



1979

The Dysfunctional Attitude Scale: A Validation Study

Arlene Nancy Weissman
University of Pennsylvania

Follow this and additional works at: <http://repository.upenn.edu/edissertations>

 Part of the [Psychoanalysis and Psychotherapy Commons](#), and the [Psychology Commons](#)

Recommended Citation

Weissman, Arlene Nancy, "The Dysfunctional Attitude Scale: A Validation Study" (1979). *Publicly Accessible Penn Dissertations*. 1182.
<http://repository.upenn.edu/edissertations/1182>

This paper is posted at ScholarlyCommons. <http://repository.upenn.edu/edissertations/1182>
For more information, please contact libraryrepository@pobox.upenn.edu.

The Dysfunctional Attitude Scale: A Validation Study

Degree Type

Dissertation

Degree Name

Doctor of Philosophy (PhD)

Graduate Group

Education

First Advisor

Andrew R. Baggaley

Subject Categories

Psychoanalysis and Psychotherapy | Psychology

7919533

WEISSMAN, ARLENE NANCY
THE DYSFUNCTIONAL ATTITUDE SCALE: A
VALIDATION STUDY.

UNIVERSITY OF PENNSYLVANIA, PH.D., 1979

COPIED BY 1979 WEISSMAN, ARLENE NANCY

University
Microfilms
International 300 N. ZEEB ROAD, ANN ARBOR, MI 48106

© 1979

ARLENE NANCY WEISSMAN

ALL RIGHTS RESERVED

PLEASE NOTE:

In all cases this material has been filmed in the best possible way from the available copy. Problems encountered with this document have been identified here with a check mark .

1. Glossy photographs _____
2. Colored illustrations _____
3. Photographs with dark background _____
4. Illustrations are poor copy _____
5. Print shows through as there is text on both sides of page _____
6. Indistinct, broken or small print on several pages throughout

7. Tightly bound copy with print lost in spine _____
8. Computer printout pages with indistinct print _____
9. Page(s) _____ lacking when material received, and not available from school or author _____
10. Page(s) _____ seem to be missing in numbering only as text follows _____
11. Poor carbon copy _____
12. Not original copy, several pages with blurred type _____
13. Appendix pages are poor copy _____
14. Original copy with light type _____
15. Curling and wrinkled pages _____
16. Other _____

University
Microfilms
International

300 N. ZEEB RD., ANN ARBOR, MI 48106 (313) 761-4700

THE DYSFUNCTIONAL ATTITUDE SCALE:

A VALIDATION STUDY

by

ARLENE NANCY WEISSMAN

A DISSERTATION

IN

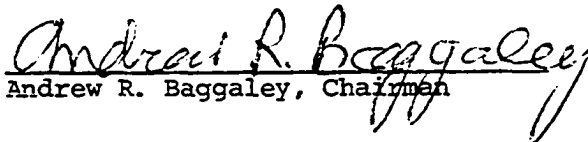
EDUCATION

Presented to the Faculty of the Graduate School of Arts and
Sciences of the University of Pennsylvania in Partial
Fulfillment of the Requirements for the Degree of

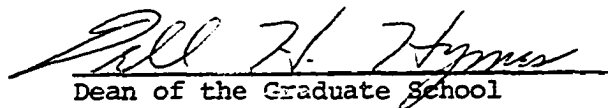
DOCTOR OF PHILOSOPHY

1979

Approved:


Andrew R. Baggaley, Chairman

Accepted:


Dean of the Graduate School

ACKNOWLEDGMENTS

The dissertation that follows is the product of several years and many persons' efforts. Neither space nor language allows an adequate accounting of all who made significant contributions to my development and to the completion of this study. I would like to express my sincere thanks to Dr. Aaron T. Beck whose early and continuous interest and support provided the basis for this dissertation. The assistance and suggestions of Dr. Andrew Baggaley, Dr. Arthur Dole, and Dr. Daniel Wagner, who served on my committee, are also acknowledged. The frustrations of data collection were eased greatly by Drs. Edward Craighead, Marylou Ginsberg, Steven Gulkus, Constance Hammen, John Rush, Maria Watkins and Shelley Weber who provided valuable assistance. A special thanks is extended to Ms. Lynn Schreiber, who assisted in the scoring of the data as well as to Ms. Patti Sierota and Ms. Nancy Wagner who typed the final manuscript. I would be remiss if I failed to acknowledge the support and encouragement afforded me by my family and friends.

Finally this dissertation is dedicated to the memory of Julia E. Grossman, my grandmother, who provided a constant source of encouragement and taught me that it is always necessary to do what is right and to do it well.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
LIST OF FIGURES	viii
I. INTRODUCTION	1
Statement of the Problem.....	1
The Cognitive View of Emotions	3
The Evaluation of the Concept of Depression	9
Definition of Depression	16
Beck's Cognitive Theory of Depression	17
The Concept of Schemas	23
Empirical Findings	29
Review of Existing Measures	37
Purpose of the Research	45
Research Hypotheses	47
II. CONSTRUCTION OF THE DYSFUNCTIONAL ATTITUDE SCALE	48
Test Format	48
Initial Item Selection	50
Refinement of the Scale	56
III. THE VALIDATION OF THE DYSFUNCTIONAL ATTITUDE SCALE	73
Methodology	73
Procedures	85
Psychometric Properties of DAS-A and DAS-B	92
IV. RESULTS AND DISCUSSION	100
Equating of DAS-A and DAS-B Scores	100
Descriptive Statistics	101

TABLE OF CONTENTS (cont.)

