts. The first part would investigate deCharms' notion of Pawn behavior and the attributions made by people with depressed feelings. If these were the findings, a second part would be conducted wherein the information obtained in the first part would provide a basis for a technique to modify depressed feelings in mildly depressed normal individuals.

Subjects. The subjects used in the pilot study were male and female undergraduate students at Memorial University. A screening test for depression, the D 30 (Dempsey, 1964), was administered in the classroom to 321 undergraduate psychology students. A cut-off score of 12 was used as an indicator of mild depression. Of these individuals, 57 had scores greater than or equal to 12 on the D 30. Of those students who could be contacted by telephone, 11 (three males and eight females) agreed to be interviewed. Out of this number two males and three females stated that they did not feel depressed. The

remaining subjects were interviewed and the findings reported pertain only to those six. All subjects were paid for their participation at the rate of $3.00 per hour.

Procedure. Subjects were contacted by telephone and asked if they were willing to participate in the "second part of the project." The first part of the "project" for the students was completion of the D 30 in class and the second part was participation in the pilot study. They were told that the second part was concerned with finding out about "the factors which make people feel pleasant and unpleasant in various life situations." They were told that the interview involved filling out some more questionnaires "similar to the one in class" as well as answering some questions.

When each subject arrived for the first appointment, he/she was asked to fill out the two self-report questionnaires, the D 30, and the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Reliability and validity information on these measures may be found in Appendices F and H. Following this, the subjects were asked a number of questions, the intent being to determine whether or not they were subjectively depressed. This was done by asking the subjects if items on the questionnaires "reminded them of any feelings that they had been having lately." When the answer to this question was in the affirmative, subjects were asked to elaborate and describe their feelings.

Once it was established that they were feeling depressed, the experimenter attempted to discover what problem the subject had which he/she felt was causing his/her depressed feelings. The subject was asked to describe this problem, referred to as the target problem, in detail. In the case of subjects with more than one problem, they were asked to describe only the one which they felt was the most important one. Subjects were asked questions directed at finding out the cause of the problem. They were asked what were their feelings about a situation which they described as characteristic of the target problem, and what they felt was their role in the causation of that particular situation.

In some cases, the interview took only one, one-hour session. In others, up to three sessions were required to obtain complete information.

Results. Subjects obtained a mean score of 12.5 (s.d. = 4.03) on the second administration of the D 30 and a mean of 10.8 (s.d. = 2.5) on the Beck Depression Inventory (Beck D.I.). The majority of data obtained in this part of the pilot was in the form of verbal information. Thus, the Results section will contain this information and impressions gained from it.

It was found that individuals who had depressed feelings had a generally negative view of themselves. This impression was gained from their self-statements. They appeared to perceive themselves as being the cause of

outcomes which they experienced as negative. In attributional terms, they seemed to make more internal rather than external attributions for what they perceived to be a negative interaction. For example, one student, in describing an interaction with her roommates which had ended with the subject's "getting the cold shoulder," had said "What sort of feeling am I putting across to them to make them feel this way?"

Discussion. The goals of the first part of the pilot study had been first, to determine if people with depressed feelings tended to make more external than internal attributions for observed behavior, and to see if their behavior followed deCharms' Pawn concept. A second goal had been to investigate the nature of attributions made by people with depressed feelings. If any characteristic patterns or designs emerged, it was the intent to use this information in Part II in an attributional approach to the modification of depressed feelings.

Counter to expectation, it was found that depressed people tended to make internal rather than external attributions for observed behavior. In addition it was found that depressed people viewed themselves negatively, rather than their life situation as would have been predicted from a Pawn orientation.

This observation, that depressed people have a negative view of themselves, was not a new finding in that it was similar to the symptoms typical of clinical depressive

illness, e.g., low self-esteem, low self-worth. However, viewed from an attribution standpoint, this finding represented certain new, possibly therapeutic options. It appeared that statements made by subjects seemed to follow consistent patterns. These patterns could be observed in the manner in which depressed people explained causes of their own behavior, i.e., reported causal attributions.

Subjects seemed to have been making causal attributions in a repetitive and characteristic manner, which suggested that some sort of attributional "pattern" existed. For instance, the subject who seemed to see herself as unable to accomplish anything ("I'd like to make something out of myself but I can't seem to -- I can't do anything right, right now.") could be seen as linking herself as the cause with the observed effect of "non-accomplishment." Instead of attributing this effect to environmental or external causes, the subject was attributing this effect to personal or internal causes. Kelley's (1972b) notion of causal schemata suggests that a more or less stable causal pattern might develop if the subject continued to form cause-effect relationships similar to the one mentioned above. This pattern, which suggested that she was unable to accomplish anything, would serve to "shape" subsequent attributions. In future when encountering a situation where non-accomplishment was the outcome, she would perceive herself as a principal factor in the outcome; she would be predisposed to make an inter-

nal attribution. In addition, research on the effects of self-fulfilling prophecy as expectation for success or failure would indicate that the subject may actually influence her inputs in order to confirm her predictions.

What is being suggested here is that depressed people, in addition to making internal rather than external attributions, also appeared to perceive their world and make causal attributions about their perceptions in certain characteristic manners. They seemed either to perceive themselves as unable to accomplish anything, or as responsible for bad outcomes in different situations, or as unable to prevent bad things, which were about to happen, from happening. These three patterns were of a form consistent with causal relationships which should result in a low estimate of personal competence (Bowerman, 1974).

Part II: Introduction. The purpose of the second part of the pilot study was to see if there was a manner in which the findings of the first part could be therapeutically applied to depressed individuals.

Reviewing the findings of Part I, one observation made was that depressed individuals tended to attribute the cause of their own negative interactions with the environment to internal as opposed to external sources. It was felt that a shift in attributional source from internal to external should be one objective in this second part of the pilot study. The other major observation that certain identifiable patterns of attributions existed, suggested

that a re-attribution approach should be directed at altering the characteristic attribution patterns. It was hypothesized that if these two objectives were met, then a reduction in depressed feelings would be observed.

Thus, given that subjects with depressed feelings appeared to make causal attributions which reflected an internal source of causality, the following experimental question was asked. Would covert rehearsal of statements stressing alternate, external sources of causality help to reduce depressed feelings in a student population?

Subjects. The subjects, though different from those who participated in the first part, came from the same population. Of those who were contacted 13 agreed to be interviewed. Of these, eight (two males and six females) agreed to participate in what was described to them as a project aimed at helping them learn to overcome their depressed feelings. Six subjects (two males and four females) who started the project returned for the one week follow-up. The data reported is only for the six who returned.

Procedure. Subjects were contacted in the same manner as subjects in the first part of the pilot study. In the second part of the project subjects were asked to complete the D 30, the Beck D.I., and the Depression Adjective Checklist - Form A or D.A.C.L. (Lubin, 1965). Reliability and validity information on the D.A.C.L. may be found in

Appendix J. Subjects were also asked a number of questions concerning their feelings. The questions were directed at determining which of the three patterns typical of the depressed students in Part I characterized the causal attributions made by these depressed students. Each subject was asked to identify a target problem which was perceived to be the most troublesome for him/her. Questions were directed at establishing perceived causes: "What do you feel is the cause of the problem? Can you describe a situation which is characteristic of this problem? Did you have anything to do with how things ended up in this situation? What do you think you had to do with the way things ended up in other situations?" and other questions of this nature.

Subjects were then told that they were being asked to participate in a project which was directed at determining if changing the way a person thought about their depressed feelings would have the effect of reducing the number of depressed feelings which they were having. They were given a general description of the experimental procedure which they would be asked to carry out when they returned in two days' time for their second interview.

In the time between the two interviews, the audio tape recording of the first interview was reviewed by the experimenter. The subject's perceptions of the causes of the target problem were identified and the predominant pattern was characterized. To use an example, the statement

"People feel uncomfortable around me. What sort of feeling am I putting across to them to make them feel this way?" was interpreted as the subject's perceiving self as responsible for negative outcomes. An alternative statement aimed at achieving two purposes was then constructed. The first purpose was to effect a shift in the source of causality from internal to external; the second was to provide an alternate cause for the observed negative outcome. For instance, the statement "In most every situation where I end up feeling down, there is probably another good reason or explanation for the way things turned out." was given to the subject. By suggesting that an alternative source beside herself might be seen as causal in the negative outcome, and by shifting the attribution of causality from an internal to an external source, it was predicted that the frequency of depressed feelings experienced by this subject would be reduced. In all cases, the statement given to the subject was printed on an index card.

In the second interview, the problem which had been discussed in the first interview was briefly reviewed, and the subject was asked if it was still a problem. This procedure was carried out to ensure that the prepared alternate attributional statement was relevant to the subject's target problem at the time of the second interview. The experimenter then verbally presented the subject with the alternate view of the outcome of the problem situation, explaining the reasoning behind this view. For instance,

using the above example, it was explained to the subject that in most situations, there were usually many reasons why things turned out the way they did -- including the way other people were feeling, what sort of things had happened to others that day, the way others were reacting to other people in the situation, etc.

The subject was then given the index card with the alternate attributional statement printed on it and was instructed to read over the statement and think about it in relation to his/her target problem each time he/she felt depressed about the target problem. The subject was also asked to record how many times he/she read over the statement. An appointment was made for one week's time. When the subject returned after one week he/she was again asked to fill out the three questionnaires and was asked questions concerning details of rehearsal and his/her views on the procedure in relation to his/her problem.

Results and Discussion. In the first interview the mean scores for subjects on the dependent measures were as follows: D 30, mean = 15.0, s.d. = 3.2; Beck D.I., mean = 17.2, s.d. = 7.8; and D.A.C.L., mean = 11.1, s.d. = 3.8. In the third interview, one week after being given the alternate attributional statement with instructions to rehearse, the rating scale scores were as follows: D 30, mean = 11.3, s.d. = 4.9; Beck D.I., mean = 9.3, s.d. = 8.7; and D.A.C.L., mean = 6.6 and s.d. = 3.3. Statistical

comparisons by *t*-tests were carried out on this data, and in all three cases difference scores were significant at $p < .10$. Given that the number of observations was so small ($n = 6$) this was an encouraging result.

In that the subjects were not very careful in their recording of the number of times they rehearsed the statement, it was not possible to report more than anecdotal data on this. Some subjects reported recording for one or two days ranging from once daily to twenty-five times a day then discontinuing recording. Others reported that they forgot to record, but irrespective of this, they found that they had memorized the statement after the first day and had rehearsed it, as one subject said, "unconsciously."

All six subjects, however, reported that they "felt better" and that they felt that rehearsal of the statement had contributed to this feeling.

Though there was not a comparison group of control subjects, the results were generally encouraging. A comment made by one of the subjects was "My attitude has changed, I'm not really different, I just feel I've taken a different concept of things." This suggested to the experimenter that some change had taken place which had had the result of reducing the number of depressed feelings subjects were having. Whether this change could be ascribed to such factors as a shift from internal to external attributions and the provision of alternate attributions for observed behavior, or to other factors like spontaneous

remission, or expectancy, or thought-monitoring, or thought stopping, was an important question, however, and one which clearly needed addressing.

Summary of pilot study findings. The pilot study was conducted for two reasons. First, it was carried out to investigate an hypothesis based on deCharms' Origin-Pawn concept, concerning the nature of attributions made by people with depressed feelings. Second, the intent was to formulate these findings into an attributional approach to a treatment aimed at reducing depressed feelings in a student population.

Though the findings relating to the first objective proved contrary to prediction, another observation made in the first section suggested additional therapeutic possibilities. It was observed that depressed people appeared to be making causal attributions which suggested that three patterns of attributional behavior might exist. Subjects appeared either to perceive themselves as unable to accomplish anything, or to perceive themselves as at fault and responsible for bad occurrences, or thirdly, to perceive themselves as unable to prevent bad occurrences from taking place.

It was hypothesized that providing the subject with a statement which suggested an alternate causal attribution would have the effect of reducing depressed feelings, measured by three depression rating scales. A cognitive

modification procedure, designed to alter the attribution pattern and shift the perceived locus of causality, was employed as a potential treatment of depressed feelings, in Part II.

The results of this application were encouraging as the scores on three depression rating scales decreased over a period of one week. It was noted however, that a number of factors which might have contributed to the change were not controlled. These were the effects of expectancy, spontaneous remission, self-monitoring, and thought stopping.

Rationale For The Present Study

The observations made in the discussion following Part I of the pilot study concerning the existence of attribution patterns in subjects with depressed feelings were interesting, and useful insofar as they appeared to be related to the depressed thoughts the students had, as well as being amenable to modification. These characteristic "patterns" however, were themselves somewhat speculative, to the extent that they were rather nebulous, being based, as they were, on the subjective and possibly biased observations of one person. What was needed was a conceptual framework for systematizing these observations in a manner amenable to a more rigorous empirical test. William Bowerman's theory of subjective competence provided such a framework.

In an unpublished manuscript, Bowerman (1974) developed a cognitive model to explain the perceived relationships between the self and the objects and events in the environment, and the effect which these perceptions have on subsequent behavior. This model is an extension of Heiderian attribution notions and is comprehensive, in that it suggests a way in which to conceptualize a cognitive approach to a person's appraised causal role in his or her behavior.

Subjective competence, according to Bowerman, is a person's perceptions (attributions) about his own fitness and ability, of which he is currently aware. In essence, the model suggests that individuals obtain a concept of subjective competence through an assessment of the cause-effect relationships between the self and objects and events in the environment with which the self comes in contact.

According to Bowerman's cognitive model, man is motivated to maximize and enhance estimates of personal competence. As a result, his interactions with the environment will be oriented toward this enhancement. Most self-object interactions are thus directed toward this end. Certain types of interactions however can lead to lowered estimates of personal competence. Under certain circumstances, an individual might act so that his estimate of personal competence is further lowered. In Bowerman's terms these interactions are "(1) avoiding causing pleasure

(e.g., rejecting an opportunity to go to school and obtain the rewards of education), (2) approach causing pain (e.g., push a button which closes a circuit which delivers a shock), and (3) avoid preventing pain (e.g., not push a button which will open a circuit and stop the delivery of shock)." (p. 9). From a self-perception point of view, these three interactions might be termed, respectively, failure to cause positive outcomes, causing negative outcomes, and failure to prevent negative outcomes.

The attribution patterns observed in the subjects who participated in the pilot study seemed congruent with Bowerman's model. It is proposed, then, that Bowerman's theory of subjective competence be used as a basis for conceptualizing the attribution patterns of depressed individuals.

It must be noted at this point that no claim is being made that all of the attribution patterns of depressed people be conceptualized within this framework, or even that all attributions which depressed people make might be conceptualized in this manner. As the aim of the present study is primarily modification of depressed feelings, using an attribution approach, Bowerman's model provides a useful focus and offers a structuring principle.

Before presenting the experimental hypotheses which are based on Bowerman's model, certain problems which arose in the pilot study should be addressed. As mentioned previously, there are at least four alternate explanations for

the favorable outcome observed in Part II.

First, expectancy on the part of both the subject and the experimenter could have been a contributing factor. Studies on the demand characteristics of the experimental situation (Orne, 1962) indicate that subjects are not neutral to the outcome of the study, in fact they have certain expectations concerning what is required of them to be a "good subject." These observations concerning demand characteristics would seem to apply to even a greater degree in a therapy-like situation where in all probability an expectancy of "cure" exists. Additionally, the concept of experimenter expectancy is a crucial factor especially where the experimenter and the principal investigator are one and the same person (Rosenthal, 1966).

Second, Eysenck's work (1953) on the remission rates of neurotics, including depressive neurotics, both in therapy and awaiting therapy indicated that approximately one third of a neurotic population "recovered" without the aid of treatment. Thus, in the present case, the possibility of spontaneous remission as a factor contributing to the obtained reduced scores cannot be ignored.

Third, Kazdin (1974) has shown self-monitoring to be a powerful self-modification technique, and other researchers have demonstrated its effectiveness in the area of weight control (Bellack, Rozensky, & Schwartz, 1974; Romanczyk, 1974), modification of study behavior (Broden, Hall, & Mitts, 1971), as well as modification of drinking

behavior (Sobell & Sobell, 1973).

Finally, as Gambrill (1977) has noted, a technique similar to thought stopping may be helpful in decreasing the frequency of negative thoughts in people with depressed feelings. Reading over a statement printed on a card might have had the effect of causing subjects to cease attending to their depressing and negative thoughts.

Prior to carrying out a larger scale project, however, other alterations of the procedure were necessary. Primary was the need for measures of attributions. In that one of the hypotheses of the pilot study had been that depressed individuals tended to make more internal than external attributions, it appeared that some measure of the locus of attributions should be taken both before and after "treatment." As well, measures to determine if the experimenter's perception of the subject's attributional pattern was in fact the actual pattern employed by the subject, were needed. Also, a structured interview technique was required so that the necessary information be obtained quickly and efficiently.

The pilot study had been encouraging, in addition to being instructive in pointing out the pitfalls as well as the possible results of a study such as the one about to be undertaken. The results indicated that the depressed subjects made causal attributions concerning their own behavior in a manner which suggested that "patterns" of attributional behavior existed. A theoretical framework

from within which to conceptualize these patterns was needed and was provided in the form of Bowerman's theory of subjective competence. It appeared that depressives interpreted their behavior in a manner which led to lowered estimates of personal competence. It was admitted that the patterns which should lead to an appraisal of lowered personal competence were not a complete or exhaustive listing of attribution patterns made by depressed individuals, but appeared to provide a useful conceptual model which would enable more accurate assessment and systematized modification. The experiment presented in this paper was designed to take these factors into account.

General hypotheses and experimental predictions. In addition to the Treatment group two control groups, entitled the Expectancy Control and the Waiting-List Control, were included.

There were three general hypotheses in the present study. First, it was hypothesized that individuals with depressed feelings made more internal than external causal attributions concerning their own interactions with the environment. This would be measured by a new scale, the Locus of Responsibility Scale. Second, it was hypothesized that individuals with depressed feelings made causal attributions concerning their own interactions with the environment which followed at least one of three identifiable patterns. That is, they perceived themselves as either (a)

failing to cause positive outcomes, or (b) causing negative outcomes, or (c) failing to prevent negative outcomes. Scores on a new measure, the Attribution Pattern Indicator, would indicate the predominant attribution pattern used by the subjects. Third, it was hypothesized that alteration of the subjects' predominant attribution pattern through covert rehearsal of a statement which suggested attributions alternate to the predominant pattern, would have the effect of reducing the number of depressed feelings these subjects were having.

These hypotheses were formulated into five experimental predictions. It was predicted that:

(1) post-treatment subjects in the Treatment condition would make more external attributions in comparison to subjects in the two control conditions as shown by an increased score on the Locus of Responsibility Scale;

(2) subjects in the Treatment condition, as a result of undergoing the re-attribution treatment, would exhibit greater change on the attribution patterns as measured by the Attribution Pattern Indicator than subjects in the two control conditions;

(3) subjects in the Treatment condition, as a result of undergoing the re-attribution treatment would have lowered scores, and would show greater change from pre-test to post-test on the three depression rating scales than subjects in the two control conditions;

(4) subjects in the Waiting-List Control condition would show significant decreases in depression rating scales'

scores and in the attribution measures' scores from second assessment to third assessment (post-treatment) as a result of undergoing the re-attribution treatment for one week; and

(5) pre- to post-test change in depression rating scale scores would be correlated with pre- to post-test change on the Attribution Pattern Indicator.

Method

Design

There were three experimental conditions in the present study: the Treatment condition, the Expectancy Control condition, controlling for the effects of expectancy, self-monitoring, and thought stopping, and the Waiting-List Control condition which controlled for the effects of spontaneous remission over time.

All subjects were seen for a total of three, one half-hour long sessions. Subjects in the Treatment and Expectancy Control conditions were interviewed initially, given their assignment two days later, and interviewed a third time one week after the second interview. Subjects in the Waiting-List Control condition were interviewed initially, given their assignment one week after the first interview, then interviewed a third time one week after the second session.

In the first session, subjects in the Treatment condition filled out the depression rating scales and attribution measures. An assessment interview followed. In the second interview, two days after the first, they were given an index card with an attributional statement on it. They were told to think about the statement in relation to their problem each time they thought about the problem which made them feel depressed. They were also asked to record the number of times they read over the statement.

In the third session, subjects again completed the scales and measures and were assessed for change, during an interview.

The sequence of instructions for subjects in the Expectancy Control condition was identical to that for subjects in the Treatment condition. Statements with respect to expected positive benefits were the same. The first session, like that for the Treatment subjects, comprised an assessment interview and administration of the rating scales and measures. In the second interview, subjects were given a non-attributional statement printed on a card and were instructed to replace their depressed thoughts with thoughts about the statement. They were also asked to monitor the number of times which they read over the statement. The concept of replacement of thoughts with a statement was used as a control for the therapeutic effects of thought stopping. The purpose of recording the number of times the subjects carried out this procedure was to control for the effects of self-monitoring. In the third session, subjects again were required to complete the rating scales and measures and were assessed for therapeutic change. Since this group of subjects did not receive the experimental manipulation of change in attributional pattern and direction, in the form of an attributional statement, the Expectancy Control condition also served as a control for the positive expected benefits of receiving treatment.

The sequence for subjects in the Waiting-List Control condition differed substantially from that for the other two conditions. Since the time period between the assignment and final assessment was short, only six days, it was possible that any observed changes could be due to the subjects' spontaneous change for the better over time. To control for this spontaneous remission, subjects in the Waiting-List Control condition were assessed in the first interview, then not seen again until six days had elapsed. In the second interview, they were again asked to complete the measures and rating scales, then were given an attributional statement with the same instructions to rehearse and monitor as had been given to the Treatment subjects. In the third session, subjects in the Waiting-List Control were asked to complete the measures and rating scales and were assessed for therapeutic change.

Thirty female subjects were included in the study. Ten subjects were assigned each to the Treatment, Expectancy-Control, and Waiting-List Control condition prior to the first interview. This pre-interview assignment was necessary because the time for the second interview, after a 1-day or 6-day interval, had to be arranged during the first interview. Subjects were divided into groups by age according to the following age groupings: ages 17-20, 21-24, 25-29, 30-34, 35-39, 40-44, and 45-55.

Assignment to conditions was arrived at by successively assigning individuals to conditions making sure that a bal-

ance across age groups was maintained.[1] This procedure was continued until subjects had been equally distributed within age groups across all experimental conditions.

Subjects

Obtaining subjects. The subjects used in the experiment were females aged 17-55 whose participation was solicited through the placement of advertisements in the city newspapers and in various agencies throughout the city, as well as university, supermarket, and laundromat bulletin boards. The advertisements asked for females who were feeling depressed and who were willing to participate in a project aimed at helping them to learn to overcome their depressed feelings. An example of this advertisement is given in Appendix A. In addition, over 800 undergraduate spring and summer semester students were screened in class using the D 30 with a cut-off of 12.

Studies have shown that the ratio of females to males who are admitted to mental hospitals with a diagnosis of depression is approximately two to one (Grinker, Miller, Sabshin, Nunn, & Nunnally, 1961; Grosser, 1966; Lehmann, 1971; Silverman, 1968). Estimates of proportions of female to male depressed members of the general population are equivalent to this (Williams, Friedman, & Secunda, 1970). As the results of the pilot study indicated that in a student population the percentage of depressed students who were female approximated 65%, it was concluded that sufficient

numbers of depressed males would not be available to serve as subjects in equal proportions to the number of females available. In addition, a difference in response to the investigator might be found between males and females. Finally, recent experimental work has shown differential responses to depression rating scales by males and females. Both Byrne, Boyle, and Pritchard (1977) and Hammen and Padesky (1977) concluded that males and females subjectively appraise affective disturbances in different ways and use different behavioral modes to express such an underlying disorder. On the basis of these three factors then, sex difference in response to the experimenter, availability of subjects, and possibly differential response to assessment, it was decided to restrict the sample population to females.

Women responding to the advertisements and posted signs were asked to telephone the experimenter to arrange an appointment. During this telephone call information concerning the project was given to the subject. Appendix B contains this information. Undergraduate women who scored above 12 on the class-room administration of the D 30 were telephoned and asked to drop by the experimenter's office for a 5-minute explanation of the purposes of the project. During this interview, subjects were asked how they had been feeling on the day when they had filled out the questionnaire and whether or not these feelings had been unhappy ones. Those women who indicated that they had

depressed feelings were then given information concerning the nature of the project, identical to that given to phone-in subjects, and were asked if they were willing to participate. Those women who indicated that they did not feel depressed were given a short explanation of the purposes of the project and were thanked for dropping by. Appendix C outlines this interview.

All subjects who indicated that they had depressed feelings were, in addition, asked for demographic information. They were asked for their age, their educational level (in the case of phone-in subjects), as well as whether or not they had been treated by a psychiatrist in the past six months. The information concerning age and educational level was obtained, respectively, for the purposes of assignment to conditions prior to the beginning of testing, and to determine whether or not the individual would be able to complete the questionnaires and rating scales. Limiting the population to those who had not seen a psychiatrist in the past six months increased the probability of obtaining mildly depressed subjects, as well as eliminating the possibility of interference with an on-going therapy program. An appointment was then arranged for all subjects who agreed to participate in the project.

Screening subjects for depressed feelings. Upon arrival for the first appointment, subjects who had telephoned were asked to fill out the three depression rating

scales -- the D 30, the Beck D.I., and Form A of the D.A.C.L. A description of each of these scales may be found in the Measures section below. Subjects who had already filled out the D 30 in class were asked to fill in only the Beck D.I. and the D.A.C.L. during the first interview. It was explained to those subjects who did not reach the cut-off levels on at least two of the three scales, that the study was concerned only with those individuals who were particularly depressed. For those subjects, a frank discussion concerning their depressed feelings followed, and the experimenter told the subject that she was not as depressed as many others. She was thanked for volunteering to participate and was paid for the session.

Payment of subjects. Subjects who completed all three sessions were given $10.00 at the end of the third session. In addition, all subjects were required to make a deposit of $10.00 with the experimenter in the first session, which was returned contingent upon completion of all three sessions. A receipt for this deposit was given to all subjects. The rationale given to the subject for this procedure was that once begun it was important that participation in the study be carried to completion.

Full details of subject participation may be found in Appendix D.

Measures

The measures which were used were the D 30, the Beck Depression Inventory (Beck D.I.), the Depression Adjective Checklist or D.A.C.L. - Form A, the Subjective Depression Indicator and Questionnaire - Forms I and II, the Attribution Pattern Indicator, and the Locus of Responsibility Scale.

With the exception of the Beck D.I. all these measures were designed to be self-report inventories, completed by the subject. The Beck D.I. was originally designed for use on a severely depressed psychiatric population and the instructions require that the administrator of the test read over all the items to the subject before the subject responds. The instructions do allow, however, for subjects who are able to read by themselves and in these cases the Beck D.I. becomes a self-report form. In the present experiment, this is the manner in which it was used.

The D 30 (Dempsey, 1964) is composed of 30 items from the D-Scale of the Minnesota Multiphasic Personality Inventory (MMPI). Appendix E contains a sample of this scale. These items are in the form of statements which the subjects indicate as being either true or false as applied to them. The statements refer to conditions, perceived or actual, under which depression occurs, as opposed to directly referring to feelings of unhappiness or depression. The score on this test is obtained using the scoring system of the MMPI (Hathaway & McKinley, 1951) and summing the marked

items. Appendix F contains information on the construction, reliability, and validity of this scale. A cut-off score of 12 was set on the basis of this information.

The Beck D.I. (Beck et al., 1961) has 21 items each of which consists of four or five written statements scored with weighted numbers. A sample of the Beck D.I. may be found in Appendix G. Instructions direct that all statements in each item be read before the statement which best describes how the subject feels at the present time is checked. The score on the Beck D.I. is the sum of the weighted responses of all items. Information on the reliability and validity of the Beck D.I. may be found in Appendix H. On the basis of this information a cut-off score of 10 was set.

The Depression Adjective Checklist or D.A.C.L. - Form A (Lubin, 1965) is a list of 32 adjectives, 22 of which are positive (scored if checked) and 10 negative (scored if not checked). A sample of this scale is in Appendix I. The checklist was developed as an instrument with which to measure transient depressed mood. The subjects are instructed to check those adjectives which describe how they feel at the present time. The score is the total number of items checked. Appendix J outlines the reliability and validity information concerning the D.A.C.L. The cut-off level of 9 is based on this information.

To summarize then, the cut-off scores for the three depression rating scales were: D 30 - 12, Beck D.I. - 10,

and D.A.C.L. - Form A - 9. Subjects were eligible for inclusion in the study if their scores on two out of three of these scales were greater than the cut-off scores.

The Subjective Depression Indicator and Questionnaire (S.D.I.Q.) Forms I and II were designed with the intention of obtaining a subjective measure of depression. Form I measured first, the subject's level of depression "compared with a week ago." A sample of the S.D.I.Q. - I may be found in Appendix K. The purpose of the first item was to determine whether or not her depressed feelings were transient and also to provide some measure against which to compare Form II. Second, Form I measured the subjective extent of depression at the time of testing. This item was similar to Aitken's Visual Analogue Scale (1969) which consisted of a horizontal 100 mm line, the ends of which represented normal mood and the extreme of depression respectively. Subjects were asked to mark the line according to how they felt at that time. The ends of the line which constituted the second question on Form I were marked "not depressed at all" and "very much depressed," respectively. The third item on Form I was included to obtain knowledge concerning what the subject perceived to be her most importnat problem areas as well as to provide information around which to structure the first interview.

Form II of the S.D.I.Q. consisted first, of an item identical to the first item on Form I. A sample of the S.D.I.Q. - Form II may be found in Appendix L. Form II

also contained a question which asked if the subject perceived herself as changed over the course of the week. Items 1 and 2 on both Forms I and II consisted of 7-point scales which required that the subject circle a number on a line drawn between two end points. The end point responses for item 2, Form II were "changed for the better" (1) and "changed for the worse" (7). Subsequent items on Form II required the subjects to write a few lines describing first, what they perceived had changed; and second, what they perceived to be the causes of the change. The last item was included to determine if the subject was able to generalize what she had learned in this experiment to other problem situations in her life.

The Attribution Pattern Indicator (A.P.I.) was designed to measure the predominant attribution pattern of the subject. A sample may be found in Appendix M. Statements were constructed which were characteristic of each pattern. For instance, the statement "There are some things which I'd really like to do but won't try because I'm afraid of not succeeding." was used as characteristic of the attributional pattern "perceived failure to cause positive outcomes." Three statements were constructed for each pattern -- to be scored positively (as the one above) or to be scored negatively. Under each statement on this scale a 7-point line was drawn, the poles of which were labeled "most like me" or "least like me" or a variation of this form consistent with the wording of the item. The subject

was instructed to circle a number which best described how she felt "today." The scoring procedure for this scale may be found in Appendix N.

The Locus of Responsibility Scale (L.R.S.) was designed as a measure of the direction of attributions, internal or external, made by the subject concerning her target problem (see Appendix O). It consisted of two items one which was designed to measure perceived responsibility for problems which caused depressed feelings and a second which was designed to measure perceived locus of causality of depression. These concepts were formulated into two statements, "When I think of all the problems which make me feel depressed, I think that the person most responsible for these problems is ..." and "When I think about the problem which I worry about the most, I think that this problem is caused mainly by ...". Under each statement was drawn an unsegmented 10-centimeter line with the poles designated "me" or "others." The subject was asked to make a mark through the line at a point which best described how she felt "today." This scale was scored by measuring the distance in centimeters from the left (zero) end of the line, to the point at which the subject's mark intersected the line.

Procedure

Rating scale administration. After the administration of the three depression rating scales, all subjects were asked to fill out the Attribution Pattern Indicator (A.P.I.) and Form I of the Subjective Depression Indicator and Questionnaire (S.D.I.Q. - I). Before subjects were asked to fill in the third question on the S.D.I.Q. - I, they were asked to think about what it was like for them to feel depressed. They were asked to think about which problems and worries they felt were most often associated with their depressed feelings. They were then asked to write a short sentence which described each of these problems or problem areas. Following this, subjects were asked to indicate which problem they felt was the most important one for them, the one which they thought about the most, the one which they felt made them feel the most depressed, most often. Subjects were then told that this was the problem which was to be discussed. At this point, verbal permission for audio tape recording of the interview was obtained.

First interview: All subjects. Concerning the target problem, the subject was first asked to describe a situation which was representative of the target problem. She was asked who was involved, what was said, how she thought the problem came about. She was asked what role she thought she played in the outcome of the situation described and what she felt were the causes of the situation.

This line of questioning was directed at determining which of the three hypothesized attributional patterns predominantly characterized the subject's causal attributions concerning this problem. For example, a woman who described her target problem as "I don't think my husband really enjoys being married, although I try hard to please him" was asked to describe a situation which characterized this problem. Her response might be: "my husband wants to go out, but won't go because he feels I'm preventing him. He ends up leaving, saying 'I'm going anyway, even if you try to stop me.' and I feel rotten. I feel responsible."

The subject was then asked who or what was the most important person or thing in her life. She was asked how she related to this person or thing, and how she felt that she affected it. Using the above example, the subject might say that her husband was the most important thing in her life, and that she felt that every time they interacted they ended up having a fight, and that she felt responsible. This woman, who described herself as feeling "rotten" and "responsible" after an argument with her husband, seemed to be attributing these effects (arguments, disagreements) to internal causes ("I feel responsible"). The attributional pattern which would seem characteristic of these causal attributions would be the second listed previously, that is that the subject perceived herself as causing negative outcomes (the arguments and disagreements).

After it was determined by the experimenter which pattern predominantly characterized the subject's causal attributions at the end of the interview, all subjects were told that they were going to be asked to carry out a new procedure which would help them to feel less depressed. It was explained that this new procedure was limited to one problem (the target problem) because most people had many problems and it would be impossible to deal with all of them effectively in such a short time. Subjects were then told that once they had learned the procedure for dealing with the target problem then they would be able to apply the same procedure to other problems which they had and thereby possibly avoid becoming depressed in future. By suggesting to the subjects that the procedure which they were being asked to carry out might be helpful, a positive expectancy was created for all subjects in all conditions.

At the end of the first interview, all subjects were told that they would be given, in the second session, "some simple instructions for ways for you to think about your feelings, regarding the problem we've talked about." They were also told that these instructions, which would be given to them in the next interview, would take the form of a small "reminder-type" card. Prior to arrangement of a time for the second interview, subjects in all conditions were asked to complete the Locus of Responsibility Scale. After this, the second appointment was arranged.

Procedure for subjects in Treatment condition. In the time between the first and the second interview, Treatment subjects' tapes were reviewed by the experimenter. Answers to questions concerning the subjects' perception of the causes of the problem which they had related in detail, and their perceived role in the causation of the problem were conceptualized within one of the three hypothesized attributional patterns.

Continuing with the above example, the woman who felt responsible for her husband's not wanting to be married was perceived as using an attributional pattern which suggested that she perceived herself as causing negative outcomes. An alternate statement which was intended to initiate causal attributions counter to this pattern was constructed by the experimenter. This was referred to as an alternate attribution. For instance, the alternate attributional statement might be "If I think about my situation, careful consideration will show that there are many reasons for the way things turn out." The purpose of this statement was to encourage the subject to seek other causes for observed negative effects, as opposed to perceiving herself as the sole cause of these negative effects.

This alternate attribution was typed on one side of an index card. On the other side was typed "Record, with a mark, each time you say this statement over to yourself." The days of the week between the second and third appointment were typed on that same side of the card, allowing

room for recording. An example of one of these cards, and instructions given to the subjects, may be found in Appendix P.

During the second interview, the procedure for the Treatment subjects was as follows. First, a short summary of the subject's target problem was presented to the subject verbally. The subject was asked "if this was still a major problem?" If the subjects felt that some other problem was more important, then that problem was discussed with the intent of determining whether the same attributional pattern was applicable to that particular problem. The following instructions were then given to the subject.

> As I said the last time I saw you, in this interview I'm going to be providing you with a way of approaching your feelings which we talked about in the last session. As I said at that time, this procedure is new, but I have some very good reasons for believing that it will be effective and useful for someone with problems like yours. Now after thinking about what we talked over the last time, it seems to me that you are thinking about your problem in a certain way.

At this point the experimenter described the target problem in attributional terms to the subject. Using the same example:

> Every time you get into an argument with your husband, and end up feeling upset about it afterwards, it seems that you are blaming yourself. It seems that you think you are responsible for the outcome of the argument. It seems that things might be different for you if you learned to think about this problem in a different way.

At this point the alternate attribution was explained to the subject.

> For instance, you might think to yourself that there are usually many other reasons why people have arguments, or why arguments happen, and in this particular case, you'll probably see that there are other reasons besides yourself for why this argument happened.

The subject was then asked if this line of logic was clear, and additional explanations were given, if necessary. Then the subject was given the alternate attributional statement printed on a card, and was read the following instructions:

> What I want you to do is to take this card and read over the statement printed on it every time you think about your problem. Each time you read it over, try to think about your problem in a manner similar to that suggested by the card, as opposed to the way you used to think about your problem.

The subject was then told:

> I realize that I haven't given you a very detailed explanation of why I think you should do this. But because I want to make as fair an evaluation as possible of whether or not this new procedure is going to be helpful for people like you, I can't go into a long explanation right now. I'll be able to give you a detailed explanation of the whole procedure at the end of the third session, and you may ask any questions which you like at that time.

Subjects were then asked to keep a detailed record of how many times they read over the statement on the card, by marking in the space provided each time they read over the statement. This self-monitoring was emphatically stressed. An appointment was then made for a day, one week later.

When subjects in the Treatment condition arrived for the third session, they were immediately asked to fill out the three depression rating scales as well as the Attribu-

tion Pattern Indicator (A.P.I.), the Locus of Responsibility Scale (L.R.S.), and the Subjective Depression Indicator and Questionnaire - Form II (S.D.I.Q. - II). Subjects were then asked how they were feeling, how things had gone over the week, did they feel any differently, what did they think was the cause of them feeling differently, and whether or not anything had happened in their home situation which might have caused a change in feeling? They were also asked for details of rehearsal of the statement, i.e., how many times they read over the statement, did they keep the card with them at all times?, etc. Subjects were then debriefed which involved a short explanation of the nature and purpose of the experiment. They were also asked if they had any unanswered questions concerning any part of the procedure and if they had any suggestions for change.

Following this, all subjects were given back their $10.00 deposit, were paid $10.00, and were asked to return their cue-cards with the alternate attributional statement typed on it.

Procedure for subjects in the Expectancy Control condition. For subjects in the Expectancy Control condition the procedure was quite similar. During the first session, they were treated identically to the Treatment subjects, and were asked to return in two days' time. In the intervening time, the tape-recording of their first interview was reviewed by the experimenter and the manner in which they

perceived their problem was conceptualized in terms of one of the three attributional patterns, described above. Then a global, non-attributional statement was constructed and typed on one side of an index card. Two statements were used for subjects in this condition. They were "If I think carefully about my situation, it will seem that life's experiences are what determine how people are." and "If I think carefully about my situation, it will seem that to be rational is an important thing." These two statements were chosen because it did not appear that they would suggest a shift in causal attributions, to the subject. They were however, similar in length to the attributional statements given to Treatment subjects, and they included the notion of "thinking carefully." The crucial ingredient of attributional shift, however, was missing from these two global statements.

On the reverse side of the card was the instruction "Record, with a mark, each time you say this statement over to yourself." The days of the week which fell between the second and the third interviews were also printed on the card, and room for recording was allowed.

At the beginning of the second session, subjects in the Expectancy Control condition were asked if a short summary of their problem, verbally delivered to them by the experimenter, was an accurate account of their target problem. Again, as with the Treatment subjects, they were given instructions concerning the rationale behind the procedure,

as well as why the experimenter thought it would be effective. The following instructions were then given to subjects in the Expectancy Control condition:

> After thinking over what we talked about last time, it seems that you're spending a lot of time thinking about your problem and that the more you think about it, the more you get depressed. It seems that things might be different for you if you didn't think about your problem as much and thought about something else instead. So, what I've done, is think about your problem, and I've constructed a thought which might be good for you to think about instead of your problem.
>
> Now what I want you to do is to take this card, with this thought written on it, and I want you to read it over every time you think about your problem. I want you to try and replace thoughts about your problem with this thought.