	Page
IV. RESULTS AND DISCUSSION (cont.)	
Relationship to Demographic Information.....	103
Reliability of the DAS-A and DAS-B.....	106
Validity of the DAS.....	111
V. FINAL COMMENTS.....	134
Evaluation of the Dysfunctional Attitude Scale.....	134
Questions Raised by the Data.....	137
Implications for Beck's Position.....	140
Potential Value of the DAS.....	141
VI. SUMMARY.....	143
APPENDIX A.....	146
APPENDIX B.....	150
APPENDIX C.....	154
APPENDIX D.....	156
APPENDIX E.....	164
APPENDIX F.....	171
INDEX.....	178
REFERENCES.....	183

LIST OF TABLES

	Page
1. Unrotated Factor Matrix: 100 Item DAS	58
2. Rotated Orthogonal-Factor Matrix: 100 Item DAS	60
3. 100-Item Form of the Dysfunctional Attitude Scale: Keys, DAS Assignments, Means, S.D.'s, and Loadings	65
4. Demographic Characteristics of the Sample	86
5. Clinically Relevant Background Characteristics of the Sample	88
6. Descriptive Statistics for the Assessment Variables	102
7. Means and S.D.'s on the Assessment Instruments by Sex	105
8. Item Statistics for Each Form of the DAS Under Varying Conditions	108
9. Intercorrelations among the Assessment Variables	112
10. Partial Correlations of DAS Responses with Mood	116
11. BDI and DAS Scores at Pre- and Posttesting as a Function of Psychopathological Classification	117
12. Distortion Scores for Males and Females by Changes in Depression Level	120
13. Depression Scores for Males and Females by Changes in Dysfunctional Attitude Endorsement	121
14. Cross-Lagged and Other Correlations Between Depressogenic Attitudes and Affect	124
15. First-Order Partial Correlations Between Attitudes and Affect for Cross-Lagged Relationships	126

LIST OF TABLES (cont.)

	Page
16. First-Order Partial Correlations for Depressed and Nondepressed Groups	129
17. DAS Scores by Levels of Depression as Measured by the BDI: One-Way ANOVA	131
18. DAS Scores by Levels of Depression as Measured by the POMS D-Scale: One-Way ANOVA	133

LIST OF FIGURES

	Page
1. The 100 DAS Items Plotted as a Function of the Factor I Loading and Mean Score	63
2. Design of the Research	91
3. Cross-Lagged Panel Correlation Paradigm	99

CHAPTER I

Introduction

Statement of the Problem

The subject of depression has puzzled and mystified people and, in general, has been an area of controversy for over 2,000 years. Yet in spite of the numerous theoretical papers regarding its etiology and psychopathology, there is a dearth of systematic studies aimed at testing hypotheses generated by the various theories. One reason for this may be that the earlier views, such as Freud's formulation of an internalized struggle between superego and ego, are too remote from observables in clinical material to be reduced to operational terms for testing.

During the last decade and a half, Beck (1967) has attempted to stipulate certain characteristics that appear to be at the core of the depressive constellation and which are also testable. In the early 1960's, Beck (1961, 1963, 1964, 1967) conducted a series of studies of clinical depression which led to the development of a cognitive formulation of depressive symptomatology and an approach to the treatment of depression that dealt primarily with cognitive factors. He postulated a "cognitive triad," consisting of a negative conception of the self, of the external world, and of the future as central to the depressive constellation. This view has received some support from a series of systematic investigations (Beck & Hurvich, 1959; Beck, 1961; Beck & Ward,

1961). Recently, Beck (1970, 1972, 1974, 1976) has theorized that emotions in general may follow from the meanings attributed to events and that emotional disturbances result when events are given distorted interpretations. He hypothesized further that many forms of psychopathology -- such as anxiety, phobias, obsessions, as well as depression -- may be associated with characteristic cognitive distortions and that these disturbances will respond to therapy aimed at the correction of these distortions. A depressed person, then, may be helped by changing his errors in thinking, i.e., his dysfunctional attitudes, rather than by concentrating on his depressed mood.

While conducting research with Aaron T. Beck, I realized that the lack of an objective method to quantify the relative presence or absence of these cognitive distortions was a basic limitation affecting efforts to test empirically the hypotheses inherent in this type of therapy. If reliable and valid means for measurement were available, a number of additional avenues for research dealing with the formal thought processes in depression would be opened. The primary purpose, therefore, of this study was to design a written instrument aimed at identifying the common assumptions underlying the typical idiosyncratic cognitions of depressed individuals, as espoused within Beck's approach. A second-

level goal of this research was to determine the relationship between these attitudes and depressive tendency.

The Cognitive View of Emotions

Within the clinical realm, analysis of phenomena from a cognitive information-based perspective is not new (cf. Kelly, 1955; Rotter, Chance, & Phares, 1972); yet recent years have witnessed increasing emphasis on refining and operationalizing a "cognitive learning" approach (e.g., Bandura, 1969; Estes, 1971; Staats, 1972). In addition, a rapidly accumulating body of evidence and considerable speculation suggest that this convergence toward a cognitive-behavioral perspective holds substantial clinical promise (Bergin, 1970; D'Zurilla & Goldfried, 1971; Goldfried, Decenteceo & Weinberg, 1974; Lazarus, 1967, 1971, 1976; Mahoney, 1974; Meichenbaum, 1972; Ullman, 1970). Arieti (1968), a psychoanalyst, has called cognition the "Cinderella" of the field of psychiatry. He emphasized that "a great deal of human life has to do with conceptual constructs. It is impossible to understand the human being without such important cognitive constructs as the self-image, self-esteem, self-identity, identification, hope, or projection of the self into the future" (p. 1637).

Until recently, researchers and therapists have regarded affective and cognitive development as relatively independent

of one another. According to Singer (1973), however, the intimate relation between affect and cognition is rooted in the infant's early efforts at accommodating to its novel and everchanging environment. He assumes, with Tomkins (1962), and Izard (1971), that environmental novelty activates the interest affect, which in turn sustains efforts at exploration and accommodation. Mastery or successful accommodation reduces excitement and activates joy, whereas a complex mass of unassimilable material may produce startle, distress, or fear. Thus, affective and cognitive processes are intertwined from the very beginning of life. As man interacts further with his environment, an elaborate set of cognitive functions emerge which enable him to achieve greater control over his feelings, actions, and environments. Man's ability to appraise, to interpret, and to ascribe evaluative labels to his behavior and/or his feelings gives, in large measure, meaning to his affective-behavioral states.

Rensberger (1977), reporting for the New York Times, summarizes the cognitive position as follows:

"Freud got it the wrong way around, some psychiatrists are now asserting. Emotional disorders do not cause people to think in bizarre, illogical patterns typical of mental illness. Rather, it is illogical or otherwise defective thinking patterns that cause emotional or behavioral problems." (p. A21)

Just as Freud's momentous discovery consisted of revealing the unconscious processes in a person's affective life, the affective-unconscious, so now we must go below the surface and reveal the

unconscious processes in a person's cognitive life, what we may call the cognitive-unconscious (Weiner, 1975). Fairly conclusive evidence is now available that a person's attitude toward any object can be seen as a function of his beliefs about the object and the evaluative aspects of those beliefs (Fishbein, 1967). Several contemporary theories treat emotion in essentially this same way; i.e., as response or as a complex of responses determined by cognitive processes. These recent theories seem to have stemmed from pervasive ideas about human nature which can be traced through Aristotle, Thomas Aquinas, Diderot, Kant, and other philosophers such as Epictetus, who in the first century A.D. wrote in The Enchiridion, "Men are disturbed not by things, but by the view which they take of them." The major ideas inherent in these approaches are: (1) Man is first and foremost a rational being; (2) Rationality is basically good, emotionality basically bad; (3) Reason (cognitive processes) should be used as a control and as a substitute for emotion (Izard, 1977).

The classic theory in the field of emotions is the formulation of William James (1884), that "... bodily changes follow directly the perception of the exciting fact, and our feelings of the same changes as they occur is the emotion." In this assertion James (1884) avoids assuming that cognition intervenes between the object stimulus and the bodily response. But this stimulus-response theory is expressed in terms of the following sequence: object to

perception of object to bodily state to feeling of bodily state. Both the perception of the object and the awareness of the feeling involve cognitive states and assessments. Perception is never direct but always interpreted in terms of one's prior learning, beliefs, language, and assessments. Even sensation may be modified by cognitions. The theory, therefore, presents more than a behavioral stimulus and a behavioral response and is really a "covert cognitive" theory of emotions (Shibles, 1974).

George A. Kelly (1955) thought of emotion as behavior that is either loosely defined or not a word-bound construction. His theory postulates that each individual has available a number of personal constructs for cognizing and perceiving events. The foundations of Kelly's theory are summarized by the statement that "A person's processes are psychologically channelized by the ways in which he anticipates events" (Kelly, 1955). This personal construct psychology emphasizes the individuality of a person's system of construing events. The salience of a construct dimension in a person's system is determined by its utility in anticipating behavior or events and thus it has a direct association with behavioral prediction. How we "feel" may be the other side of how we "know."

Ellis (1962) theorizes that emotions and self-evaluative thoughts are virtually one and the same thing. Emotion is not the opposite of thinking. Rather it is partially comprised of

thinking or reason. What we call "emotion" seems to include mainly: (1) A certain kind of forceful thinking -- a kind strongly slanted or biased by previous perceptions or experiences; (2) Intense bodily responses, such as feelings of pleasure or nausea; (3) Tendencies toward positive or negative action in regard to the events that seem to cause the strong thinking and its emotional concomitants (Ellis & Harper, 1975). Emotions differ from feelings in involving more cognition. For Ellis, without cognition or self-talk there would be few emotions, since emotion implies reason.