Subjects were then told that the experimenter realized that a very detailed rationale had not been provided for the procedure, but were told that a full explanation would be forthcoming during the third session. Subjects were then asked to keep a detailed record of the number of times which they read over the statement, by marking in the space provided each time they read the statement printed on the card. This self-monitoring aspect of the procedure was stressed. An appointment was made for a day, one week hence.

When subjects in the Expectancy Control condition arrived for the third session, they were immediately asked to fill out the three depression rating scales as well as the Attribution Pattern Indicator, the Locus of Responsibility Scale, and the Subjective Depression Indicator and Questionnaire - Form II. Subjects were then asked questions concerning how they were feeling, how things had gone over the

week, did they feel differently, what did they think caused their different feeling, and whether or not something had changed in the home situation which might have caused a change in feeling? They were also asked details of their rehearsal of their statement, i.e., how many times they had rehearsed it, did they keep the card with them at all times?, etc. Subjects were then given a short explanation of the nature and purpose of the experiment. After the procedure used in the Treatment condition was explained to the subjects in the Expectancy Control condition, these subjects were asked if they were interested in participating in the treatment at a later date if the Treatment condition subjects "get better, faster." If necessary, arrangements were then made for this event. Following this, all subjects were asked to return their cue-cards, were given back their $10.00 deposit, and were given $10.00 for participating in the project. Finally, all subjects were asked if they had any unanswered questions, or if they had any suggestions to make concerning any aspect of the project.

Procedure for subjects in Waiting-List Control condition. The procedure for subjects in the Waiting-List Control condition was essentially similar to the procedure for subjects in the Treatment condition. In the first session, they were asked the same questions concerning the target problem. At the end of the first session however, they were told by the experimenter:

> Unfortunately a lot of people have been interested in this project. As a result, I've had some difficulty with scheduling, and so instead of seeing you in two days' time, I'll only be able to see you for the second interview in one week's time.

An appointment for a day one week hence was then arranged.

In the time between the first and second interviews the tape-recording of the first interview was reviewed by the experimenter. Again, as in the other two conditions, the target problem as stated by the subject was conceptualized within one of the three attributional patterns. An alternate attributional statement was constructed and typed on an index card. This procedure was identical to that followed with subjects in the Treatment condition.

Upon arrival for the second appointment one week later, subjects were asked to immediately fill out the three depression rating scales as well as the A.P.I., the L.R.S., and the S.D.I.Q. - II. These measurements were made so as to provide a comparison with subjects in the other conditions and a control for the effects of spontaneous remission over the period of one week -- the length of the "treatment" period.

For the remainder of the experimental procedure, subjects in the Waiting-List Control condition were treated identically to the Treatment subjects. They were also given instructions concerning the rationale behind the procedure, and were given the alternate attributional statement using the same instructions as those given to subjects in the Treatment condition. Finally, after recording procedures

were explained, an appointment was made for one week's time.

In the third session, Waiting-List Control subjects were again asked to fill out the three depression rating scales and the three attribution measures. They were asked questions concerning their feelings and home situation in a manner identical to that asked of the Treatment subjects. They were then given an explanation of the nature and purpose of the experiment in a manner again identical to that given to the subjects in the Treatment condition. The purpose of the one-week's delay between the first and second sessions was not explained to the Waiting-List Control subjects.

Finally all subjects were given back their $10.00 deposit, were given their $10.00 payment, and were asked to return their cue cards.

Results

Depression Rating Scales

Means and pre-test intercorrelations. The means and standard deviations obtained by subjects in all three conditions at pre-test and post-test are presented in Table 1.

Intercorrelations carried out on the pre-test scores of the three depression rating scales across all subjects and all conditions showed these scales to be significantly correlated. The Pearson product-moment correlation coefficient between the D 30 and the Beck D.I. for all 30 subjects was .61 ($p < .01$), and between the D 30 and the D.A.C.L. was .41 ($p < .02$). The correlation between the Beck D.I. and the D.A.C.L. was .57 ($p < .01$). These correlation coefficients compare favorably with those reported in the literature. (See, for example, Beck, 1967; Lubin, 1966; Marsella, Sanborn, Kameoka, Shizura, & Brennan, 1975; and Seitz, 1970).

Analysis of depression rating scale scores. A preliminary analysis of the data presented in Table 1 was carried out using three, 3 x 2, experimental condition by test (pre-test to post-test) analyses of variance, one ANOVA for each depression rating scale. The F-ratios of these analyses which are presented in Table 2, all showed a significant main effect for test, indicating that subjects in all three experimental conditions improved from pre-test to

Table 1

Mean scores and standard deviations obtained by subjects in each condition on the three depression rating scales

Scale		Condition						
		Treatment		Expectancy Control		Waiting-List Control		
		Pre-test[b]	Post-test[c]	Pre-test	Post-test	Pre-test	Post-test	Post-treatment[d]
D 30	m.	14.9	12.0	18.5	15.6	18.6	17.6	14.9
	s.d.	4.6	5.2	4.8	5.1	4.8	3.8	5.7
B.D.I.[a]	m.	18.0	7.9	19.2	12.9	18.8	15.6	11.9
	s.d.	5.9	7.1	6.3	7.0	5.8	8.2	5.7
D.A.C.L.	m.	13.7	9.1	13.3	8.3	12.6	9.9	9.0
	s.d.	5.3	5.4	4.2	3.6	3.1	3.7	4.3

Note. [a]B.D.I. = Beck D.I.
[b]Pre-test = initial assessment interview for all subjects.
[c]Post-test = third and final assessment for Treatment and Expectancy, second assessment for Waiting-List subjects. Scores upon which analyses of variance and covariance were carried out.
[d]Post-treatment = third and final assessment for Waiting-List Control subjects.

Table 2

F - ratios for analyses of variance and covariance carried out on depression scales scores

Scale	3 x 2 Analysis of variance			Analysis of covariance
	Main effect, Conditions df = 2,27	Main effect, Test df = 1,27	Interaction of Condition x Test df = 2,27	df = 2,26
D 30	3.834*	5.323*	0.416	1.972
B.D.I.[a]	1.347	31.414***	2.930	3.25*
D.A.C.L.	0.081	19.777***	0.592	0.481

Note. [a]B.D.I. = Beck D.I.

*p < .05
***p < .001

post-test.

The effect of interest in the present study is whether the conditions improved to a different extent, i.e., whether subjects in the Treatment condition showed greater improvement relative to subjects in the two control conditions. This effect would be indicated by a significant interaction of conditions by test. The 3 x 2 analyses carried out indicated no such interaction for any of the three depression rating scales.

In the case of the Beck D.I., however, there was a tendency toward significance in the interaction: F = 2.930, df = 2,27, $p < .07$. Furthermore, inspection of the pre-test means in Table 1 suggests that there were slight pre-test differences between experimental conditions. The significant main effect for conditions in the case of the D 30 in the absence of a significant interaction suggests that for this measure, at least, these pre-test differences were significant. Such differences might tend to obscure a significant interaction. This would suggest that analysis of covariance, with post-test scores as the criterion and pre-test scores as the covariate would be the more appropriate statistic for analysing these data.[2] Covariance analyses would adjust the pre-test means for chance differences among the experimental conditions.

Analyses of covariance were carried out on the Beck D.I., the D 30, and the D.A.C.L. The F-ratios and p-values for these analyses are also reported in Table 2.

Whereas the lack of a significant interaction in the two-way ANOVA had suggested no relative change among conditions, an analysis of covariance which took into account pre-test discrepancies in scores did show relative change among conditions. With post-test Beck D.I. scores covaried on the pre-test scores, the analysis showed a differential change across conditions at close to standard levels of significance (Adj. $F_{2,26} = 3.25$, $p < .055$).

Specific a priori contrasts carried out comparing the Treatment with the two control conditions using the adjusted post-test means and the error term from the covariance analysis of the Beck D.I. indicated a significant difference for this comparison ($F_{1,26} = 5.392$, $p < .05$). Additional contrasts carried out on the adjusted post-test means showed that the Treatment condition differed significantly from the Waiting-List Control ($F_{1,26} = 6.470$, $p < .025$) and that the two control conditions were not significantly different from one another ($F_{1,26} = 1.135$, $p > .20$). It can be concluded from these analyses of Beck D.I. scores that there was a greater reduction in levels of depression as measured by this scale for Treatment condition subjects, as a result of having undergone the treatment, than there was for subjects in the two control conditions.

It should be noted that the post-test scores on the Beck D.I. for subjects in the Treatment condition fell well below the cut-off level which distinguishes "normals" from

"mild depressives", whereas scores for subjects in both of the control conditions failed to reach this level. This observation also applies to the D 30, although the effect is not as substantial as it is for the Beck D.I.

An analysis of covariance carried out on the D 30 did not indicate a significant difference between experimental conditions (Adj. $F_{2,26} = 1.972$, $p < .16$). Likewise, the covariance analysis of the D.A.C.L. did not indicate a significant result. In the case of the D 30 scores, it is suggested that the pre-test differences were of sufficient magnitude to mask an effect of differential change across conditions.

Pearson product-moment correlation coefficients were calculated on the post-test scores which had contributed to the foregoing analyses. These coefficients are presented, by condition, in Table 3. The three depression scales correlated at, or above, or close to significance in all three conditions.

In addition to showing post-test data, Table 1 shows the means and standard deviations obtained by subjects in the Waiting-List Control condition at the time of their third and final assessment, after they had received the treatment (post-treatment). Related measures *t*-tests were conducted between the scores obtained by the Waiting-List Control subjects in the second and third (post-treatment) week, for all three depression rating scales. All *t*-tests, unless otherwise noted, were two-tailed.

Table 3

Correlation coefficients from intercorrelation of depression scales' post-test scores, shown for experimental condition

	Condition								
	Treatment			Expectancy Control			Waiting-List Control		
Scale	D 30	B.D.I.	D.A.C.L.	D 30	B.D.I.	D.A.C.L.	D 30	B.D.I.	D.A.C.L.
D 30		.91***	.82**		.77**	.55*		.70**	.53
B.D.I.[a]			.66*			.48			.65*
D.A.C.L.									

Note. [a]B.D.I. = Beck D.I.
*$p < .05$
**$p < .01$
***$p < .001$

The decrease in scores from the second to post-treatment week on the Beck D.I. is large, indicating a decrease in perceived depressed feelings on the part of these subjects. This difference is highly significant ($\underline{t}_9 = 5.256$, $\underline{p} < .001$). The decline in scores from second week to post-treatment also indicated a decrease in depressed feelings as measured by the D 30, but the difference was only of borderline significance ($\underline{t}_9 = 2.059$, $\underline{p} < .07$). No significant differences were found between the second week and post-treatment scores on the D.A.C.L. where the $\underline{t}$-value was less than 1.0.

Overall, Waiting-List Control subjects appear to have perceived themselves as less depressed after undergoing the treatment for a period of one week. Although it is not appropriate to make a statistical comparison between the post-treatment Waiting-List Control condition scores and the post-treatment scores of subjects in the Expectancy Control and Treatment conditions, inspection of the means would seem to indicate that there is a difference between the three conditions in the degree to which their depressed feelings were alleviated. This difference could be attributed to the extended time period involved for Waiting-List Control condition subjects, and a differential expectancy, compared with subjects in the other conditions, with regard to therapeutic benefit, owing to the one week's delay.

In summary then, the results of the analyses of depression rating scale scores showed all subjects in all three conditions improving from pre-test to post-test. Covariance analyses and a priori contrasts carried out on the Beck D.I. scores show subjects in the Treatment condition as having improved more from pre- to post-test than did subjects in the two control conditions. Fortuitous pre-test discrepancies in the D 30 scores across conditions do not permit any firm conclusions with respect to the general hypotheses and experimental predictions to be drawn from the results of the D 30 analyses. A similar conclusion with respect to the analysis of D.A.C.L. scores arises from the general objection to the D.A.C.L. as a measure of more enduring changes in depressed feelings. This objection will be elaborated in the Discussion.

Attribution Measures

Means and pre-test intercorrelations. The means and standard deviations for subjects' scores in all three conditions on the attribution measures are reported in Tables 4, 5, and 6. Table 4 shows the pre- and post-test mean scores obtained on the items in the Subjective Depression Indicator and Questionnaire and the Locus of Responsibility Scale. Table 5 shows the mean pre- and post-test scores obtained for the Pattern totals on the Attribution Pattern Indicator (A.P.I.). Table 6 presents the scores obtained on the individual items of the A.P.I.

Table 4

Mean pre-test and post-test scores, and standard deviations on the Subjective Depression Inidcator and Questionaire (S.D.I.Q.) and the Locus of Responsibility Scale (L.R.S.)

		Condition						
		Treatment		Expectancy Control		Waiting-List Control		
Scale		Pre-test[b]	Post-test[c]	Pre-test	Post-test	Pre-test	Post-test	Post-treatment[d]
S.D.I.Q. #1	m.	4.3	5.7	4.5	5.5	5.2	5.4	5.0
	s.d.	1.4	1.3	0.9	0.9	0.6	1.2	1.2
#2[a]	m.	3.8	2.1	3.6	2.9	3.3	3.2	2.9
	s.d.	1.2	0.9	1.2	0.6	1.6	0.8	0.7[e]
L.R.S. #1	m.	42.4	42.9	33.9	32.7	29.1	28.3	28.9
	s.d.	31.8	29.9	30.7	21.9	26.9	25.1	32.4
#2	m.	45.2	60.2	34.8	34.0	30.1	21.9	32.4
	s.d.	29.8	21.9	31.2	26.2	32.1	19.8	24.6

Note. [a]Item 2 is not the same item at pre- and post-test.
[b]Pre-test means initial assessment interview for all subjects.
[c]Post-test means final assessment for Treatment and Expectancy subjects, second assessment for Waiting-List subjects; scores upon which analyses are conducted.
[d]Post-treatment means final assessment for Waiting-List subjects.
[e]Post-treatment and Post-test administration of item 2, were from Form II, and can therefore be statistically compared.

Table 5

Means and standard deviations on pre- and post-test pattern totals scores on Attribution Pattern Indicator (A.P.I.) by condition

Pattern		Condition: Treatment		Expectancy Control		Waiting-List Control		
		Pre-test[a]	Post-test[b]	Pre-test	Post-test	Pre-test	Post-test	Post-treatment[c]
I	m.	11.2	8.4	13.6	13.2	14.0	14.1	11.5
	s.d.	3.9	4.2	3.2	3.7	3.7	2.9	4.7
II	m.	11.1	10.6	12.7	11.2	12.8	12.4	12.3
	s.d.	2.8	1.9	4.1	3.1	3.5	2.8	4.2
III	m.	10.1	8.5	11.8	11.8	11.9	11.7	11.2
	s.d.	4.8	4.1	3.6	2.5	3.6	4.2	3.7

Note. [a]Pre-test means initial assessment for all subjects
[b]Post-test means final assessment for Treatment and Expectancy subjects, second assessment for Waiting-List subjects; scores on which analyses were conducted.
[c]Post-treatment means final assessment for Waiting-List subjects.

Table 6

Means and standard deviations of pre- and post-test scores on individual items of Attribution Pattern Indicator by condition

Item		Condition						
		Treatment		Expectancy Control		Waiting-List Control		
		Pre-test[a]	Post-test[b]	Pre-test	Post-test	Pre-test	Post-test	Post-treatment[c]
2	m.	3.7	2.5	2.7	3.2	3.3	3.8	2.9
	s.d.	2.1	1.5	2.0	1.5	1.8	2.0	1.6
3	m.	3.1	3.3	4.1	3.3	4.0	4.1	3.9
	s.d.	1.9	1.9	2.0	1.2	2.1	1.7	1.9
4	m.	3.8	2.5	4.3	4.6	4.1	3.7	4.4
	s.d.	2.1	1.4	2.0	2.4	1.9	2.0	2.0
5	m.	3.8	2.8	4.5	4.2	5.2	4.4	3.5
	s.d.	2.3	1.7	2.1	2.2	1.9	1.9	2.1
7	m.	3.7	3.1	6.2	5.8	5.5	5.5	5.1
	s.d.	1.7	1.5	0.9	1.5	1.9	0.9	1.6
8	m.	4.4	2.8	3.6	3.2	3.4	3.4	3.3
	s.d.	1.6	1.2	2.1	1.6	1.5	1.2	1.9
9	m.	3.6	3.6	5.0	4.7	5.4	4.9	5.1
	s.d.	1.8	1.7	1.7	1.6	1.6	1.7	1.4
10	m.	3.6	2.8	4.1	4.1	4.6	4.3	3.8
	s.d.	2.2	1.6	2.0	1.2	1.4	1.6	1.4
11	m.	2.7	3.2	3.3	3.1	3.4	3.7	3.2
	s.d.	1.4	1.8	1.4	1.9	1.9	1.9	1.8

Note. [a]Pre-test indicates initial assessment for all subjects.
[b]Post-test indicates final assessment for Treatment and Expectancy subjects second assessment for Waiting-List subjects; scores on which analyses were conducted.
[c]Post-treatment indicates final assessment for Waiting-List subjects.

Intercorrelations among all subjects' pre-test scores were calculated. The Pearson product-moment correlation coefficients and the p-values for these coefficients are presented in Table 7. Significant correlations which should be noted are, first, between the two items on the Locus of Responsibility Scale. Both of these items were designed to assess what the subject perceived to be the locus of responsibility for the problems which contributed to her depression. The correlation coefficient was .78 which was significant at the .001 level.

Second, there are significant correlations among the three attribution pattern totals on the A.P.I. The total for Pattern I correlates with the total for Pattern III ($r = .50$, $p < .002$), and the total for Pattern II correlates with the Pattern III total ($r = .55$, $p < .001$). However the totals for Patterns I and II do not correlate significantly ($r = .19$, $p < .16$). It might be suggested that the A.P.I. Pattern totals were not altogether independent, which would account for the noted significant correlations between items from different pattern groupings. Although, it should also be noted that these correlations are not extremely high, implying that the different patterns tap related, but nevertheless distinguishable attribution patterns.

Finally, a number of significant correlations were found between the component items of each pattern total on the A.P.I. These are displayed in Table 7, but are numerous

Table 7

Correlation coefficients from intercorrelation of pre-test scores on the Subjective Depression Indicator and Questionaire (S.D.I.Q.) Locus of Responsibility Scale (L.R.S.) and Attribution Pattern Indicator (A.P.I.) for subjects in all conditions

		S.D.I.Q. Items		L.R.S. Items		Pattern totals			Attribution Pattern Indicator Items								
Scale		1	2	1	2	I	II	III	2	3	4	5	7	8	9	10	11
S.D.I.Q.	1		.38*	-.01	.06	.09	.35*	.28	.18	.16	-.19	.08	-.13	.25	.26	-.12	.16
	2			.10	.01	.14	-.32*	.20	.22	-.07	.24	.07	-.05	-.25	-.30	.12	.15
L.R.S.	1				.78***	.04	.15	.31*	.02	-.20	.10	-.02	.09	.31*	.20	.26	.38*
	2					-.03	.07	.27	-.11	-.17	.14	.03	.04	.33*	-.01	.23	.24
A.P.I.	I						.19	.50**	.68***	.58***	.38	.69***	.49**	-.19	-.11	.28	.48**
	II							.55***	-.01	.62***	.51**	.08	.26	.60***	.67***	.20	.49**
	III								.22	.49*	.78***	.22	.52**	.22	.30	.72***	.68***
Items	2									.39*	.13	.28	-.05	-.16	-.27	.11	.30
	3										.44**	.48**	.18	.01	.07	.20	.42*
	4											.18	.42**	.42**	.11	.30	.37*
	5												.00	-.17	-.24	.12	.23
	7													-.03	.32*	.31*	.38*
	8														.21	-.13	.17
	9															.25	.30
	10																.25
	11																

Note. *$p < .05$
**$p < .01$
***$p < .001$

and therefore will not be discussed in detail.