Arnold (1960, 1968), in support of Ellis, characterizes an emotion as a felt tendency toward an object (behavioral-motoric component) judged suitable or unsuitable (cognitive component), and reinforced by specific bodily changes according to the type of affect (physiological-bodily component). The emotion proper is the nonrational attraction or repulsion that follows upon the appraisal of something as good or bad for the perceiver. Ellis and Arnold's views are consistent with social-psychological definitions of attitude. Attitude also is considered a tendency to evaluate an object or symbol in a certain way (Katz & Stotland, 1959), with an affective as well as a predispositional response or behavioral component (Lott, 1973). Specifically, Ellis maintains that certain individuals tend to think irrationally and that these

irrational beliefs produce various forms of emotional upset. As seen from a social-learning viewpoint, these irrational views take on the status of a persistent and well-learned set with which certain individuals approach life situations. As suggested by Dollard and Miller (1950), our early social learning experiences teach us to label situations in varying ways. Emotional reactivity may result at times from the label attached to certain events, not the situation that is labeled.

The patient's private world has not been regarded as a useful area of inquiry to the behaviorists (Watson, 1914; Skinner, 1971). This is because thoughts, feelings, and ideas that are accessible only to the person experiencing them are not valid data for these theorists; only behavior that can be directly observed by an independent outsider is used in explanation. However, research in behavior therapy techniques has highlighted the fact that environmental events per se, although important, are not of primary importance; rather what the client says to himself about those events influences his behavior (e.g., Mahoney, 1974; Meichenbaum, 1974; Steiner, 1970). Recently, it has been hypothesized that, in humans, conditioning does not occur automatically and is in fact cognitively mediated (Bandura, 1974; Brewer, 1974). To account for behavior solely in terms of external rewards and punishments overlooks the fact that human beings can be rewarded and punished by their own thinking,

"even when this thinking is largely divorced from outside reinforcements and penalties" (Ellis, 1962). Lazarus, Averill, and Opton (1970) expanded this view by stating, "The individual ... cognitively filters stimulus information, and the resulting appraisal determines whether the situation is evaluated as relevant, threatening, frustrating, etc." They add that cognitive processes "create the emotional response" and shape it into recognizable affect. This recent development of cognitive theories within the ranks of behavior therapy has to be classified as one of the more intriguing developments in contemporary clinical psychology. Adler (1964) summarizes this cognitive approach to emotions when he said:

"In a word, I am convinced that a person's behavior springs from his ideas ... It is very obvious that we are influenced not by 'facts' but by our interpretation of facts ... Everyone possesses an 'idea' about himself and the problems of life - a life-pattern, a law or movement - that keeps fast hold of him without his understanding it, without his being able to give any account of it." (pp. 19, 26-27)

The Evaluation of the Concept of Depression

As a distinct and distressing state in man, depression was known at least as early as 1500 years before Christ. In the Old Testament's Book of Job we have what is essentially a self-reporting inventory of a classical clinical depression. Consequently, we have a condition that has prevailed at least since Biblical times. Yet, in spite of all of our scientific efforts,

to this day no agreement exists as to diagnosis, epidemiology, classification, causes or effective therapies for this "illness" (Fieve, 1971).

The condition that today we label "depression" has been described by a number of ancient writers under the classification of "melancholia." In 400 B.C. Hippocrates rendered the first clinical description of melancholia when he observed depression in women and labeled it hysteria because he felt its source was the uterus ("hyster" in Greek). Later this bleak mood became known as melancholia after the black bile secreted by the gall bladder, thought to be the provoker of sadness. Opposed to melancholia were excitements, designated by the term "mania," and explained by the influence of yellow bile. Two centuries later, the Greek writer Aretaeus ascribed melancholia to flatulence or anger, grief and dejection. He linked some depression to manic states and noted that logical thought processes were not impaired in depression (Becker, 1974). Furthermore, the cardinal signs and symptoms used today in diagnosing depression were found in most of these ancient descriptions: disturbed mood, self-castigations, self-debasing behavior, wish to die, physical and vegetative symptoms, and delusions of having committed unpardonable sins (Beck, 1967). The field did not advance beyond this 19th century phenomenology until Kraepelin (1913) presented

the first schematic classification of all psychiatric illnesses. Despite his narrow focus on prognosis as the essential criterion for categorization, Kraepelin's (1913) attempt proved to be most successful.

In the early part of this century, Freud and his co-workers emphasized the significance of psychodynamics in personality development and in the expression of psychopathological symptoms. Enlarging on an insight of his disciple, Karl Abraham, Freud (1917) in his classic paper, Mourning and Melancholia, played an extraordinary significant role in contributing to the psychodynamic understanding of depression. He considered depressive illness not only from the point of view of a reaction to life situations but also from the standpoint of the intrapersonal or intrapsychic events that constituted this reaction. Freud assumed that a particular behavior has its roots in the unconscious and that any irrationalities observed on the conscious level are only manifestations of the underlying unconscious drives. In general, according to this psychoanalytical orientation, depression represented the introjection of hostility resulting from the loss of an ambivalently loved object (Abraham, 1911; Freud, 1917) or a reaction to separation from a significant object of attachment (Spitz, 1942; Klein, 1945; Robertson & Bowlby, 1952; Bowlby, 1960).