Analyses of attribution measures' scores. One way analyses of variance were conducted on all attribution measures pre-test scores individually, and with the exception of two items on the A.P.I., there were no significant differences across condition (see Table 8). Item 7 on the A.P.I. ("There are some things which I'd really like to do but won't try because I'm afraid of not succeeding") showed Expectancy subjects agreeing with this statement more than subjects in other conditions ($F_{2,27} = 6.59$, $p < .01$). And item 9 ("If something goes wrong and I'm involved, I usually think it's mostly my fault") showed Treatment subjects disagreeing more than control subjects with this statement at a near-significant level ($F_{2,27} = 3.14$, $p < .06$). In light of these pre-test differences, it appeared, as with the depression rating scales, that the best statistic to employ would be covariance analyses, with post-test scores covaried on pre-test scores.

Table 8 presents a summary of the analyses carried out on the post-test scores of the attribution measures. One-way analyses of variance were conducted individually on the second item of the Subjective Depression Indicator and Questionnaire - Form I (S.D.I.Q. - I) and the second item of S.D.I.Q. - Form II, as these items were not the same and therefore could not be compared across test.

Table 8

F - ratios for analyses of variance and covariance carried out on pre- and post-test scores from the attribution measures, and Waiting-List Control t - values for second to post-treatment week comparisons

	Attribution Measures															
	S.D.I.Q.[a] Items			L.R.S.[b]		A.P.I.[c] Patterns			A.P.I.[c] Items							
	pre-test	post-test														
	1	2	2	1	2	I	II	III	2	3	4	5	7	8	9	10	11
Pre-test one-way analysis of variance df = 2,27	2.00	0.36		0.52	0.66	1.73	0.74	0.63	0.67	0.76	0.15	1.11	6.59	0.91	3.14	0.69	0.55
	p<.16					p<.20							p<.01		p<.06		
Post-test one-way analysis of variance df = 2,27			15.61														
			p<.001														
Post-test analysis of covariance df = 2,26	0.11			0.49	6.16	4.92	0.85	2.01	2.39	0.71	2.54	1.11	5.51	1.69	0.91	2.78	0.55
					p<.03	p<.02		p<.15	p<.11		p<.09		p<.01	p<.20		p<.08	
Post-treatment t - test df = 9	0.67		0.89	0.01	0.92	1.96	0.10	1.00	1.66	0.34	-2.46	1.15	1.24	0.75	0.43	0.75	3.73
						p<.10			p<.20		p<.05						p<.01

Note. [a]S.D.I.Q. indicates Subjective Depression Inidcator and Questionaire
[b]L.R.S. indicates Locus of Responsibility Scale
[c]A.P.I. indicates Attribution Pattern Indicator
p - values > .20 have not been included in this table

(See Appendices K and L for samples of these scales.)

The first item on the S.D.I.Q. which asked subjects how they were feeling compared with a week ago, showed no difference across conditions wjen a covariance analysis was conducted ($F_{2,26} = 0.11$, $p > .50$). On the S.D.I.Q. - I, item 2, an analysis of variance did not show subjects in different conditions to perceive themselves as more or less depressed than their counterparts in other conditions ($F_{2,27} = 0.36$, $p > .50$). Responses to item 2 on the S.D.I.Q. - II however, indicated that subjects in the Treatment condition felt themselves to be "more changed for the better" than did subjects in the othertwo conditions. This difference across conditions was highly significant ($F_{2,27} = 15.61$, $p < .001$).

There was an ordering in the mean scores obtained by subjects in the three conditions on item 1 of the Locus of Responsibility Scale (L.R.S.), with the Treatment subjects having higher scores than subjects in the two control conditions. This question asked subjects who they felt was more responsible for the problems which made them feel depressed, themselves (0 or low score) or others (100 or high score). An analysis of covariance, however, indicated that the three conditions did not differ significantly ($F_{2,26} = 0.485$, $p > .40$). On the second item of the L.R.S. where the

subjects were asked who they felt caused their target problem, this ordering of the means was accentuated and the difference across conditions, as shown by a covariance analysis is significant ($F_{2,26} = 6.163$, $p < .025$).

Briefly summarized, the results of these two measures seem to indicate that Treatment subjects felt that they had changed more for the better, and that they felt less responsible for the problems which caused their depressed feelings, than did subjects in the two control conditions.

Table 8 also presents the values of the related-measures *t* - tests which were carried out to compare second week and post-treatment scores obtained on the S.D.I.Q. and the L.R.S. by subjects in the Waiting-List Control condition. There were no significant differences between second week and post-treatment as assessed by these *t* - tests.

The results of the covariance analyses carried out on the post-test scores from the Attribution Pattern Indicator (A.P.I.) are also shown in Table 8. The results of *t* - tests calculated between the second and post-treatment week for Waiting-List Control subjects are also shown. The results of the A.P.I. analyses in Table 8 are divided into the three totals for the three hypothesized attribution patterns: I, failure to cause positive outcomes; II, causing negative outcomes; and III, failing to prevent negative outcomes.

In Pattern I on the A.P.I., subjects in the Treatment condition have a lower total score than subjects in the two control conditions, suggesting that the feeling of being unable to accomplish positive outcomes was felt less by Treatment subjects. This difference across conditions was significant ($F_{2,26} = 4.924$, $p < .02$). Of the three items which were pooled to create this Pattern I total, items 2, 5, and 7, in the case of one (item 7) a covariance analysis showed the conditions to differ significantly. Specific a priori contrasts carried out on Pattern I adjusted post-test means, using the error term from the covariance analysis showed the Treatment condition subjects to be significantly different from the combined controls ($F_{1,26} = 10.850$, $p < .01$). Treatment subjects' scores were also significantly different from Expectancy Control subjects' scores ($F_{1,26} = 6.739$, $p < .025$) and from the Waiting-List Control subjects' scores ($F_{1,26} = 9.669$, $p < .01$).

For Pattern II, causing negative outcomes, there was no difference across conditions in the total scores obtained. Specific a priori contrasts similar to the ones carried out on Pattern I totals showed no significant differences among conditions.

In the third attribution pattern, failure to prevent negative outcomes, the ordering of the pre- to post-test scores changes is similar to that for Pattern I (see Table 5). This difference is not significant ($F_{2,26} = 2.031$, $p < .15$)

as assessed by a covariance analysis. However, in view of the ordering of the means, specific a priori contrasts were carried out on the Pattern III adjusted post-test means. These analyses showed Treatment condition subjects to be different from the combined controls at a level close to standard levels of significance ($F_{1,26} = 4.202$, $p < .055$). The Expectancy Control condition was not significantly different from the Waiting-List Control condition on this measure ($F_{1,26} = 0.006$, $p > .90$). Finally, the difference between the Treatment condition and the Expectancy Control condition was of borderline significance ($F_{1,26} = 3.286$, $p < .10$) as was the difference between the subjects' scores in the Treatment and Waiting-List Control condition ($F_{1,26} = 3.021$, $p < .10$).

These results of Pattern III analyses seem to suggest that Treatment subjects perceived themselves as having more control over the outcome of their behavior and that feelings of being unable to prevent negative outcomes were felt less at post-test than by subjects in the two control conditions.

Related measures t-tests conducted on second to third assessment A.P.I. scores of Waiting-List Control subjects are also reported in Table 8. The Pattern I total score showed a borderline significant difference from second to post-treatment week ($t_9 = 1.960$, $p < .10$). Although the Pattern III total did not show a significant difference

from second to post-treatment week, two of its component items did: item 11 ($t_9 = 3.73$, $p < .01$) and item 4 ($t_9 = -2.46$, $p < .05$). Neither the Pattern II total nor the component items of this pattern total showed any change from second to post-treatment week.

Post-test intercorrelation of attribution measures' scores. Pearson product-moment correlation coefficients were calculated on the post-test scores of the attribution measures for all three conditions. These are reported in Tables 9 and 10.

The most consistent finding in Table 9 is the difference between the Treatment and the two control conditions in the correlations between the Attribution Pattern Indicator (A.P.I.) and the Locus of Responsibility Scale (L.R.S.). As mentioned earlier, a significant cross-condition difference on item 2 of the L.R.S. indicated that Treatment subjects felt the source of responsibility for their problems to be outside of themselves, more than did subjects in either of the two control conditions. Table 9 shows scores on this item to be significantly correlated with the A.P.I. Pattern I total, as well as with two items, 5 and 7, which contribute to this total. In addition, significant correlations are found with items 4 and 10, both of which contribute to Pattern III. More interesting however, is the significant negative correlations in both the Expectancy and Waiting-List Control conditions

Table 9

Correlation coefficients from intercorrelation of post-test scores on attribution measures, by condition

	S.R.I.Q.-II Items 1			2			L.R.S. Item 1			2			Patterns I			II		
	Tr[a]	Ex[b]	WL[c]	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL
S.R.I.Q.-II Items 1				.96***	.41	.79**	.68**	.44	.07	.36	.46	.05	.23	.38	.27	.33	.31	.36
2							.68*	.31	.04	.39	.46	.10	.36	.08	.70**	.44	.59*	.21
L.R.S. Items 1										.02	.97***	.29	.14	-.50	-.22	.15	-.58	.50
2													.61*	-.46	.26	.46	.39	-.25
A.P.I. Patterns I																.23	-.11	.13
II																		
III																		

	Patterns III			A.P.I. Items 2			3			4			5		
	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL
S.R.I.Q.-II Items 1	.55*	-.26	.31	.38	.62*	-.08	.41	.62*	.08	.38	-.43	.08	.23	.42	.03
2	.61*	-.30	.53	.44	.39	.32	.35	-.20	.53	.35	-.20	.53	.27	-.04	.61*
L.R.S. Items 1	.54*	-.58	.66*	.30	.02	-.09	.23	.38	.56*	.35	-.51	.64*	.04	-.09	-.40
2	.53	-.27	.08	.45	.02	.44	.01	.31	.59*	.66*	-.46	.26	.77*	-.26	.38
A.P.I. Patterns I	.96**	.08	.38	.87***	.71**	.77**	.33	.38	.40	.86***	.46	.42	.93***	.90***	.74**
II	.21	-.13	.80**	.08	.33	.05	.25	.60*	.59*	.08	-.21	.44	.07	-.19	-.31
III				.83***	-.11	.11	.12	.02	.40	.86***	.70**	.80***	.77**	-.19	.01

	A.P.I. Items 7			8			9			10			11		
	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL
S.R.I.Q.-II Items 1	-.02	-.40	.00	.40	.16	.45	.01	-.20	.23	.50*	.27	.39*	.08	-.05	.09
2	.07	-.40	.00	.38	.91***	.38	-.04	-.06	-.24	.63*	-.79**	.81**	.56*	.32	-.18
L.R.S. Items 1	.05	-.83***	.29	.53	.49	.44	-.01	-.09	-.03	.38	-.19	.07	.64*	.59*	.72**
2	.50	-.83***	-.41*	.18	.52	-.43	.52	.01	-.65*	.63*	-.17	-.02	.08	.59*	-.08
A.P.I. Patterns I	.79**	.44	-.17	.00	-.25	-.10	.27	-.23	-.11	.87***	.25	.73**	.28	-.16	-.27
II	.40	-.33	.19	-.08	.73**	.66	.37	.76**	.64*	.37	-.36	.31	.06	.45	.82**
III	.35	.31*	.34	.33	-.40	.62*	.40	.09	.22	.80***	.46	.72**	.79**	.40	.64*

Note. [a]Tr indicates Treatment condition.
[b]Ex indicates Expectancy Control condition.
[c]WL indicates Waiting-List Control condition.
*$p < .05$
**$p < .01$
***$p < .001$

Table 10

Correlation coefficients from intercorrelation of post-test scores on A.P.I. items, by condition

	2			3			4			5			7			8			9			10			11		
Item	Tr[a]	Ex[b]	WL[c]	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL	Tr	Ex	WL
2				.28	.81**	.50	.85***-	.16	.09	.80**	.60	.54*	.46	-.13	-.62*	.12	.21	-.38	.13	-.16	-.14	.82**	-.01	.32	.63*	.11	-.13
3							.02	-.31	.61*	.22	.32	.23	.36	-.35	-.24	-.02	.20	.15	-.58*	.23	-.12	.30	.22	.31	-.02	.46	.61*
4										.89***-	.28	.21	.43	.66*	.37	.00	-.18	.43	.52	-.01	-.11	.81**	.02	.64	.49	-.41	.36
5													.59*	.15	-.24	-.07	-.29	-.28	.39	-.29	-.55*	.85***	.29	.31	.20	-.13	-.49
7																-.09	-.40	.39	.15	.02	.45	.59*	.20	.17	-.09	-.30	.21
8																			-.10	.23	.25	.31	-.81	.45	.49	.33	.51
9																						.38	.02	.22	.15	.19	.41
10																									.49	-.09	.03
11																											

Note. [a]Tr indicates Treatment condition.
[b]Ex indicates Expectancy Control condition.
[c]WL indicates Waiting-List Control condition.
*$p < .05$
**$p < .01$
***$p < .001$

between item 2 on the L.R.S. and item 7 on the A.P.I.

In general the data presented in Table 9 suggest that there is a negative correlation between scores on the L.R.S. and the A.P.I. That is, higher scores on the L.R.S. suggesting increasingly external locus of responsibility are associated with lower scores on the A.P.I. which suggest a shift away from a depressive attribution pattern.

Table 10 presents the intercorrelations among the individual items' scores, and the probability associated with these correlations, on the Attribution Pattern Indicator. It should be noted that the highest number of significant positive correlations are to be found within the Treatment condition's scores. The most interesting findings displayed in the table, however, are the significant correlations which exist among the component items of Pattern I and III, suggesting that these two patterns are neither distinct nor totally independent. The high significant correlations between these two patterns' totals as shown in Table 9, are consistent with this observation. A total of 9 significant correlations out of a possible 15 permutations and combinations of the six items which are the components of Patterns I and III, can be seen in Table 10. The conclusion most clearly indicated is that there are not, in fact, three independent attribution patterns as defined here. Two of these patterns at least, Patterns I and III, are to some extent interrelated.

Analyses of predominant attribution pattern scores. The second general hypothesis which was presented in the Introduction was that individuals with depressed feelings made causal attributions which followed at least one of three patterns. Following from this, it was stated that the modification of depressed feelings would take place through direct manipulation of these attribution patterns.

To determine if the treatment had an effect upon the predominant attribution pattern to which a subject had been assigned, analyses of variance (one-way) were carried out on the predominant pattern change scores. Change scores from pre-test, first assessment, to post-test, final assessment for Treatment and Expectancy Control subjects, second assessment for Waiting-List subjects, were calculated for all subjects on the predominant pattern totals and the means and standard deviations of these change scores are presented in Table 11.

Treatment subjects show more change, from pre-test to post-test, than control subjects, but this difference is not significant in a one-way ANOVA ($F_{2,27} = 1,977$, $p > .10$). However, in view of the trend in the means, a priori contrasts were carried out comparing the Treatment condition with the two control conditions indicates a borderline significant difference ($F_{1,27} = 3.954$, $p < .10$). These results seem to suggest that there was more change in the predominant pattern for subjects in the Treatment condition than for subjects in the Expectancy Control or

Table 11

Mean pre- to post-test change scores of attribution patterns and F - ratios from analyses of variance; by condition

		Condition			
		Treatment	Expectancy Control	Waiting-List Control[a]	One-way analysis of variance df = 2,27
Predominant Pattern	m.	3.9	1.0	1.0	1.978
	s.d.	4.6	3.1	3.4	$p < .20$
Secondary Pattern	m.	1.0	0.6	-0.1	
	s.d.	2.9	4.1	3.4	
Tertiary Pattern	m.	0.0	0.3	-0.4	
	s.d.	3.4	4.2	2.6	
One-way analysis of variance df = 2,27		2.99	0.08	0.55	
		$p < .10$	$p < .90$	$p < .60$	

Note. [a]Indicates change at second assessment of Waiting-List subjects, before they received the treatment.

Waiting-List Control condition.

Finally, change scores for each subject's predominant, secondary, and tertiary patterns were examined; the means and standard deviations are reported in Table 11. Significant differences in the Treatment condition between the change scores for these pattern groupings would suggest first, that the treatment had been effective in modifying the target attribution pattern, and second, that assignment to predominant pattern by the experimenter was reflected by scores on the A.P.I. Within the Treatment condition there is more change in predominant pattern than in the second or tertiary patterns. A one-way ANOVA shows this difference to be of borderline significance ($F_{2,27} = 2.987$, $p < .10$). Specific a priori contrasts carried out between the predominant and the secondary and tertiary patterns combined do, in fact, show a significant difference across pattern change scores ($F_{1,27} = 5.610$, $p < .05$). For subjects in the Treatment condition then, more change was found in the target pattern than in the non-target patterns. This was not the case for subjects in the two control conditions where no difference was found in change scores across patterns.

Thus, it might be concluded that the experimental manipulation employed in this study to shift attribution patterns appears to be effective, though not particularly strong.

Relation Between Depression Rating Scales and Attribution Measures

Pre-test intercorrelations. Pre-test scores from the three depression rating scales and the three attribution measures were intercorrelated to produce Pearson correlation coefficients. The correlation coefficients and the p-values for these coefficients, for all 30 subjects, are reported in Table 12.

Significant correlations which should be noted are between the Beck D.I. and the S.D.I.Q. - I (item 1, $r = .32$, $p < .04$; item 2, $r = .44$, $p < .008$) and the D.A.C.L. and the S.D.I.Q. - I (item 1, $r = .38$, $p < .02$; item 2, $r = .44$, $p < .01$). This would seem to suggest that the S.D.I.Q. - I might be an effective quick indicator of present depressed feelings.

There are significant correlations between two A.P.I. pattern totals and two depression rating scales. The Pattern I total significantly correlated with the D 30 ($r = .46$, $p < .006$) and with the Beck D.I. ($r = .33$, $p < .035$); and the Pattern III total also significantly correlated with the D 30 ($r = .39$, $p < .016$) and the Beck D. I. ($r = .44$, $p < .007$). These significant correlations with the D 30 are probably derived from the significant correlation between this scale and items 5, 10, and 11, component items of Patterns I and III. Similarly, other pattern totals which correlate with depression rating

Table 12

Correlation coefficients from intercorrelation of pre-test scores on depression rating scales and attribution measures

		D 30	Beck D.I.	D.A.C.L.
S.D.I.Q.[a]- I	1.	.05	.32*	.38*
	2.	.28	.44**	.43**
L.R.S.[b]	1.	.13	.16	.09
	2.	-.04	.04	.24
A.P.I.[c] Pattern Totals	I	.46**	.33*	.07
	II	.09	.10	-.19
	III	.39*	.44**	.23
A.P.I. Items	2	.17	.26	.01
	3	.12	.13	.01
	4	.13	.18	.13
	5	.44**	.21	.13
	7	.26	.14	-.01
	8	-.17	-.12	-.16
	9	.17	.15	-.22
	10	.39*	.50**	.38*
	11	.39*	.32*	-.06

Note. [a]S.D.I.Q. indicates Subjective Depression Indicator and Questionaire.
[b]L.R.S. indicates Locus of Responsibility Scale.
[c]A.P.I. indicates Attribution Pattern Indicator.
*$p < .05$
**$p < .01$
***$p < .001$

scales are supported by significant correlations in the component items.

Although the L.R.S. correlated with depression scales scores' change at post-test, there was no significant correlation between it and any of the depression rating scales at the time of pre-test.

Post-test intercorrelations. Pearson product-moment correlation coefficients were calculated between the scores of the depression rating scales and those of the attribution measures at post-test. These coefficients are reported in Table 13, separately for condition.

Subjects in the Treatment condition account for the overwhelming majority of significant correlations between attribution measure and depression rating scales. There are a few significant correlations between attribution measures and depression rating scales scores in the Expectancy and Waiting-List Control groups, but these are mostly with the D.A.C.L. and not with the Beck D.I. or the D 30.