More recent reformulations of the original psychoanalytical model have concentrated on object loss and its consequence on the ego. Bibring (1953) emphasized a loss of self-esteem as the crucial element in depression. His views contrasted with those of the earlier psychoanalytic theorists in that he placed more emphasis on ego psychology (conscious response to events) than on unconscious conflicts between ego and superego (Mendels, 1970). According to Bibring (1953), the basic mechanism of depression is " ... the ego's shocking awareness of its helplessness in regard to its aspirations" (p. 39). Depression supervenes when the ego is cognizant of its goal and simultaneously aware of its helplessness to attain it. The ego suffers a narcissistic injury and collapse in self-esteem. Depression then appears when one cannot live up to one's ego ideals.

The ego-psychological approach is carried to its fullest implications in Beck's (1967) cognitive model of depression, which emphasizes another intrapersonal component of depression. The vicissitudes of self-esteem in depressive illness are considered from a perspective that conceptualizes depression in a new and provocative way (Mendelson, 1975). Generally, the thought disorder that depressed patients manifest has been considered to be a consequence of a basic disturbance in mood. However, Beck (1967) has suggested that it is a primary disturbance in thinking that causes the development of the disturbed mood state. He

proposed "that the typical depressive affects are evoked by the erroneous conceptualizations." An altered style of cognition, characterized by negative expectations, is said to be the basis of depressive mood states. Beck thus sees these intrapersonal distorted cognitions as playing an etiological role in what has been generally thought of as an affective disorder.

"This notion of the primacy of affect over cognition in psychopathology presents an interesting paradox: for normal subjects, the conceptualization of a situation determines the affective state, but in psychopathology, the affective state determines the cognition.

On the basis of clinical observations and subsequent research, this author has postulated that in abnormal conditions such as depression and anxiety the direction of the reaction is from cognition to affect, just as it is in normal responses (Beck, 1963). The difference between normal and abnormal reactions lies in the degree of correspondence between the conceptualization and the veridical stimulus configuration. In psychopathological states perseverative faulty conceptualization leads to excessive or inappropriate affective disturbance." (Beck, 1971)

Learning-theory approaches to the analysis of depression were hinted at by Skinner (1953) when he described depression as a general weakening of the response repertoire of an organism, a weakening presumably brought about by extinctions. In general, the behaviorist views depression as a set of maladaptive behavioral responses which are elicited by uncontrollable aversive stimuli or by loss of reinforcement, and additionally maintained by the rewards of the "sick role" (Lewinsohn, 1974;

Seligman, 1974; Ferster, 1965; Lazarus, 1968). However, it was not until Seligman and his associates (Seligman & Maier, 1967; Seligman, Maier & Geer, 1968) began their experimental work, connecting the powerless aspects of dependency and depression, that the learning-theory approach gained impetus. They showed that dogs receiving a large number of inescapable electric shocks ultimately learned to become passive and accept the electric shock in apparent helplessness. These animals, once having learned that their behavior was useless in one experimental situation, gave up without exploring alternatives in a new experimental situation where their behavior could have had an effect. Seligman's model may be useful in conceptualizing the type of affect-cognition-action sequence that leads to what a number of other theorists (e.g., Bibring, 1968; Beck, 1967) have recognized as symptoms of depression, i.e., feelings of hopelessness or helplessness. Learned helplessness is not only a stimulus-specific behavioral state; it may well represent an induced trait, the expectation that one's efforts are generally futile. After drawing a number of parallels between the characteristics of "learned helplessness" and depression, Seligman (1968) suggested that successful therapy occurs when the patient believes that his responses produce gratification, that he is an effective human being.

Attempts at reconciling these diverse theoretical positions have been sporadic and incomplete. Psychodynamic explanations of psychopathology weight early experience factors more heavily, whereas behavioral explanations stress current situational determinants more heavily. Cognitive approaches to psychopathology, however, may prove to be useful integrators of these disparities. A greater emphasis on the individual's descriptions of internal events can lead to a more complete view of human psychopathology and the mechanisms of behavioral change. By using introspective data, the cognitive theorist has access to the patient's thoughts, ideas, attitudes, dreams, and daydreams. These ideational productions provide the cognitive theorist with the raw materials with which he can form concepts and models (Beck, 1970). It is important, however, for the therapist to distinguish among symptom, technique, and underlying attitudes. For example, the symptom may be affective, such as crying spells, sadness, loss of gratification, loss of sense of humor, apathy. The therapeutic approach may be behavioral, for example, mobilizing the patient into more activity and positively reinforcing certain types of activity. The underlying attitude, however, is the component that needs to be changed ultimately if the totality of the depression, for example, is to be influenced. Thus, the goal is cognitive modification (Beck, 1976).

Definition of Depression

Despite the fact that research dealing with depression has increased quantitatively, investigations into the causes of this condition continue to remain unsolved. A major reason for this slow progress stems from the fact that the term "depression" is used in many ways: To describe a normal mood state (e.g., grief); a symptom (e.g., sadness that is seen in many psychiatric disorders); a syndrome (characterized by dejection, hopelessness, psychomotor retardation, etc.); a disease; an illness; or any combination of these. Furthermore, different schools of thought use dissimilar dialects, thereby hindering communication to an even greater extent. Friedman (1974), in an attempt to present a schematic way of viewing "depression" has proposed that the term be employed in three ways: As an affect, as a clinical state, and as a character style. Within this framework, the concentration of this paper is on depression as defined by the first two classifications of this tripartite division:

1. To refer to a basic feeling of sadness which is a part of the fabric of life and which is noted in states of grief and periods of disappointment (i.e., the affect of depression), and,

2. To refer to a complex of symptoms, including the affect of depression, but also other affects such as anxiety or guilt, and motivational, vegetative, and cognitive disturbances (i.e., the clinical depressive state).

In previous studies by Beck (1961, 1963, 1964, 1967), depression has been defined in this way, as a psychopathological dimension rather than as a discrete nosological entity. This concept of depression should be distinguished from the use of the term to designate specific diagnostic categories, such as "neurotic depressive reaction" or "manic depressive reaction," which are frequently considered to have a specific onset, course, prognosis, and etiology. As a psychopathological dimension, depression may be observed in association with other psychopathological states such as "schizophrenic reaction" or "anxiety reaction," as well as in cases receiving a primary diagnosis of depression (Loeb, Beck, & Diggory, 1971). Viewed in this way, depression is identifiable in many diverse types of patients.

Beck's Cognitive Theory of Depression

A promising strategy in the exploration of both psychopathology and normal functioning is the study of an individual's cognitions -- the person's manner of perceiving, construing, anticipating and evaluating events, behaviors and their consequences (Kelly, 1955; Mischel, 1973; Mahoney, 1974). While cognitive theories have been postulated (Ellis, 1962; Lazarus, Averill, & Opton, 1970; Meichenbaum, 1976), these theorists attempt to account for the development of emotional responses and affective disturbance in general. The most precise delineation of a theory focusing upon the relationship between cognition and depressive affect occurs

in the writing of Beck (1963, 1964, 1967, 1974, 1976). In contrast to many historical and popular views, Beck's (1967) thesis is that, "The affective response is determined by the way an individual structures his experience." Rejecting the notion that man is governed by powerful unconscious forces over which he frequently has little control, Beck locates the basic problem of emotional disturbances in man's misconceptions about himself, his irrational beliefs and faulty assumptions about reality. Depressive affect and behaviors are considered secondary manifestations of depressed cognitions; depression is seen as a thought disorder.

Although Arnold (1960), experimental psychologists such as Richard Lazarus (1966), and clinicians such as Albert Ellis (1962), have clearly marked the association between thinking and emotion, they have not delineated the particular kinds of appraisals that lead to specific emotions. In fact, the vast literature in personality and social psychology hardly touches on the question of what ideational content in response to a noxious stimulus or a threat produces sadness, anxiety, or anger. Granting that the initial appraisal may be a global "bad for me," Beck (1976) claims that the individual's unique interpretation of the noxious stimulus determines his emotional response. Beck's theory delineates the idiosyncratic content of cognitions relevant to specific clinical syndromes, whereas Ellis offers a more general

hypothesis about the predominance of irrational self-talk as a reflection of neurotic behavior and thinking.

By analyzing recorded interview materials of depressed and nondepressed patients in psychotherapy, Beck (1963, 1964) found that depressed patients tended to distort their experiences in an idiosyncratic way; that is, they misinterpreted specific irrelevant events in terms of personal failure, deprivation, or rejection, or they tended to greatly exaggerate or over-generalize events that bore any semblance of negative information about themselves. From this, Beck theorized that "certain cognitive schemas become prepotent during depression, dominate the thought processes and lead to cognitive distortions" (Beck, 1964). Furthermore, Beck believes these cognitions (i.e., any mental activity that has verbal content) to be automatic and involuntary and to seem plausible to the patient. The meaning that an individual attaches to an object or a situation affects how he feels. In other words, the depressed person feels sad and lonely, for example, because he erroneously thinks he is inadequate and deserted. His thinking may appear as highly irrational, but it makes sense within the patient's conceptual framework. The relationship between cognition and affect or emotion is based largely on prior learning and association. One's irrationality leads to one's emotional problems. This is demonstrated by the philosophy espoused by

the character, Don Juan:

"The world is such and such or so-and-so only because we tell ourselves that that is the way it is ... You talk to yourself. You're not unique at that. Everyone of us does that. We carry on internal talk ... In fact we maintain our world with our internal talk." (Casteneda, 1972)

Beck (1967) assigns primary etiological importance to an altered style of cognition characterized by three negative views: of the self, of the environment, and of the future. This negative "cognitive triad" presumably results in and accounts for other manifestations of depression -- such as a lack of motivation, low activity level, dysphoria, etc. In this view, depressives' cognitions lead to the misinterpretation of experiences and subsequently to other responses that are logical consequences of such misinterpretations. Maladaptive behaviors are emitted which are consistent with the cognitions of the depressives who are thus locked into an internally consistent, self-fulfilling cycle.