These positive correlations for subjects in the Treatment group in many ways support the general hypotheses of this study. First and foremost, significant positive correlations between attribution measures and depression rating scales strongly suggest that the concept of negative, internal attributions is one which is closely related

Table 13

Correlation coefficients from intercorrelation of post-test scores on depression rating scales and attribution measures, by condition

		D 30			Beck D.I.			D.A.C.L.		
		Tr[a]	Ex[b]	WL[c]	Tr	Ex	WL	Tr	Ex	WL
S.D.I.Q.-II[d]	1	.56*	.49	.41	.63**	.32	.76**	.47	.86***	.61*
	2	.67*	.32	.26	.69**	.04	.68**	.60*	.62*	.66*
L.R.S.[e]	1	.43	.20	.10	.52	.21	.10	.50	.46	-.10
	2	.61*	.22	.07	.61*	.17	.13	.40	.41	-.04
A.P.I. Total	I	.71**	.55*	.25	.62*	.35	.62*	.54*	.34	.32
	II	.66*	.21	-.16	.67*	.07	.29	.38	.16	-.15
	III	.80**	-.26	.01	.65*	-.16	.45	.66*	-.50	.12
A.P.I.[f] Items	2	.76**	.41	-.10	.57*	.12	.23	.75**	.62*	-.24
	3	.26	.36	-.22	.38	.25	.14	.37	.48	-.27
	4	.64*	-.40	.04	.43	-.53	.35	.54*	-.60*	.25
	5	.53	.69**	.01	.40	.47	.14	.33	.43	.33
	7	.56*	-.09	.31	.65*	.05	.10	.33	-.41	.33
	8	.24	.20	-.19	.44	-.03	.17	.07	.35	.17
	9	.33	-.06	.08	.15	-.01	.22	-.04	-.38	-.09
	10	.82**	.03	.20	.78**	.26	.78**	.52	-.06	.56*
	11	.59*	.24	-.21	.45	.55*	-.07	.63*	.22	-.49

Note. [a] Tr indicates Treatment condition.
[b] Ex indicates Expectancy Control condition.
[c] WL indicates Waiting-List Control condition.
[d] S.D.I.Q.-II indicates Subjective Depression Indicator and Questionaire - Form II.
[e] L.R.S. indicates Locus of Responsibility Scale.
[f] A.P.I. indicates Attribution Pattern Indicator.
*$p < .05$
**$p < .01$
***$p < .001$

to an already recognized part of depression -- that which is measured by these three depression rating scales. Second, alteration of these internal attributions produced changes which are significantly related to positive change on depression rating scales. Third, a large number of negative correlations between the attribution measures and the depression rating scales are found, at post-test in the Expectancy and Waiting-List Control conditions, further supporting the conclusion that an attributional shift is directly related to the alleviation of depressed feelings.

Finally, a most encouraging result to be found in Table 13 is a high correlation ($r = .61$, $p < .031$) in the Treatment condition between both the D 30 and the Beck D.I. and item 2 of the Locus of Responsibility Scale. Item 2, it will be recalled, was the item on the L.R.S. which showed a significant difference between the Treatment and the two control conditions at post-test. This item assessed perceived responsibility for the problems which caused the depression (internal or external locus) and the results indicated that Treatment subjects shifted in the predicted direction, from internal to external.

Pre - post change scores intercorelations. Correlation coefficients were calculated for the pre- to post-test change scores for the three depression rating scales and the attribution measures. These are presented

in Table 14, by condition, as well as for all conditions combined. This intercorrelation was calculated to determine whether change on the attribution measures was related to change on the depression rating scales. Significant positive correlations would suggest that the attribution measures were tapping the same constructs as the depression rating scales, and would support the argument that attribution patterns, as described in the present study, are operative in depression.

The significant intercorrelations to note in Table 14 are first, those between the Beck D.I. and the A.P.I. patterns' totals for all subjects; second, those between the combination of A.P.I. Patterns I and III and Patterns I, II and III and the Beck D.I. for subjects in the Treatment and Waiting-List Control conditions; and third, between the S.D.I.Q. and all three depression rating scales for all subjects. There were no pre- to post-test change scores calculated for S.D.I.Q. item 2, as this item was not the same on pre- and post-test. Patterns I and III totals were combined because it was these patterns which showed near-significant between-condition differences by covariance analysis. In general, the highest correlations in Table 14 between change scores on the A.P.I. and change scores on the three depression rating scales are to be found for subjects in the Treatment condition.

The conclusion to be drawn here is that change or shift in attributions is related to change in depression levels and that this relationship is most evident for subjects in the

Table 14

Correlation coefficients from intercorrelation of pre- to post-test change scores on depression rating scales and attribution measures, by condition

		D 30				Beck D.I.				D.A.C.L.			
		All[a]	Tr[b]	Ex[c]	WL[d]	All	Tr	Ex	WL	All	Tr	Ex	WL
S.D.I.Q.[e]	1	.45**	.43	.64*	.26	.65***	.70**	.66*	.67*	.73***	.81**	.23	.15
L.R.S.[f]	1	-.02	.08	.34	-.71**	-.01	-.27	.13	.07	.14	.06	-.51	.63*
	2	-.03	.12	.10	-.35	-.04	.37	.02	-.01	-.01	.50	-.27	.37
A.P.I.[g]	I	.30	.49	.21	.27	.44**	.22	.23	.57	-.03	-.53	-.42	-.42
Pattern	II	.18	.08	.15	.32	.47**	.21	.66*	.58*	.22	.19	.42	-.04
Totals	III	.18	.57*	.12	-.11	.40	.64*	.19	.60*	.27	.49	-.32	.10
A.P.I.	I, III		.71**	.09	.09		.66*	.22	.67*		.21	-.39	-.18
Combined Totals	I, II, III		.63*	.13	.22		.64*	.40	.85***		.24	-.20	-.17

Note. [a] All indicates all conditions combined.
[b] Tr indicates Treatment condition.
[c] Ex indicates Expectancy Control condition.
[d] WL indicates Waiting-List Control condition.
[e] S.D.I.Q. indicates Subjective Depression Indicator and Questionaire.
[f] L.R.S. indicates Locus of Responsibility Scale.
[g] A.P.I. indiates Attribution Pattern Indicator.
*$p < .05$
**$p < .01$
***$p < .001$.

Treatment condition. Thus, the attempt to shift attributions and thereby modify depression was moderately successful.

Subject Data and Tape Analysis

There was no difference across conditions in the age of the subjects or the number of times they rehearsed the statement which they were given. Full details of ages, distribution of age across condition, statement rehearsal, and other demographic information on the subjects may be found in Appendix D.

Assignment of subjects to predominant attribution pattern did not in all cases agree with the predominant pattern of the subjects as indicated by the highest pattern total on the A.P.I. In the Treatment condition, eight subjects' scores on the A.P.I. indicated a predominant pattern which was the same as that to which they had been assigned by the experimenter, and on which the experimental manipulation was based. There were seven subjects in the Expectancy Control condition whose highest A.P.I. pattern total agreed with their assignment of predominant pattern. In the Waiting-List Control condition, five subjects' predominant pattern as indicated by the A.P.I. was the same as the predominant pattern to which they had been assigned by the experimenter and on which the manipulation was based during the treatment period.

Although a brief summary of the results of the tape analysis will be given here, full details of this may be

found in Appendix Q.

Tape analysis. The audio tape-recordings of the third session of subjects in the Treatment and Expectancy Control condition were analysed by an independent rater, ignorant of the condition in which the subject had been placed. Subjects in the Waiting-List Control condition were not included in this analysis, as the procedure for these subjects was radically different from that in the other two. As a result, the rater would have known to which condition these subjects belonged, and this knowledge might have biased her ratings.

The experimenter asked the rater to categorize statements as being one of seven possible types. The tapes were rated by the number of statements which fell within each of these categories. One of the Treatment subjects refused permission for taping and so the calculations concerning these ratings are based on only 19 tapes. In the case of two of the seven types, significant differences between the two conditions were found. Treatment subjects were found to have made more active control statements than subjects in the Expectancy Control condition ($\underline{t}_{17}$ = 1.658, $\underline{p} < .057$, one-tailed), although this difference was of borderline significance only. Also, subjects in the Treatment condition made significantly more statements with a positive future orientation than did subjects in the Expectancy condition ($\underline{t}_{17}$ = 1.769, $\underline{p} < .047$, one-tailed).

The difference between numbers of active control statements would seem to indicate that subjects in the Treatment condition felt that they had more control over their own behavior and were more able to accomplish things, than did the Expectancy subjects. Similarly, the difference in numbers of positive future orientation statements would seem to suggest that Treatment subjects were looking on the brighter side of things and were planning to carry out more constructive projects in the future, than were Expectancy Control subjects.

In sum then, these results provide further support for the conclusion that, not only is an attributional approach to depression reasonable in theory but, as demonstrated in this project, it has potential to become an effective treatment.

Discussion

The major aims of the present investigation were threefold: first, to determine if individuals with depressed feelings made more internal than external causal attributions concerning their interactions with the environment; second, to determine if these causal attributions followed an hypothesized set of patterns; and third, to determine whether rehearsal of an alternate attributional statement would have the effect of reducing the depressed feelings which these subjects were having in comparison to two matched control groups.

As the major thrust of the project centered around the treatment approach, this aspect of the results will be discussed first.

The treatment. To review briefly, the treatment consisted of rehearsal over a period of one week of an attributional statement typed on an index card. Subjects in the Expectancy Control condition rehearsed a non-attributional statement for the same length of time, under the same conditions. Subjects in the Waiting-List Control condition waited for one week, then rehearsed an attributional statement for one week.

Subjects in all conditions showed a significant change in scores from pre-test to post-test on all three

depression rating scales, as measured by the two-way analyses of variance. This indicates that all subjects perceived themselves to be less depressed at post-test. However, the results of the covariance analyses carried out to assess relative pre - post change across conditions, indicated a difference in the extent to which subjects in the three conditions changed from pre-test to post-test.

Covariance analysis of the Beck D.I. scores indicated a relative difference in the change from pre-test to post-test between conditions. Specific a priori contrasts carried out on the adjusted post-test means show this difference between the Treatment and the two control conditions to be significant. Covariance analysis of the D 30 did not show significant differences among conditions in the amount of change demonstrated from pre-test to post-test.

There was no difference among conditions as assessed by an analysis of covariance carried out on the D.A.C.L. - Form A. Possible reasons for this may lie in the nature of the measure itself. As a measure of "transient mood state" (Lubin, 1965) the D.A.C.L. may have assessed the effects of expectancy as a result of participation in a therapy-like project, and it is suggested it might have reflected non-depressed feelings which occurred only on

that particular day.

The results obtained from the Waiting-List Control subjects in the post-treatment session require considerable comment. It might be expected that these results would provide a replication of the Treatment effect. After waiting for one week, Waiting-List Control subjects were again assessed, then received the same treatment as did subjects in the Treatment condition. It was predicted that subjects in the Waiting-List Control would show significant decreases in perceived level of depression, as a result of having the treatment.

One depression scale, the Beck D.I., showed a significant decrease in scores from second to post-treatment assessment. Scores on the D 30 also showed a decrease in the means from second to post-treatment week, but the difference was only of borderline significance. The D.A.C.L. failed to show any significant difference, though the means did change in the predicted direction.

A similar impression emerges from the analysis of the scores from the attribution measures. A difference of borderline significance between second and post-treatment assessment was found for Pattern I of the Attribution Pattern Indicator. Also two items on Pattern III, items 4 and 11, showed significant differences between second and post-treatment weeks, however the change in item 4 is not in the predicted direction. All other scores on attribution measures did not show any statistically significant

differences from second to post-treatment assessments.

The significant result on the Beck D.I. suggests that the treatment was somewhat effective for subjects in the Waiting-List Control condition. Support for this suggestion comes from the differences on Pattern I on the A.P.I. and item 11 of Pattern III. As the experimental design does not provide the appropriate control groups which would permit a comparison to determine if in fact a change relative to controls had taken place, there is no manner in which to evaluate properly these observed results.

The lack of significant second session to post-treatment assessment changes on the other attribution measures, and the significant difference in the opposite from predicted direction, on item 4 of the A.P.I., could have been related to the attribution pattern to which the subject had been assigned. Only five of the ten Waiting-List Control subjects' highest A.P.I. pattern total score coincided with the attribution pattern to which they were assigned by the experimenter for the purposes of experimental manipulation. This low level of correspondence might account for the lack of greater change on A.P.I. items, as well as other attribution measures. Additionally, the relatively small degree of change on the attribution measures could also partially account for why change on depression scales was not marked.

A final factor to be considered when reviewing the results of the second week to post-treatment period, is the delay of one week which these Waiting-List subjects

experienced before having the treatment. The delay might have resulted in a different expectancy, from that of the other two conditions, as to the therapeutic benefit to be received. This could have resulted in a slower response to treatment than that evidenced by subjects in the Treatment condition. Again, comparison with the appropriate control groups would allow resolution of this issue. The Waiting-List Control condition was included in the design of the experiment primarily as a control for the effects of spontaneous remission or increased depression. The failure of these subjects to show overall statistically significant differences indicating improvement in the post-treatment period does not provide a firm basis on which to conclude that the treatment was not effective.

Before summarizing the results of, and drawing conclusions about, the depression rating scales' score changes, reference should be made to the experimental prediction made in the Introduction. It was predicted that the Treatment subjects, as a result of having undergone the re-attribution treatment, would show greater pre- to post-test change on the depression rating scales than would control subjects. Covariance analyses of the results of the Beck D.I. confirmed this prediction and the post-test a priori contrasts showed the Treatment condition subjects to have changed significantly more from pre-test to post-test than did subjects in the two control conditions. Chance pre-test discrepancies on the D 30 do not allow any

conclusion with respect to this prediction to be drawn on the basis of D 30 score analyses.

The conclusion from these results then, suggested that the experimental manipulation, an attributional approach to the treatment of mild depression, was successful. The fact that the Treatment condition differed significantly from the two control conditions in the amount of change on a general depression measure would indicate that the successful alleviation of depressed feelings in Treatment subjects cannot be ascribed wholly to the effects of expectancy, self-monitoring, thought stopping, and spontaneous remission. These observed differences across conditions are related to cognitive rehearsal of an attributional statement and manipulation of attribution patterns. The correlation between change in depression rating scales and change in the various attribution measures provides support for this observation. The fact that this effect was not shown as strongly by Waiting-List Control subjects at post-treatment assessment could be related to the lack of attributional change in these subjects.

Internal attributions. One of the general hypotheses stated that depressed subjects made more internal than external attributions for observed negative outcomes. From this, it was predicted that the treatment would affect this locus of responsibility so that at post-test, Treatment subjects would show more change on the Locus of

Responsibility Scale than subjects in the two control conditions.

Analyses of pre-test scores did not show significant differences across conditions on the Locus of Responsibility Scale (L.R.S.). As there was no non-depressed control group with which to make comparisons, it is not possible to say conclusively that depressed persons made more internal attributions than non-depressed persons. This is a point for further investigation.

The scores obtained at post-test showed a highly significant difference across conditions on item 2 of the L.R.S. "When I think about the problem which I worry about the most, I think that this problem is caused mainly by: myself (00) or others (100)." Subjects in the Treatment conditions indicated at post-test that they perceived the locus of responsibility for their problems to be outside of themselves to a significantly greater degree than did subjects in either of the two control conditions. One might conclude from this result that the construct measured by this question was affected by the treatment. Change which occurred as a result of treatment was not merely the product of expectancy or spontaneous remission.

Scores on item 1 of the L.R.S. neither showed differences among the conditions at post-test, nor any change from scores obtained at pre-test. The fact that item 2 was successful in distinguishing among conditions on this measure of locus of responsibility whereas item 1 was not,

may be due to the experimental nature of the measuring instrument. Further experimentation with additional, though similar, items on a mildly depressed population is needed.

The significant correlations between items on the L.R.S. and the depression rating scales at post-test, only for subjects in the Treatment condition serve to emphasize further the relationship between internal locus of responsibility and mild depression.

Attribution patterns. The second general hypothesis outlined in the Introduction concerned the nature of attributions made by depressed subjects and the patterns that these attributions took. It was hypothesized that three patterns characterized the attributions of people with depressed feelings: I, failing to cause positive outcomes; II, causing negative outcomes; and III, failing to prevent negative outcomes. It was further hypothesized that a treatment based upon the alteration of the subjects' predominant attribution pattern, through rehearsal of alternate attribution statements, would reduce depressed feelings. To measure these attribution patterns, and changes therein, the Attribution Pattern Indicator was constructed, which consisted of nine relevant items and three fillers. Scores on groups of three relevant items were summed to make three different pattern total scores. It was predicted that subjects in the Treatment condition

would show greater pre- to post-test changes on this measure than subjects in the two control conditions.

The potency of the actual experimental manipulation was demonstrated when within-group comparisons were carried out in the Treatment condition. Here, change scores for the subjects' predominant pattern, when compared with change scores for the subjects' secondary and tertiary patterns combined, showed that change in the target pattern was significantly different from change in the non-target patterns. This suggests that rehearsal of alternate attributional statements can be a fairly powerful modification strategy in the treatment of depression.

Analyses of attribution pattern totals showed subjects in the Treatment condition to have changed more as assessed by the A.P.I. from pre-test to post-test than had subjects in the two control conditions. Pattern I, failure to cause positive outcomes, showed Treatment subjects to be significantly different from the combined controls at post-test. Treatment subjects' scores were also significantly different at post-test from Expectancy Control subjects' scores and from Waiting-List Control subjects' scores, when specific a priori contrasts were carried out on Pattern I adjusted post-test means. Treatment subjects appeared to be indicating a greater feeling of confidence in their own ability to accomplish things that they had set out to do, than did controls subjects.

It should be noted that item 7 from Pattern I showed significant pre-test differences across conditions. One possible explanation for this pre-test discrepancy is the factor of chance. Random assignment of subjects to experimental condition, while a precaution against initial between-group differences, does not guarantee that differences will not be manifested. With close to 20 measures at pre-test the probability that one will show initial between-group differences is very high.

Analyses of Pattern III totals scores approached significance in showing differences among conditions. Pattern III, failure to prevent negative outcomes, showed Treatment subjects to be different from the combined controls at close to standard levels of significance, when specific a priori contrasts were carried out on the adjusted post-test means. These results suggest that Treatment subjects, as a result of having undergone the treatment, perceived themselves as having more control over the outcome of their behavior. They also seemed to have fewer feelings of being unable to prevent bad things from happening than did control subjects.

Scores on Pattern II, causing negative outcomes, did not show differences across conditions at post-test.

It might be suggested that items from Patterns I and III, which showed differences across conditions at post-test might be useful diagnostic indicators of depression. Support for this suggestion comes from the relationship

between the A.P.I. items and the three depression rating scales. In general, change on the A.P.I. is correlated with change on the three depression scales. Overall the three pattern totals on the A.P.I. correlated significantly with the Beck D.I. Similarly, the overall correlation matrix shows a significant relationship between Pattern I and the D 30. Lower scores on the A.P.I. at post-test are associated with lower post-test scores on the three depression rating scales for subjects in the Treatment condition only. Again at post-test, A.P.I. scores are significantly correlated with depression scale scores for subjects in the Waiting-List Control condition although there was no change on these measures.

The presence of significant correlations between items on the A.P.I. and the depression scale scores in the Treatment condition only, is noteworthy. It will be recalled that in this condition subjects were given an alternate attributional statement to rehearse, in order to effect a change in their predominant attribution pattern. This change was in fact, obtained, and the level of subjects' depressed feelings was reduced. The significant correlations therefore, provide further evidence that a treatment for the modification of depression based on manipulation of attribution patterns is an effective approach.

It was noted in the Results, that Patterns I and III were significantly intercorrelated and the suggestion was

made at that point that these two attribution patterns -- failure to cause positive outcomes and failure to prevent negative outcomes -- were neither distinct nor independent. Inspection of the component items of these two patterns reveals a common theme which may be contrasted with the theme of the items making up Pattern II. The Pattern I attributions and the Pattern III attributions both might be said to be characterized by a complex relationship of the subject to the events in her world: that is, the subject does not attribute the events in her world to the effect of her own actions directly; rather, she sees the events as being caused by the ineffectiveness of her own actions to produce different outcomes. In other words, the items in Patterns I and III would appear to be related to the concept of causal efficacy as well as causal locus. On the other hand, the Pattern II attributions might be said to be characterized by a simple, direct, causal relationship to outcomes: that is, it is related to the concept of causal locus only.

The relationship between Patterns I and III and the levels of subjects' depressed feelings might, therefore, indicate that a critical factor in depression is a person's attributions concerning her effectiveness in relation to the occurrences or non-occurrences of outcomes, rather than her attributions concerning herself as the cause, simply, of the event.

Parenthetically, a distinction should be made here between what is termed causal locus and that which has been referred to in the present paper as locus of responsibility. The significant intercorrelations between change in depression rating scale scores and scores on the Locus of Responsibility Scale attest to the importance of this construct in contributing to the individual's self appraisal. The distinction to be made, then, is between causal locus, that is the source of the cause or effect, and the locus of responsibility, the perceived responsibility for the effect, whether the actual causal locus be within or outside of the depressed person.

To end the discussion of the results derived from the Attribution Pattern Indicator, mention should be made of the lack of correlation between some of the items. The items which sum to form Pattern II, causing negative outcomes, (items 3,8,9) are neither significantly correlated with one another nor are they significantly correlated with the component items of other patterns at post-test, for subjects in the Treatment condition. Lack of correlation with other items from other patterns would suggest that more than one attribution pattern did exist, with the items in Pattern II measuring something different from that which was measured by items from Patterns I and III. Even if a different pattern which, as is suggested above, measured causal locus, was to be distinguished from the combination of Patterns I and III, its lack of correlation at

post-test with any depression rating scales would seem to suggest a questionable association with the concept of depression as assessed by these scales. Failure to show significant differences across conditions at post-test would also seem to support this suggestion.

It must be concluded then, that the lack of significant intercorrelation of the component items of Pattern II suggest that they are not all measuring the same thing. Although it appears there is little relationship between what is measured by these items and that which is measured by the three depression rating scales, it should also be noted that since the items were constructed on face value, they may not be adequate constructs of Pattern II attributions.

Other measures. The third measure which was designed for use in this project was the Subjective Depression Indicator and Questionnaire (S.D.I.Q.).

Item 1 asked subjects to indicate how depressed they were feeling compared with the previous week. The results indicated that the subjects in both the Treatment and Expectancy Control condition showed the same amount of change from pre- to post-test on this item.

A possible reason for this is that this change may have reflected the effects of expectancy. Its high face validity would lead one to suspect that an item of this type would be somewhat susceptible to expectancy or demand

effects, as well as to "faking good." Faking might have resulted from a desire on the part of the subjects to please the experimenter. This sort of faking, called the "hello-goodbye" effect (Cronbach, 1970), might even have involved some self-deception, to prove to the subject herself that the sacrifice of time and privacy was not wasteful. It also may be related to the $10.00 deposit and the payment of $10.00 to the subjects. Subjects may have perceived that the purpose of the project was to "make (them) better," and they might have felt that they would be paid for something which they hadn't done if they weren't better at the end. Thus, they may have "faked good" in order to justify their payment, as well as to please the experimenter.

Although item 1 appears to be a measure of expectancy, it does not affect the overall interpretation of the results. Whatever expectancy effects were reflected in item 1, were not powerful enough to produce greater changes in the depression rating scale scores for subjects in the Expectancy Control condition, than those to be found in the Treatment condition. The conclusion remains then, that in the present study, an overall treatment effect is distinguishable from the effects of expectancy.

No differences were found among conditions in their responses at pre-test to item 2 on the S.D.I.Q. - I. The second item on S.D.I.Q. - II asked subjects whether they felt they had changed for the better or the worse over the

period of a week. Treatment subjects were found to differ significantly from the two control conditions, indicating that they felt themselves to be more changed for the better than did subjects in the other two conditions.

The other questions on the S.D.I.Q. - II asked subjects to indicate what they felt had changed about them, what they felt to be the causes of that change, if any, and to give a summary of what they had learned from the experiment. Careful examination of the responses to these items did not reveal any trends consistent with the experimental hypotheses, which might be converted into measures and assessed by an independent rater. However, for the interested reader, the response sheet for each subject has been photocopied, and these may be found in Appendix R.

Self-statements. The results of the analysis by an independent rater of the tape-recorded sessions, indicated significant differences between the self-statements of Treatment and Expectancy Control condition subjects. Treatment subjects made more statements of active control and statements of positive future orientation, than did subjects in the Expectancy Control condition. This would seem to indicate that the treatment had the effect of enhancing the control and future orientation of these subjects -- qualities which might be seen as related to such constructs as self-esteem, optimism, and motivation -- certainly a positive indication that the modification of

depressed feelings had taken place.

Conclusion

The conclusion to be drawn from the results presented above, it is suggested, is that a treatment of depressed feelings based upon the cognitive modification of subjects' attribution patterns, is an effective one. It deserves more attention with a view to developing the technique into a valuable treatment for depression.

This conclusion is supported by the reasonably consistent finding that the subjects in the Treatment condition, when compared to those in the two control conditions, showed a significant change in the level of their depressed feelings. While it is maintained that the results uniformly support this conclusion, it might be argued that they lack a decisive strength. But attention must be drawn to the small number of subjects involved in the project. Furthermore, it was the case that the predominant attribution pattern to which each subject was assigned by the experimenter, after a brief half-hour interview, did not in all cases prove to correspond with her highest score on the A.P.I. Moreover, the alternate attributional statements provided to the subjects were constructed without the guidance of previous research or experience. Finally, it may be suggested that the simple rehearsal of a single alternate attributional statement over a short period like one week, is a somewhat modest manipulation of subjects' attribution patterns. Thus,

immediately, two areas are indicated for further investigation: development of the attribution measures employed herein, with a correspondingly more thorough exploration of each subject's attribution patterns; and the development of more powerful and sustained manipulations of attribution patterns.

The original research hypothesis concerning internal versus external attributions has received support from two different areas. Manipulation of the locus of responsibility for their problems from internal to external attributions, of subjects in the Treatment condition, resulted in significantly reduced depression rating scale scores compared with subjects in other conditions. The success of this manipulation was reflected in the significantly higher scores on item 2 of the L.R.S. which suggested that Treatment subjects felt that the locus of responsibility was outside of themselves, or external. Also, the analysis of the self-statements recorded on tape showed the Treatment subjects to have made more active control statements as well as more statements indicating a positive future orientation, than did subjects in the Expectancy Control condition.

Anecdotal evidence for the significance of external attributions as a therapeutic agent in depression comes from one volunteer who was excluded from participation because she did not reach the cut-off levels on the

depression rating scales. This woman had been severely depressed to the point of hospitalization for periods which had stretched over most of her adult life. Four years ago she joined a strict religious organization, the Rosicrucians, and since that time has had no recurrences of her depression. An interpretation of religious belief in terms of attribution theory, might suggest that a strong belief in a deity is a powerful external attribution.

A final point should be made in connection with this internal/external distinction. In the Introduction it was noted that deCharms (1972) had linked internal attribution of causation to increased motivation in his study of personal causation in the classroom. Internal attribution of causation, or Origin behavior, led both to enhanced motivation as well as to better academic performance. The findings reported in the present pilot study showed the opposite of this, with respect to depressed people. Internal attribution of causation in depressives seemed to lead to increasingly depressed feelings. As it seems that people prefer to have greater personal control, i.e., to make internal attributions, for positive outcomes or events which reflect positively on themselves, it may be that internal attribution of causation for positive outcomes or events does lead to increased motivation. But, in the case of negative outcomes or events, it is suggested that an internal attribution is damaging, and this is

reflected in depression. Recent research has supported this suggestion (Calhoun, Cheney, & Dawes, 1974; Calhoun, Johnson, & Boardman, 1975; Klein, Fencil-Morse, & Seligman, 1976).

Further support comes from the literature. Several studies (Buchwald, 1977; DeMonbreun & Craighead, 1978; Nelson & Craighead, 1977; Wener & Rehm, 1975) have supported Beck's (1967, 1976) contention that depressed individuals not only selectively perceive incoming information, but that their selection is on the basis of whether the information has a positive or negative valence. All of these studies conclude that depressed individuals selectively attend to negative information.

Taking this into account then, an internal attribution for a depressed person who selectively perceives negative outcomes or events, serves to maintain and possibly even increase feelings of depression. Thus, it is not only the direction or source of causal influence which is important in depression, but also the affect, whether positive or negative, which is associated with the event.

Finally, the concept of attribution patterns based on Bowerman's theory concerning estimated personal competence received support from the data. Assignment to predominant pattern and manipulation of this predominant pattern for Treatment subjects resulted in clear-cut within-subject differences between scores for the predominant pattern versus the secondary and tertiary patterns at post-test.

These results support the suggestion that patterns of attributions are operative in depression and can provide a useful avenue for modification. Further support for this suggestion comes from the cross-condition analyses which showed that manipulation of a predominant attribution pattern produced alleviation of depressed feelings over and above that brought about by expectancy and other peripheral effects.

The question of how many attribution patterns exist and are operative in depression is relevant at this point. The results of the present study seem to suggest that Patterns I and III have essentially the same content and that Pattern II items are not related to depression as currently defined. However, the overlap between Patterns I and III should not be taken as conclusive evidence that there is only one distinguishable attribution pattern existing and operative in depression. There may be more, which were not revealed by the methods used in the present study. This is an area for further investigation. One conclusion that is suggested by the present evidence however, is that a "negative estimate of personal effectiveness" does form part of the "characteristically negative manner" in which depressed subjects relate the events in their world to themselves. This "characteristically negative manner" may be analysed in terms of Bowerman's theory. Depressed subjects do not see their own actions as being a direct cause of events: they tend to see their

actions in relation to events as failing to cause the "occurrence" of (positive) events or "non-occurrence" of (negative) events. It is this characteristic relationship which is being reflected in Patterns I and III.

A concomitant of this "characteristically negative manner" with its component "negative estimate of personal effectiveness" might be a lowered estimate of personal competence, which has itself been argued to be related to depression. Recent support for this argument has come from two sources. Golin, Terrell, and Johnson (1977) found that mildly depressed college students' expectancy for success was lower when a chance-determined task was given under high-illusion-of-control conditions, than under low-illusion-of-control conditions. They concluded from their results that depressed subjects were characterized by a sense of personal incompetence. Parallels can be drawn between this finding and Bowerman's notion of estimated personal competence, providing support for the suggestion that lowered estimates of personal competence are related to depression.

Comparisons can also be made between Bandura's (1977) self-efficacy theory and the notions of estimated personal competence as laid out by Bowerman. Self-efficacy is also a cognitive concept, which serves as a base for a conceptual system by which behavioral change is evaluated and produced. Bandura states that expectations of an individual's personal mastery (or in Bowerman's terms, personal

competence) will affect the initiation as well as persistence of coping behavior. Thus perceived self-efficacy will have an effect on the choice of behaviors and activities as well as the coping behaviors to be engaged in once these activities are initiated. While a complete analysis of self-efficacy theory is beyond the scope of this thesis, what is relevant to the present discussion is Bandura's contention that expectations of self-efficacy have a significant effect upon the choice, initiation, and persistence of behavior. Like estimated personal competence, self-efficacy, as a cognitive concept, plays a directive role in behavior.

To carry Bandura's argument one step further, it might be suggested that, as the efficacy expectations are lowered in the face of failure at an attempted task or series of tasks, then frequency of choice, initiation, and persistence of behavior are reduced. The resultant state would fit the concept of depression. Though Bandura does not specifically refer to a relationship between self-efficacy and depression, he does outline in some detail the relationship between self-efficacy and emotional arousal, thus, by implication he does not rule out the clinical applications of this new concept.

The relationship, then, between estimated personal competence and depression would seem to be a plausible one. It was stated at the outset that Bowerman's theory concerning estimated personal competence might provide a

useful model and offer a structuring principle for the modification of depressed feelings using an attribution approach. For this purpose it served well. Whether the concept of estimated personal competence can be broadened to provide, like Seligman's (1974, 1975) learned helplessness, a model to explain the etiology of, as well as provide a complete treatment approach for, depression, is a question which cannot be answered on the basis of the present data. Certainly, this is an area for more research.

Before concluding this discussion, one further point should be mentioned. The present study provides an additional instance of the successful use of a re-attribution manipulation without the use of deception, and further emphasizes the use of veridical as opposed to deceptive information, when employing an attribution strategy. As discussed in the Introduction, Johnson, Ross, and Mastria (1977) have suggested that in therapeutic, as opposed to experimental-outcome studies, the absence of deception may facilitate the acceptance by the client of the provided alternate attribution and the success of the manipulation.

The present study, as a contribution to the growing number of cognitively-mediated approaches to the treatment of behavior disorders is one of the first steps toward making cognitive therapies relating to depression a little more systematic. It was stated at the outset that an

attributional emphasis appeared to have potential for increasing the current effectiveness of the "cognitive restructuring" approach to behavior disorders. The results presented here are generally encouraging and suggest that an attributional approach has much potential for further development. Emphasis in this development should be placed on expansion of the attribution measures presented and tested herein. Their correlation with depression rating scales suggests that they could prove to be a useful psychometric aid in the diagnosis of depression.

An attributional approach to depression is not a simple extension of a known research paradigm in this area, but is one which opens a new avenue for cognitively-based research in depression. As shown in the present study, it suggests a conceptual model which can be easily, and effectively, adapted to the clinical setting.

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Footnotes

1. For example, the first subject who was in say, the 17-20 age group was placed in the Treatment condition. The second subject, say, in the 21-24 age group was placed in the Expectancy Control condition. The third subject, say, in the 25-29 age group was placed in the Waiting-List Control condition. If the fourth subject was in the 17-20 age group then instead of being placed in the Treatment group, which was the next group in sequence, she was placed in the Expectancy Control condition. This arrangement occurred because there was no subject in the Expectancy Control condition who was in this age range, and there was a subject in the Treatment condition in this age range. If the fifth subject was in the 25-29 age range, then instead of being placed in the Waiting-List Control condition, where there already was a subject in this age group, she was placed in the Treatment condition -- the next condition in sequence after the Waiting-List Control. This procedure would continue until all 30 subjects had been assigned to conditions balanced across age groups.

2. Analyses of covariance were also carried out on these same scales using pre- to post-test change scores as the criterion and pre-test scores as the covariate. The results were not different from those obtained

using post-test scores as the criterion, and thus conclusions drawn on change score analyses of covariance would not be different from those presented here. As a result of this similarity, all analyses of covariance reported in this study have been conducted using the post-test scores as the criterion.

Appendix A: Advertisement placed in newspapers and on bulletin boards

Do you often feel sad and unhappy and find these feelings bothersome? If you do, and are willing to participate in a project aimed at finding out how to help women aged 17 - 55 years learn to overcome depressed feelings, phone Judy Sutcliffe, 753-1200, Ext. 2818, Monday to Friday, 10:00 a.m. to 6:00 p.m. This project involves 3, half-hour private interviews and is being carried out in the Department of Psychology, Memorial University.

Appendix B: Information given over the phone to subjects concerning the nature of the project

"Thanks for calling. If you've got a minute, let me explain to you what I'm doing. Essentially I'm talking to people who have depressed feelings, and I'm trying to find out how they think about things. You see, I believe that people feel depressed because of the way that they think about their problems. And I also believe that if you can teach people to think about their problems differently, then they might learn to overcome their depressed feelings. Does that make sense?

As I said in the newspaper ad, the project involves coming up to the university three times over the course of two weeks for an interview with me. In the first interview, I'll be asking you to fill in a few simple forms, which ask you questions about the way you've been feeling in the past little while. Then I'm going to ask you a few questions which are similar to the ones on the forms, but which take a bit more time and care to answer. At anytime, if you feel that you don't want to answer a question, then that's OK, just say so.

In the second interview, I'm going to be providing you with a way of approaching these feelings which we talked about in the first interview. What that involves is some simple instructions for ways of thinking about your feelings. This will take the form of a small

reminder-type card, which I'll give to you. When you come for the second interview I'll give you a more complete explanation so you know exactly what to do at the time.

The third session, which takes place a week after the second, is much like the first -- I'm going to talk to you about the way things went over the week, and I'll ask you to fill out some more forms.

Essentially, that's all that's involved. Because you're going to be helping me out by participating in this project, I'll be able to give you a hand by giving you $10.00. Now, I realize that $10.00 isn't a lot these days, but it's something that I can give you to show you how much I appreciate your giving me a hand in this project. So, do you think that you'll be able to come? ... Good.

Before we arrange a time for the first interview, I wonder if you could tell me a couple of things first. Can you tell me please how old you are? What grade did you complete in school? Now, can you tell me if you have ever been to see a psychiatrist? (IF NO -- PROCEED WITH TEXT. IF YES -- SEE FOOTNOTE.) Can you give me your name, please? And your phone number? OK, that's fine, thank-you.

Now, there's one more thing that I should tell you about. It's really important that once you start this project, you finish it, otherwise I won't be able to help

you learn anything and you won't be helping me find out about depressed feelings. So, I'm asking everyone who's willing to participate in the project, to make a deposit of $10.00 with me, in the first session. When you finish the third session, you get back your $10.00 deposit as well as getting the $10.00 that I mentioned earlier. So, in the third session, you'd be getting $20.00. Now, if you don't come back for all three sessions, or don't phone to make other arrangements, then I'm afraid I'll have to send your $10.00 along to a charity organization. As I said, I'm doing this because it is really important that you come for all three sessions, once you start. Does that make sense?

So do you think that you'd be willing to participate? Good, can you tell me when you're free to come up to the university?"

(Arrangements are then made for time and place of first interview.)

Footnote:

When was the last time you saw your psychiatrist? (IF GREATER THAN SIX MONTHS, THEN PROCEED WITH TEXT. IF LESS, CONTINUE BELOW.) Well, I'm sorry, but I really won't be able to include you in the project, because I'm only looking for people who have not been to see a psychiatrist in the last six months or so. This is important

because I wouldn't want to interfere with anything that your psychiatrist might have planned for you. Thank-you anyway, for calling in.

Appendix C: Information concerning the nature of the project given to subjects who dropped by the experimenter's office.

"What I'm interested in, in this project, as I think I mentioned in class the other day, is how people feel and the sorts of feelings they have. I was wondering if you could give me a general idea of how you were feeling when you filled out the questionnaire in class the other day? **

The reason I ask this, is that some of the items you checked off suggested that you weren't feeling too happy about things at that time. Is that right? Can you tell me a bit about it? **

What I'm doing here is carrying out a project which is aimed at finding out how to help women learn to overcome depressed feelings. Essentially I'm talking to people who have depressed feelings and I'm trying to find out how they think about their problems. You see I believe that people feel depressed because of the way that they think about their problems. And I also believe that if you can teach people to think about their problems differently, then they might learn to overcome their depressed feelings. Does that make sense?

The project involves coming up to the university

** Indicates time when interviewer is silent and allows the subject to talk, before asking other questions.

three times over the course of two weeks for an interview with me. In the first interview, I'll be asking you to fill in a few simple forms, which ask you questions about the way you've been feeling in the past little while. Then I'm going to ask you a few questions which are similar to the ones on the forms, but which take a bit more time and care to answer. At anytime, if you feel that you don't want to answer a question, then that's OK, just say so.

In the second interview, I'm going to be providing you with a way of approaching these feelings which we talked about in the first interview. What that involves is some simple instructions for ways of thinking about your feelings. This will take the form of a small reminder-type card, which I'll give to you. When you come for the second interview I'll give you a more complete explanation so you know exactly what to do at the time.

The third session, which takes place a week after the second, is much like the first -- I'm going to talk to you about the way things went over the week, and I'll ask you to fill out some more forms.

Essentially, that's all that's involved. Because you're going to be helping me out by participating in this project, I'll be able to give you a hand by giving you $10.00. Now, I realize that $10.00 isn't a lot these days, but it's something that I can give you to show you how

much I appreciate your giving me a hand in this project. So, do you think that you'll be able to come? ... Good.

Before we arrange a time for the first interview, I wonder if you could tell me a couple of things first. Can you tell me please how old you are? Now, can you tell me if you have ever been to see a psychiatrist? (IF NO -- PROCEED WITH TEXT. IF YES -- SEE FOOTNOTE.) Can you give me your name, please? And your phone number?