The three cognitive constructions referred to as the "cognitive triad" are:

1. The view of self. The depressed patient's cognitive schemas that relate to self-assessment consist of seeing himself as deficient, inadequate, or unworthy. He will often attribute his unpleasant feelings and experiences to some kind of physical,

mental, or moral defect within himself. He will then consider himself worthless because of his presumed defects and will "reject" himself.

2. The view of the world. The depressed person tends to see his world as making exorbitant demands on him and as presenting obstacles that cannot be surmounted. He interprets his interactions with his environment in terms of defeat and failure, deprivation, or disparagement.

3. The view of the future. The depressed person's negative cognitive patterns relating to the future become evident in his view that his current difficulties or suffering will continue indefinitely. Thus, he anticipates unremitting hardship, continued frustration, and never-ending deprivation. Such schemas essentially amount to a pervasive, hopeless attitude.

The hallmark of the cognitive triad is that the negative evaluations comprise unrealistic, distorted, and illogical ways of thinking, which do not correspond to reality. It is as though the depressed individual has been born with eyes that see only with great distortions but give the illusion of seeing sharply and clearly. These distorted and illogical ways of thinking are manifested in the depressed person's tendencies to make extravagant use of the following processes: Exaggeration or misinterpretation of events; the making of extreme, absolute judgments when certain situations occur; overgeneralizations from a single

incident; focusing on one particular detail out of context and ignoring the more salient features of a situation; drawing inferences in the absence of, or even contrary to evidence; and extracting personally relevant meanings from unpleasant situations.

This view represents a radical departure from psychodynamic theories of affective disorders in that it emphasizes the role that disturbances in thinking play in determining emotional states (Beck, 1971). The cognitive approach to depression and psychopathology does not assume that a well-adjusted individual necessarily thinks logically and solves problems correctly (Beck, 1967). What is assumed is that, to understand and correct maladaptive behavior, the idiosyncratic meaning that people ascribe to their experiences must be uncovered (Kovacs & Beck, 1978). These cognitions are termed "idiosyncratic" because they reflect a faulty appraisal, ranging from a mild distortion to a complete misinterpretation, and because they fall into a pattern that is peculiar to a particular psychopathological state. The focus of therapy is on altering or removing those idiosyncratic evaluations that are dysfunctional or maladaptive, with the expectation that the remaining symptoms and behaviors characteristic of depression will be alleviated. An important factor in treatment when trying to change misconceptions is the

emphasis on insight, a cognitive process consisting of identifying thoughts, feelings, and wishes and making psychological connections among them (Beck, 1976).

The Concept of Schemas

How does an individual form the concepts that predispose him to depression? Early in life, a child develops many attitudes about himself and his surroundings. Some of these concepts are realistic and facilitate healthy adjustments, while others deviate from reality and make the individual vulnerable to possible psychological disorders. These relatively abstract and generalizable rules regarding certain regularities in the relationships among events are called "schemas." According to Beck (1964) schemas are conceived as relatively stable cognitive structures (in contrast to a cognitive process, which is transient), which channel thought processes, irrespective of whether or not these are stimulated by the immediate environmental situation. When a particular set of stimuli impinge on the individual, a schema relevant to these stimuli is activated. The schema abstracts and molds the raw data into thoughts or cognitions. Once established, the schemas serve as a guide to behavior and as a framework that influences the way in which relevant new information will be assimilated. Beck (1967, p. 288) said, "It is postulated that the schema determines the specific type of

affective response. If the schema is concerned with self-depreciation, a feeling of sadness will be associated with it ... An analogous relationship between the content of the schema and the corresponding feeling holds for the other affects." Eventually, a single association may call up an entirely negative (or positive) experience response. Beck (1971) has described this process as follows:

"These schemas may remain latent for many years but, activated under certain stressful conditions, supersede more realistic concepts. The indiscriminate and repetitive application of these idiosyncratic schemas leads to a continual affective arousal. The 'snowballing' phenomena observed in these conditions can be understood in terms of a feedback model. The affective responses to the cognitive distortions are in turn processed by the idiosyncratic cognitive systems and lead to further idiosyncratic cognitions. Thus, a continuous cycling of cognition - affect - cognition is established."

When viewed in this sense, "schema" certainly constitute a Kantian notion: We sense the world in terms of our categories. There is no sensation without cognition and no cognition without sensation. One might also say there is no emotion without cognition and sensation because, in the assessment view, emotion comprises both.

The process of "constructing" involves: first, hypothesis generation; second, testing of these hypotheses; third, feedback

from these tests; and finally, reformulation or adjustment of the original hypotheses. The individual must conceptualize the world in a structural framework, however primitive it may be, before he can react to it and within it. This acceptance of an internal unit (a cognition, a plan, a mediator, a schema) as what is learned provides a different orientation to the field.