Now, there's one more thing that I should tell you about. It's really important that once you start this project, you finish it, otherwise I won't be able to help you learn anything and you won't be helping me find out about depressed feelings. So, I'm asking everyone who's willing to participate in the project, to make a deposit of $10.00 with me, in the first session. When you finish the third session, you get back your $10.00 deposit as well as getting the $10.00 that I mentioned earlier. So, in the third session, you'd be getting $20.00. Now, if you don't come back for all three sessions, or don't phone to make other arrangements, then I'm afraid I'll have to send your $10.00 along to a charity organization. As I said, I'm doing this because it is really important that you come for all three sessions, once you start. Does that make sense?

So do you think that you'd be willing to participate? Good, can you tell me when you're free?"

(Arrangements are then made for time and place of first interview.)

Footnote:

When was the last time you saw your psychiatrist? (IF GREATER THAN SIX MONTHS, THEN PROCEED WITH TEXT. IF LESS, CONTINUE BELOW.) Well, I'm sorry, but I really won't be able to include you in the project, because I'm only looking for people who have not been to see a psychiatrist in the last six months or so. This is important because I wouldn't want to interfere with anything that your psychiatrist might have planned for you. Thank-you anyway, for calling in.

Appendix D: Information on subjects and statement rehearsal

Twenty-four individuals phoned the experimenter in response to the advertisement in the newspapers and on bulletin-boards. Six of these did not present themselves for the first interview, and when contacted subsequently, indicated that they did not wish to participate. Another two of these twenty-four people did not reach the cut-off levels on two of the three depression rating scales, and were therefore not included in the project. One person did not carry out the experimental procedure and as a result was replaced by another. In the end, 15 of the 24 phone-in subjects participated in the project.

Thirty-eight of the students who scored above 12 on the class-room administration of the D 30 dropped by the experimenter's office to have the purposes of the project explained to them. Twenty-two of these students indicated that they did not wish to participate. Sixteen students volunteered to become subjects, and with the exception of one person, scored above the cut-off levels on two of the three depression rating scales. In all then, there were 30 subjects who took part in the experiment, fifteen phone-ins and fifteen students. At the pre-test assessment, out of 30 subjects, 27 scored above the cut-off level on the D 30, 28 scored above the cut-off on the Beck D.I., and 25 scored above the cut-off level on the D.A.C.L.

Overall, a balance by age across experimental condition was maintained. In the Treatment condition, the ages of the subjects ranged from 17 to 47 years, with a mean age of 27.5 years and a standard deviation of 13.6 years. For subjects in the Expectancy Control condition, ages ranged from 18 to 55 years, with a mean age of 29.9 years and a standard deviation of 12.9. In the Waiting-List Control condition, subjects' ages spread between 18 and 40 years, the mean being 28.2, with a standard deviation of 7.22 years.

The ratio of phone-in subjects to class-room volunteers for each condition was as follows: Treatment condition, 6 phone-ins, 4 students; Expectancy Control, 4 phone-ins, 6 students; and Waiting-List Control condition, 5 phone-ins, 5 students.

All subjects who agreed to participate in the project completed the three sessions. Consequently, no subject forfeited her $10.00 deposit.

Statement rehearsal. There was no difference across conditions in the number of times which subjects rehearsed the statement which they had been given. Subjects in the Treatment condition rehearsed a mean number of 43.7 times (s.d. = 48.5), subjects in the Expectancy Control condition rehearsed a mean number of 52.4 times, with a standard deviation of 45.1, and subjects in the Waiting-List Control

condition rehearsed, between their second and third interview, a mean number of 36.4 times (s.d. = 34.8). A one-way ANOVA conducted on these data indicated no differences across conditions ($F_{2,27} = 0.34$, $p > .10$).

Statements. There were only three attributional statements used by subjects in the Treatment and Waiting-List Control conditions, one for each attribution pattern. It seemed to the experimenter, quite early on in the project, that the first few statements generated were sufficiently malleable so as to be adaptable to each subject's specific problem. Thus they were maintained and used throughout the project, the intent being to try and attain some measure of consistency, comparable to that existing in the Expectancy Control condition.

Finally, no Expectancy Control subjects indicated an interest in undergoing the treatment at a later date, if the "Treatment subjects (got) better, faster."

Appendix E: Sample of D 30.

SCALE A

Read each statement and decide if it is TRUE as applied to you, or FALSE as applied to you. If the statement is TRUE or MOSTLY TRUE as applied to you, the BLACKEN the "T". If the statement is FALSE or NOT USUALLY TRUE as applied to you, then BLACKEN THE "F". Remember to give your OWN OPINION of yourself. Please answer all the questions.

1.	My daily life is full of things that keep me interested.	T	F
2.	I am about as able to work as I ever was.	T	F
3.	I find it hard to keep my mind on a task or a job.	T	F
4.	At times I feel like smashing things.	T	F
5.	I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going".	T	F
6.	My sleep is fitful and disturbed.	T	F
7.	I prefer to pass by school friends, or people I have not seen in a long time, unless they speak to me first.	T	F
8.	I am a good mixer.	T	F
9.	I wish I could be as happy as others seem to be.	T	F
10.	I am certainly lacking in self confidence.	T	F
11.	I usually feel that life is worthwhile.	T	F
12.	I don't care what happens to me.	T	F
13.	I am happy most of the time.	T	F
14.	I seem about as capable and as smart as others around me.	T	F
15.	I do not worry about catching diseases.	T	F
16.	I certainly feel useless at times.	T	F
17.	Most nights I go to sleep without thoughts or ideas bothering me.	t	f
18.	Criticism or scolding hurts me directly.	T	F
19.	During the past few years I have been well most of the time.	T	F
20.	I cannot understand what I read as well as I used to .	T	F
21.	I never felt better in my life than I do now.	T	F
22.	I cry easily.	T	F
23.	My memory seems to be alright.	T	F
24.	I am afraid of losing my mind.	T	F
25.	I feel weak all over much of the time.	T	F
26.	I enjoy many different kinds of play and recreation.	T	F
27.	I believe that I am no more nervous than others.	T	F
28.	I have difficulty in starting things.	T	F
29.	I brood a great deal.	T	F
30.	I work under a great deal of tension.	T	F

Appendix F: Information on the construction, reliability, and validity of the D 30

The 30 items included in the D 30 are those items which were found to correlate most highly with each other amongst all the 60 MMPI D-Scale items. The result was a unidimensional scale with split-half reliabilities of .89 and .95 for male and female hospitalized depressed patients, compared with .85 and .85 of the original D-Scale. Test-retest reliability of the D 30 was .88 for 103 undergraduate females and .92 for 34 undergraduate males, retaking the D 30 after an interval of from three days to three weeks (Dempsey, 1964).

Hedlund (1965) has noted that the D-Scale of the MMPI is untrustworthy in differentiating among normals. The D 30 was constructed with the intent of compensating for this deficiency and has proven effective in differentiating between normal and abnormal populations as well as within both normal and abnormal populations (Hedlund, 1965). Dempsey (1964) suggested that the 60 item MMPI D-Scale be divided into two parts, the D 30 and the 30 excluded items, called by Dempsey, the D ex. When correlation coefficients were calculated between the D 30 and the D ex the resultant correlations were practically negligible, ranging from high values of .31 and -.27 to low values of -.07 and -.09. Dempsey pointed out that the part-whole correlations between the D ex and the whole scale, and between the D 30 and the whole scale for his corrective as well as cross-

validating populations, are .44 and .86 respectively. He argued that these results indicated that "the overwhelmingly important component of the original scale is represented by the D 30 scale." (p. 368).

Information concerning the concurrent validity of the D 30 is unfortunately not available. The majority of validational studies in the literature concerning the items in the D 30 have been carried out on the entire MMPI D-Scale. Presumably, since the D 30 correlates highly with the MMPI D-Scale, information concerning the concurrent validity of the D-Scale (i.e., correlations with other measures of depression), should also apply to the D 30. Thus, it is these data which are reported here.

Cross-validational studies have shown significant correlations as high as .73 between the MMPI D-Scale and the Beck D.I. for a sample of 37 female normals, and as low as .63 for a sample of 39 male normals (Marsalla et al., 1975). Lubin (1966) reported a significant (r = .44, $p < .01$) correlation between the MMPI D-Scale and the D.A.C.L., for a sample of 92 female normals, and the same level of correlation for a sample of 113 female patients.

Normative data for the D-Scale of the MMPI (Hathaway & McKinley, 1951) places the median normal score at a T-score of 50, raw score of 19. Dempsey gave norms for the D 30, and placed a T-score of 50 at a raw score of 6. Cross validation data comparing a number of depression

rating scales show the MMPI D-Scale to have a normal mean T-score of 54 with a raw score of 21.6 (Marsalla et al., 1975). Studies of normal populations using the D 30 have shown mean scores of 7.12 (Abbott, Hoffman & Davis, 1969) for a population of 76 alcoholic males; 6.01 for 32 college students (Salzman, Lieff, Kochansky & Shader, 1972); and 6.27 for 485 college students (Harmatz, Shader, & Salzman, 1972).

Previous work by Hammen and her associates (1975, 1976) has shown a raw score of 10 being used as a cut-off level for the D 30 when the D 30 was used as a screening device for depression. The present pilot study, however, indicated that some subjects with scores at or above 10 tended to be experiencing extremely transient depressed feelings. That is, a number of those subjects who obtained a score greater than or equal to 10 in the classroom administration of the D 30, scored at a much lower level on subsequent administration a week later, and did not give indication of depressed feelings upon questioning. The mean for 17 self-declared depressed students, however, was 13.4 (s.d. = 4.05). It was thus decided, to ensure that subjects included in the experiment were experiencing more than a transient depressed mood, that a cut-off level of 12 on the D 30 be used.

Appendix G: Sample of Beck Depression Inventory (Beck D.I.)

INSTRUCTIONS SCALE B

On this questionaire are groups of statements. Please read the entire group of statements of each category. Then pick out the one statement in that group which best describes the way you feel today. Circle the number beside the statement you have chosen. If several statements in the group seem to apply equally well, circle each one.

BE SURE TO READ ALL THE STATEMENTS IN EACH GROUP BEFORE MAKING YOUR CHOICE.

SCALE B

A. 0. I do not feel sad
1. I feel sad or blue
2a. I am blue or sad all of the time and I cannot snap out of it
2b. I am so sad or unhappy that it is very painful
3. I am so sad or unhappy that I can't stand it

B. 0. I am not particularly pessimistic or discouraged about the future
1a. I feel discouraged about the future
2a. I feel I have nothing to look forward to.
2b. I feel I won't ever get over my troubles.
3. I feel that the future is hopeless and that things cannot improve.

C. 0. I do not feel like a failure.
1. I feel I have failed more than the average person.
2a. I feel I have accomplished very little that is worthwhile or that means anything.
2b. As I look back on my life all I can see is a lot of failures.
3. I feel I am a complete failure as a person.

D. 0. I am not particularly dissatisfied.
1a. I feel bored most of the time.
1b. I don't enjoy things the way I used to.
2. I don't get satisfaction out of anything anymore.
3. I am dissatisfied with everything.

E. 0. I don't feel particularly guilty.
1. I feel bad or unworthy a good part of the time.
2a. I feel quite guilty.
2b. I feel bad or unworthy practically all the time now.
3. I feel as though I am very bad or worthless.

F. 0. I don't feel I am being punished.
1. I have a feeling that something bad may happen to me.
2. I feel I am being punished or will be punished.
3a. I feel I deserve to be punished.
3b. I want to be punished.

G. 0. I don't feel disappointed in myself.
1a. I am disappointed in myself.
1b. I don't like myself.
2. I am disgusted with myself.
3. I hate myself.

H. 0. I don't feel I am worse than anybody else.
1. I am very critical of myself for my weaknesses or mistakes.
2a. I blame myself for everything that goes wrong.
2b. I feel I have many bad faults.

I. 0. I don't have any thoughts of harming myself.
1. I have thoughts of harming myself, but I would not carry them out.
2a. I feel I would be better off dead.
2b. I have definite plans about committing suicide.
2c. I feel my family would be better off if I were dead.
3. I would kill myself if I could.

J. 0. I don't cry any more than usual.
1. I cry more now than I used to.
2. I cry all the time now. I can't stop it.
3. I used to be able to cry but now I can't cry at all even though I want to.

K. 0. I am no more irritated now than I ever am.
1. I get annoyed or irritated more easily than I used to.
2. I feel irritated all the time.
3. I don't get irritated at all at things that used to irritate me.

L. 0. I have not lost interest in other people.
1. I am less interested in other people now than I used to be.
2. I have lost most of my interest in other people and have little feeling for them.
3. I have lost all my interest in other people and don't care about them at all.

M. 0. I make decisions about as well as ever.
1. I am less sure of myself now and try to put off making decisions.
2. I can't make decisions any more without help.
3. I can't make any decisions at all any more.

N. 0. I don't feel I look any worse than I used to.
1. I am worried that I am looking old or unattractive.
2. I feel that there are permanent changes in my appearance and they make me look unattractive.
3. I feel I am ugly or repulsive looking.

O. 0. I can work about as well as before.
1a. It takes extra effort to get started at doing something.
1b. I don't work as well as I used to.
2. I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3. I wake up early every day and can't get more than 5 hours sleep.

P. 0. I don't get any more tired than usual.
1. I get tired more easily than I used to.
2. I get tired from doing nothing.
3. I get too tired to do anything.

Q. 0. My appetite is no worse than usual.
1. My appetite is not as good as it used to be.
2. My appetite is much worse now.
3. I have no appetite at all anymore.

R. 0. I haven't lost much weight, if any, lately.
1. I have lost more than 5 pounds.
2. I have lost more than 10 pounds.
3. I have lost more than 15 pounds.

S. 0. I am no more concerned about my health than usual.
1. I am concerned about aches and pains or upset stomach or constipation or other unpleasant feelings in my body.
2. I am so concerned with how I feel or what I feel that it's hard to think of much else.
3. I am completely absorbed in what I feel.

T. 0. I have not noticed any recent changes in my interest in sex.
1. I am less interested in sex than I used to be.
2. I am much less interested in sex now.
3. I have lost interest in sex completely.

Appendix H: Reliability and validity information for the Beck Depression Inventory (Beck D.I.)

Split-half reliabilities for the Beck D.I. calculated on 97 clinical cases, all depressed, was .86; with a Spearman-Brown correction, this coefficient rose to .93 (Beck, et al., 1961). The Beck D.I. has been shown to correlate significantly with other depression rating scales. Marsella, Sanborn, Kameoka, Shizura, and Brennan (1975) reported correlations of .73 and .63 for 37 female normals and 39 male normals, respectively, between the Beck D.I. and the MMPI D-Scale. Seitz (1970) showed a significant (r = .41, $p < .05$) correlation between the Beck D.I. and the MMPI D-Scale for 30 male psychiatric in-patients diagnosed as neurotic depressive reactions. Beck (1967) reported a correlation of .75 between the Beck D.I. and the D-Scale on the MMPI. Similarly, Beck (1967) reported a correlation of .66 with the whole D.A.C.L. on a mixed population of psychiatric and normal males and females. The Beck D.I. has also been shown to be a good indicator of clinical change (Beck, 1967; Johnson & Heather, 1974). There is good evidence then to indicate that the Beck Depression Inventory is a valid and reliable measure of depression.

It is difficult to make inferences concerning cut-off levels for mildly depressed normals on the basis of standardization scores and validational studies conducted on psychiatric populations. It seemed more likely that in-

ferences made on the basis of data obtained from normal populations was a better indicator of a reasonable cut-off level for mildly depressed normals.

A score of 10 on the Beck D.I. has been used as a cut-off level in previous studies of mildly depressed individuals (Golin & Terrell, 1977; Hammen & Glass, 1975; Hammen & Krantz, 1976; Nelson & Craighead, 1977). This score is within one standard deviation of the mean of a British population in a validational study of mildly depressed psychiatric patients (Melcalfe & Goldman, 1965). Here, with a sample of 120, the mean for "mild" depression was 14.3 (s.d. = 8.3). For the "normal" group, however, the mean was 5.4, with a standard deviation of 5.8. Marsella et al. (1975) in a cross-validational study showed that a group of 37 normal females had a mean score of 6.49 with a standard deviation of 6.77. Gresham, Agnew, and Williams (1965) obtained a mean of 6.2 for eight normal controls in a study of the sleeping EEG patterns of depressives.

Given this validational data of "normal" means close to a raw score of 6 it did not appear unreasonable to choose 10 as a cut-off level for mildly depressed normals. Additionally, information supplied from the pilot study supported this choice of a cut-off level. The mean in this group of 17 depressed normals was 12.4 with a standard deviation of 6.9.

Appendix I: Sample of Depression Adjective Checklist - Form A (D.A.C.L.)

SCALE C

Check each adjective which describes how you feel now--TODAY.

strong	___	weary	___
fine	___	tortured	___
enthusiastic	___	afflicted	___
downcast	___	wretched	___
broken	___	dreamy	___
hopeless	___	listless	___
destroyed	___	broken-hearted	___
miserable	___	criticized	___
sad	___	sunny	___
wilted	___	droopy	___
low-spirited	___	lightheaded	___
gloomy	___	gay	___
active	___	oppressed	___
safe	___	joyous	___
unwanted	___	dull	___
grieved	___	failure	___

Appendix J: Reliability and validity information on the D.A.C.L.

Split-half reliability for the Depression Adjective Checklist or D.A.C.L. ranges from .86 (males) to .92 (females) for a normal population, and from .88 (males) to .91 (females) for a hospitalized psychiatric population (Lubin, 1965). Lubin (1966) reported that the D.A.C.L. (Form A) correlated significantly with the Beck D.I. (r = .49 for 92 female normals and r = .57 for 39 female patients, $p < .01$) as well as with the MMPI D-Scale (reported in Appendix F). In all reliability and validity studies reported, Form A of the D.A.C.L. consistently obtained the highest correlation coefficients using female subjects. Fogel, Curtis, Kordasz, and Smith (1966) in comparing judges' ratings and self-ratings of 73 male and female psychiatric patients, with the D.A.C.L. as well as the Zuckerman Anxiety Checklist (Zuckerman, 1960) reported that the D.A.C.L. correlated significantly with judges' ratings (r = .44, $p < .01$) as well as with self-ratings (r = .71, $p < .01$). In addition, Fogel et al. (1966) reported that the D.A.C.L. was more successful than the Zuckerman Anxiety Checklist in differentiating anxiety from depression.

Lubin (1965) reported that the mean score for 469 normal females was 7.8 while the mean for 100 hospitalized depressed females was 16.03. Coursey, Buchsbaum, and Frankel (1975), when comparing a group of insomniacs with

normals, reported a D.A.C.L. mean score of 7 for 18 normals used in the study. The 18 insomniacs obtained a mean score of 8.94 on the D.A.C.L. Golub (1976) reported a mean of 6.84 on the D.A.C.L. - Forms A and D for 50 normal females. For the six subjects treated in the second part of the pilot study, the mean pre-test score was 11.2, with a standard deviation of 4.2. On the basis of this information then, it was decided that a cut-off score of 9 would be used as a screening device for subjects in the present study.

Appendix K: Sample of Subjective Depression Indicator and Questionaire - Form I (S.D.I.Q. - I)

SCALE D - FORM I

After reading each statement, circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	6	7
more depressed						less depressed

2. Right now, I am feeling,

1	2	3	4	5	6	7
not depressed at all						very much depressed

3. Things which worry me and which I think make me feel depressed are

i. _____

ii. _____

iii. _____

iv. _____

v. _____

Appendix L: Sample of Subjective Depression Indicator and Questionaire - Form II (S.D.I.Q. - II)

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling

1	2	3	4	5	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question 2, what do you think has changed about you?

_____

_____

_____

_____

4. If you circled a number other than 4 in question 2, what do you think were the causes (was the cause) of the change(s).?

_____

_____

_____

_____

_____

5. Summarize in a few words what you have learned from this project?

_____

_____

_____

_____

Appendix M: Sample of Attribution Pattern Indicator (A.P.I.)

SCALE I:

After reading each statement, circle the number which best describes how you feel today.

1. I think that it's usually best to cover up one's mistakes.

least like me 1 2 3 4 5 6 7 most like me

2. When I make plans to do something, I am almost certain that I can make them work.

most like me 1 2 3 4 5 6 7 least like me

3. I seem to have a lot to do with things which end up badly.

strongly disagree 1 2 3 4 5 6 7 strongly agree

4. Sometimes I see things about to happen which I could prevent if I really tried, but I can't seem to bring myself to do it.

most like me 1 2 3 4 5 6 7 least like me

5. I often have difficulty doing what I set out to do.

not true of me 1 2 3 4 5 6 7 true of me

6. Sometimes I feel that helping others is worthwhile.

least like me 1 2 3 4 5 6 7 most like me

7. There are some things which I'd really like to do but won't try because I'm afraid of not succeeding.

most like me 1 2 3 4 5 6 7 least like me

8. When something bad happens, and I think about it carefully, there's usually a very good reason for it, that doesn't have anything to do with me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

9. If something goes wrong and I'm involved, I usually think that it's mostly my fault.

most like me 1 2 3 4 5 6 7 least like me

10. Lately, no matter what I do, things always seem to go badly.

not true of me 1 2 3 4 5 6 7 true of me

11. When something begins to go wrong, I know, if I really set my mind to it, that I can stop it from going wrong.

most like me 1 2 3 4 5 6 7 least like me

12. I think that being a good leader is an important quality to have.

strongly agree 1 2 3 4 5 6 7 strongly disagree

Appendix N: Scoring procedure for Attribution Pattern Indicator

Scoring Procedure for A.P.I. (Scale E)

Reverse numbering on Items 4, 7, 8, 9

Total Pattern I: Sum scores on Items 2, 5, 7

Total Pattern II: Sum scores on Items 3, 8, 9

Total Pattern III: Sum scores on Items 4, 10, 11

Note: Pattern I: failure to cause positive outcomes

Pattern II: causing negative outcomes

Pattern III: failure to prevent negative outcomes

Code to Statements:

1. Filler
2. I
3. II
4. III (reverse for scoring)
5. I
6. Filler
7. I (reverse for scoring)
8. II (reverse for scoring)
9. II (reverse for scoring
10. III
11. III
12. Filler

Appendix O: Sample of Locus of Responsibility Scale (L.R.S.)

SCALE F

After reading each statement, make a mark through the line at the point which best describes or indicates how you feel today.

1. When I think of all the problems which make me feel depressed, I think that the person most responsible for these problems is

myself ——————————— someone or something else

2. When I think about the problem which I worry about the most, I think that this problem is caused mainly by

me (as a result of my own actions) ——————————— others (as a result of someone else's actions or things in the situation)

Appendix P: Example of attributional statement given to subject, typed on one side of cue-card, and instructions for recording typed on the other side

#3

If I think carefully about my situation, I'll see that I can do what is necessary to do.

Record, with a mark, each time you say this statement over to yourself.

Tuesday: ✓

Wednesday: ✓ ✓ ✓

Thursday: ✓

Friday: ✓ ✓ ✓

Saturday: ✓ ✓ ✓ ✓

Sunday: ✓ ✓ ✓ ✓ ✓

Monday: ✓ ✓ ✓ ✓

Subjects were instructed to "monitor" their thoughts at all

times. They were asked to be particularly aware of the times when they thought of the target problem. Every time they thought of the target problem, they were asked to read over the statement typed on the card, and then to mark the occasion on the other side of the card, with a tick.

Appendix Q: Tape analysis

The 19 tapes of the Treatment and Expectancy Control subjects' third interview, which were rated by an independent rater, were scored on seven characteristic types of statements. A description of these types, as well as the statistical analyses carried out on these ratings, follows.

The first type of statement assessed was the number of positive self-referent statements the subject made in the course of the final interview. Statements which began with "I feel better ..." and "I can do ..." were counted as positive self-referents. Treatment subjects had a mean of 6.11 (s.d. = 4.15) and Expectancy Control subjects had a mean of 6.00 (s.d. = 2.90) of these types of statements. There was no significant difference between conditions on this type ($\underline{t}_{17} = 0.065$, $\underline{p} > .90$).

The second type measured was negative-self-referent statements, such as "I don't feel better ..." and "I can't do ...". Treatment subjects had a mean of 4.22 (s.d. = 3.46) and Expectancy Control subjects had a mean of 2.80 (s.d. = 2.36) statements of this kind. There was no difference between these means ($\underline{t}_{17} = .99$, $\underline{p} > .90$).

Neutral self-referent statements were ones which could not be classified as either positive or negative, by the rater. Treatment subjects had a mean of 1.22 (s.d. = 1.4) and Expectancy Control had a mean of 0.60

(s.d. = .92), and the difference was not significant ($\underline{t}_{17} = 1.069$, $\underline{p} < .30$).

Active control statements were ones which indicated that the subject perceived or indicated herself as being able to do something, e.g., "I can do this ...". Treatment subjects made these types of statements a mean number of 8.11 (s.d. = 3.41) times while Expectancy Control subjects only made these statements a mean number of 5.40 (s.d. = 3.32) times. This difference was of borderline significance ($\underline{t}_{17} = 1.658$, $\underline{p} < .057$, one-tailed).

Passive control statements such as "Whenever so-and-so does this I feel rotten ..." indicated that the subject was not in control of her own actions and feelings. Treatment subjects made these statements a mean number of 0.78 times (s.d. = 1.31), whereas Expectancy Control subjects made statements such as these a mean number of 0.30 times (s.d. = 0.64). These differences were not significant ($\underline{t}_{17} = .97$, $\underline{p} > .30$).

Statements of positive future orientation were ones which indicated a positive intent to carry out something in the future, for example, "I am looking forward to going ...". Treatment subjects made these statements a mean number of 4 times (s.d. = 2.98) whereas Expectancy Control subjects made these statements a mean number of 2.10 times (s.d. = 1.14). This difference was significant

(t_{17} = 1.769, $p < .047$, one-tailed).

Finally, statements of negative future orientation were assessed. These were statements which indicated that the subject did not perceive herself as able to accomplish something in the future, for example, "I don't think I'm going to pass ..." or "I think I'm not going to get a date". Treatment subjects made these statements a mean number of 0.67 times (s.d. = 0.94) and Expectancy Control subjects made these statements a mean number of 0.20 times (s.d. = 0.40). This difference was not significant (t_{17} = 1.352, $p < .097$, one-tailed).

Appendix R: Subjective Depression Indicator and Questionnaire - Form II (S.D.I.Q. - II) response sheet for each subject

TR - #1

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I have decided to try and not let things bother me

4. If you circled a number other than ~~question~~ #4 in question #2, what do you think were the CAUSES of this change?

Thinking about my problem and trying to deal with it.

5. Summarize in a few words, what you have learned from this project.

That only I can determine how things will affect me!

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	(3)	4	5	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	3	(4)	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

4. If you circled a number other than ~~[illegible]~~ #4 in question #2, what do you think were the CAUSES of that change?

Mainly the weather. I get very depressed in the fog, particularly when it is supposed to be summer. It affects my mental & physical state.

5. Summarize in a few words, what you have learned from this project.

I can be more rational at times of stress. I think about the problem more, rather than just suffer under it.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	(6)	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	(2)	3	4	5	6	7
changed for the beeter						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

Am not sure whether change is permanent of course - but have been trying to think more positively about doing things - have been doing it - & finding it was alright.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

Probably wanting a change so much; repetition of positive thoughts & believing guidelines of card.

5. Summarize in a few words, what you have learned from this project.

Nothing seems - at this moment - quite so bad as I thought it would be. I can do it, it doesn't matter

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	6	(7)
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

(1)	2	3	4	5	6	7
changed for the beeter						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

That I can change how I feel

4. If you circled a number other than ~~4~~ #4 in question #2, what do you think were the CAUSES of that change?

Telling someone my problem and realizing that I can control how I feel - if I really try.

5. Summarize in a few words, what you have learned from this project.

Control of my emotions

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	(2)	3	4	5	6	7
changed for the beeter						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I am more determined to get things done when I start them. than I used to be.

4. If you circled a number other than 4 in question #2; what do you think were the CAUSES of that change?

Knowing that I can do the things I start ow to do and having confidence in myself.

5. Summarize in a few words, what you have learned from this project.

I have learned to put my mind to things by saying to myself that if I think about it, I can get the things done that I feel are necessary. This has enabled me to get started on things immediately and to be determined to finish whatever I feel I can do.

TR-20

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

My attitude.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

myself.

5. Summarize in a few words, what you have learned from this project.

To think differently.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	(6)	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	(2)	3	4	5	6	7
changed for the beeter						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

More active, not so depressed, more sure of myself and so irritable

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

Realizing I cannot change the past

5. Summarize in a few words, what you have learned from this project.

If I think about something or dwell on it long enough it bothers me more than if I try to put it from my mind immediately.

TR-25

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I'm enjoying some of the things I'm doing which makes me happy with myself. I am a little more determined & a little more confident.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

Things I started to do.
- knit a blanket for my pregnant girlfri
- did a good job with a topic in one particular course.
- went swimming

5. Summarize in a few words, what you have learned from this project.

that I am able to do what I feel is necessary to do.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	(6)	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	(2)	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I feel I am not blaming myself now for everything that went wrong. I know now that they are always other factors which can influence the way something turns out.

4. If you circled a number other than 4 in question #2, what do you think were the CAUSES of that change?

The causes of the change here is that finally I took the time to really look at myself in a different light and I realized I had been viewing myself very negatively. Sometimes blaming yourself is an easy way out.

5. Summarize in a few words, what you have learned from this project.

From this I have learned that I am the person I want to be and that I have to think positively.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	6	(7)
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

(1)	2	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

cause 1
This week I'm content, & also looking forward to the immediate future (ie end of exams, school)

→ I'm not thinking about the past in anyway & if my mind does drift in that direction my emotional response is either pleasant or neutral.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

cause 2

5. Summarize in a few words, what you have learned from this project.

→ It's not the end of the world to admit to depression & tell someone else about what is depressing.

- This week I've not been depressed (I think for physiological reasons) so haven't needed to refer to "my contract" for much support. However, the knowledge of having that little contract is a reassurance that I'll be better equipped to handle my next round of depression.

Ex-C-2

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	(6)	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	(2)	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

more positive attitude

4. If you circled a number other than ~~4~~ #4 in question #2, what do you think were the CAUSES of that change?

Statement

5. Summarize in a few words, what you have earned from this project.

to think positively and not to blame everything on myself.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

more outgoing than usual. I try to do things instead of sitting in the house feeling sorry for myself.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

I tried harder. After reading the card I thought about my problems less - I tried to concentrate on the card more.

5. Summarize in a few words, what you have learned from this project.

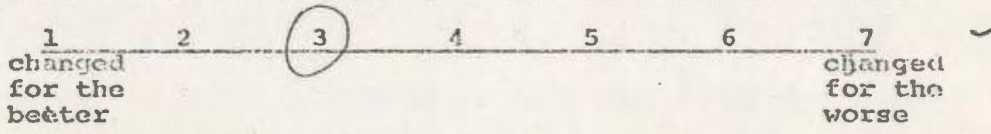
To do something constructive instead of just brooding about problems.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

2. Compared to how I was feeling a week ago, I think I have



3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I try to concentrate more on ridding myself of depression, rather than on the depression itself.

4. If you circled a number other than ~~[illegible]~~ #4 in question #2, what do you think were the CAUSES of that change?

Consciously thinking of something else — taking a walk — etc.

5. Summarize in a few words, what you have learned from this project.

that by making a conscious effort not to be depressed or let a problem get you down, you can often prevent it.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1 — 2 — 3 — 4 — 5 — (6) — 7

more depressed ... less depressed

2. Compared to how I was feeling a week ago, I think I have

1 — (2) — 3 — 4 — 5 — 6 — 7

changed for the better ... changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

My attitudes have changed. I am no longer ~~depressed~~ pessimistic about everything

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

The little talks I had with my friend Prof. & also with my mother. They made me realize there really is nothing for me to get depressed about.

5. Summarize in a few words, what you have learned from this project.

I have learned that it can be very helpful to a depressed person such as myself because it makes you open up and let out some of the things you have kept inside of me for so long

Ex-C-11

SCALE D - FORM 11

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I'm not concentrating as much on my problems. Instead I am paying a bit more attention to work. Also, I'm not day-dreaming as much as I used to.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

By forcing my mind to think of other things. I realized, to some extent, that thinking about my problems only makes them more + not thinking about the future doesn't help me at the present time.

5. Summarize in a few words, what you have learned from this project.

That if I really want to + try hard enough to concentrate, then I can + am doing so, I accomplish more.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	6	(7)
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

More likely to look at another's point of view besides my own and accept it

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

— A Bible verse — Do not wiggle the ox that threshed out the corn"
"A long story behind that one"
— Talked it my problem, he's got his problems to
— Old Friends have arrived in St. John's things not so boring.
— That little card in a way

5. Summarize in a few words, what you have learned from this project.

- Nothing that I haven't thought of before.
- but didn't try.
Maybe "try a bit harder" you can convince yourself of anything.

Ex-C-17

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I am not as worried about Some of my Courses.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

I tried to think diffrently.

5. Summarize in a few words, what you have learned from this project.

I have learnt that I should not Judged myself as the only one who Are experiencing the Same problems Cos myself

SCALE D - FORM MT

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I've thought things over (not that I haven't before) but in a different light. I can't be wrong all of the time? Who's to say who's right or wrong? I feel more on my own road today. If anyone wants to stay on it with me, that's fine. If anyone wants to go elsewhere, there's always a ditch or another road to follow.

4. If you circled a number other than 4 in question #2, what do you think were the CAUSES of that change?

I've tried to be more logical about my situation over the past week as a result of my repeated statement, "Be rational."

5. Summarize in a few words, what you have learned from this project.

I've always being following rules. And I've always feel you need laws, rules, whatever to live in a civilized society. But if it's hunting me to the extent that I can't get off the ground to get things accomplished then it's not worth abiding by. You've gotta pick one of the two:

1. "Move ahead and say "hang it all" to my problems." or
2. Mope around and dwell on it forever and let life slide by. (I'm still a little in between both but closer to 1 than 2).

Ex-C-31

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	(6)	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

Able to reason something out. Viewing two sides.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

Able to accept things better due to reasoning

5. Summarize in a few words, what you have learned from this project.

I appreciated the word "rationalizing" which I have seriously tried to do and which has enabled me to act upon certain situations

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	(6)	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	(2)	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

The ~~atti~~ attitude I have now about my problem has changed quiet a bit.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

Giving my self a good scolding when I find myself thinking the wrong thin

5. Summarize in a few words, what you have learned from this project.

I ~~found~~ that repeating the words on the card, that was ~~given~~ given to me last week, made me realize only me have ~~full~~ control of my thinking, and only me is going to change that.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

~~I've gone~~ I've seem to be going into my monthly slump, but I feel able to handle it better this time.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

Physical

5. Summarize in a few words, what you have learned from this project.

If I think carefully about things, & my situation, I have more control of over it, and my emotions.

WLC - 12

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	5	(6)	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	(2)	3	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I have made a conscious decision that I am important; therefore whatever I do is right for me

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

A different attitude toward those around me inspired by telling myself that I was decisive in my own affairs and thoughts even. Dreams which I had over the week bore this out.

5. Summarize in a few words, what you have learned from this project.

I have learned the power of auto suggestion.

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I have become a bit more decisive about things I plan to do now and in the future.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

Understanding that there are things I cannot change but I can control to a point their effect on me

5. Summarize in a few words, what you have learned from this project.

That I can have a bit more control over my emotions than I thought I could.

WLC - 23

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1 ——— 2 ——— 3 ——— 4 ——— (5) ——— 6 ——— 7

more depressed — less depressed

2. Compared to how I was feeling a week ago, I think I have

1 ——— 2 ——— (3) ——— 4 ——— 5 ——— 6 ——— 7

changed for the better — changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I look at things more positively now. I realize that it can't be as bad as I think it is; I'm just being silly. It's time I smartened up.

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

That statement handed to me on the card was so simple that I felt kind of silly. After all anyone would give you that advice; so my "problems" were not as complicated as I thought.

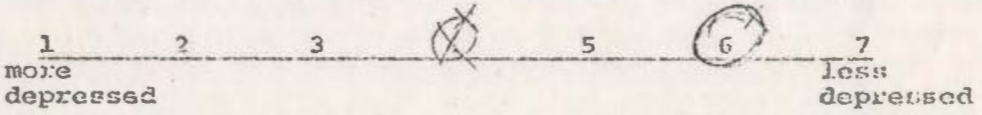
5. Summarize in a few words, what you have learned from this project.

Well, I've gotten back some of my ability to think positively. Also talking helps in relating to one's problems, especially talking to an outsider. However, this project was short & to the point and one feels rather uncomfortable about talking [illegible] complaining. The project did help though. Could be very beneficial to others.

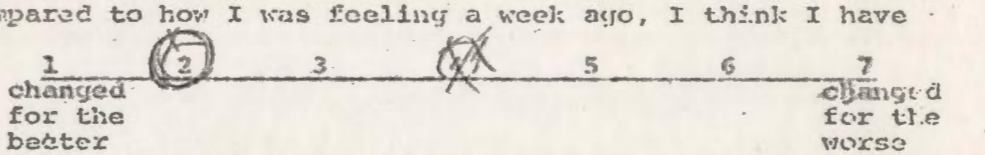
SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,



2. Compared to how I was feeling a week ago, I think I have



3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

~~Because I had an operation~~

Now I have a feeling what caused me to feel ~~so~~ depressed

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of that change?

Because I had a minor operation

5. Summarize in a few words, what you have learned from this project.

not to be analyzing everything I do

SCALE D - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	(3)	4	5	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	3	(4)	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

4. If you circled a number other than #4 in question #2, what do you think were the CAUSES of the change?

5. Summarize in a few words, what you have learned from this project.

- Because a lot of these statements are true of me; I've realized I'm not alone. I thought I was mixed up, but apparently this must be a common problem.

SCALE D - FORM XI

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	3	(4)	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

4. If you circled a number other than 4 in question #2, what do you think were the CAUSES of that change?

5. Summarize in a few words, what you have learned from this project.

I've realized that my problems really do exist but it's up to me to make a change. From doing this project I was forced to face my problems - not to avoid. I know that I can change if I try.

WLC-27

SCALE B - FORM II

Circle the number which best describes how you feel today.

1. Compared to how I was feeling a week ago, I am feeling,

1	2	3	4	(5)	6	7
more depressed						less depressed

2. Compared to how I was feeling a week ago, I think I have

1	2	(3)	4	5	6	7
changed for the better						changed for the worse

3. If you circled a number other than 4 in question #2, WHAT do you think has changed about you?

I am not as depressed as worri
as I was

4. If you circled a number other than [redacted] in question #2, what do you think were the CAUSES of that change?

I don't have much time to bro
about my problems

5. Summarize in a few words, what you have learned from this project.

I have learned to discipline my
thoughts so they won't worry me
too much.

SCALE D - FORM IX

the number which best describes how you feel today.

pared to how I was feeling a week ago, I am feeling,

1 — 2 — 3 — 4 — 5 — (6) — 7 ✓

more depressed — less depressed

pared to how I was feeling a week ago. I think I have

1 — 2 — (3) — 4 — 5 — 6 — 7

changed for the better — changed for the worse

you circled a number other than 4 in question #2, WHAT do think has changed about you? The suggestion that I consider all causes for problems I'm having and stopping there I forced myself not to extend the blame totally to myself.

you circled a number other than ~~3 or 5~~ #4 in question #2, t do you think were the CAUSES of that change?

The fact that many causes could have resulted in my problem, and that finally I've realized they all don't have to come back directly to me. Also, I've learned to control my thoughts to causes and not extensions of the cause just being me.

marize in a few words, what you have learned from this project.

That a problem such as mine as many causes besides my own actions and that any one of those or a combination could have caused the problem. Now that I can face that it has restored some self confidence and I'm not afraid to try again — Keeping the suggestion in mind of other causes being the cause I doesn't eliminate my part in the problem, but reduces it.