In depression, specific idiosyncratic schemas assume a dominant role in directing the thought processes. Though the schemas may be latent during the nondepressed period, they are activated by particular kinds of circumstances and become progressively more potent as the depression develops. Circumstances are not expected to produce a depression unless the person in question is particularly sensitive to the situation because of his specific predepressive constellation. Whereas the average person might experience such a trauma and still be able to maintain interest in other aspects of his life, the depression-prone person experiences such a constriction of his cognitive field that he experiences negative ideas about every aspect of his life. The phenomenology of normal and pathological moods may overlap considerably. Most moods entail poorer discrimination between subjective and objective reality. But in normal moods the individual has greater awareness of what events have induced the mood and better

recognition that changed perceptions are temporary effects of the mood. Moreover, qualitative and quantitative aspects of the mood are more appropriate to the mood-eliciting events. Events that are incompatible with the mood are perceived and responded to more realistically, which may lead to a shift or termination of the mood. By contrast, pathological moods are less appropriate to reality in relation to all of the factors (Becker, 1974). In psychopathological conditions, the reaction to the stimulus situation is determined to a much greater extent by internal processes which distort the stimulus situation. The increased frequency and degree of cognitive distortions as the depression develops may be attributed to the progressive dominance of the idiosyncratic schemas. Normally, the cognition resulting from the interaction of the schema with the stimuli is expected to be a reasonably accurate (veridical) representation of reality (Piaget, 1947). However, as these idiosyncratic schemas become more active, they are capable of being evoked by stimuli that are less congruent with them. Now, instead of a schema's being selected to "fit" the external details, the details are selectively extracted and molded to "fit" the schema. The result is inevitably a distortion of reality.

When the idiosyncratic schemas are especially active as in severe depressions, particular items congruent with the depressive schemas are selected from the stored material. These items then form part of the typical depressive sequences of associations and

ruminations. According to Beck (1971):

"The model for affect instigation is based on certain assumptions. First, irrespective of the veridical properties of a stimulus situation, an individual's reaction to the situation depends upon his appraisal (or conceptualization) of the situation. Crucial properties of the stimulus are its connotations, meanings, and significance for the perceiver.

Second, the cognitive content or meaning is chained to a particular affect. As the cognitive content changes, the affect changes in consonance with it. Affect-producing ideation may occur in response to a specific external stimulus or may occur in a sequence of associations in the 'stream of consciousness.' The affect is congruent with the cognitions.

During the course of a person's development, a particular cognitive content may establish a pathway to a specific affect. Some of these cognition-affect chains appear to be universal. Others are idiosyncratic for a particular society or a specific individual."

A cycle is formed wherein each negative judgment reinforces the negative self-concept, which in turn facilitates a negative interpretation of subsequent experiences. In the terminology of formal logic, the schema equals the major premise; the external event equals the minor premise; the cognition equals the conclusion, the affect follows from the conclusion. If this major premise is invalid, then the conclusion will be invalid, even though the logical operations may be flawless. By observing a recurrent erroneous conclusion, then, one can infer the content of the idiosyncratic schema. Thus, schemas may be thought of largely as statements that we make to ourselves

and to others. To understand a depressed individual then, we need to get inside his conceptual system and see the world through his eyes. Beck (1976) gives the following example:

"An instructor, in a casual way, told two students (Miss A and Miss B), who were carrying on a side conversation in his seminar, 'If you have anything to say, share it with the rest of us or else be quiet.' Miss A responded angrily that she had simply been trying to clarify a point." (p. 43)

In this example, the major premise (schema or attitude) when stated as a rule is: "All corrections by a person in authority are criticisms." The minor premise (external event) is: "The teacher is correcting me." Miss A concludes, "Therefore, the teacher is criticizing me." Her emotional response was anger. Miss A doesn't actually state the initial premise to herself; however, it is already a part of her cognitive organization. Whether or not she has a concrete thought about the situation, she is aware of the conclusion.

The depressed patient also shows certain patterns of illogical thought. These systematic "errors" of thinking, which lead to distortions of reality, can be categorized according to the ways in which they deviate from logical or realistic thinking. These illogical processes, typical of depressed individuals within Beck's (1967) approach, include:

1. Arbitrary inference: The process of drawing a conclusion when there is no evidence to support the conclusion or when the evidence is contrary to the conclusion.

2. Selective abstraction: The process of focusing on a detail taken out of context, ignoring other more salient features of the situation, and conceptualizing the whole experience on the basis of this element.

3. Overgeneralization: The pattern of drawing a general conclusion on the basis of a single incident.

4. Magnification or minimization: Errors in evaluation that are so gross as to constitute distortion.

5. Personalization: The patient's proclivity to relate external events to himself when there is no basis for making such a connection.

6. Dichotomous Reasoning: Overly rigid and simplified perception of events as good or bad, right or wrong, etc.

Empirical Findings

Unfortunately, evidence in support of Beck's formulations has been largely anecdotal or indirect (Beck, 1967; 1970; 1971). However, some studies have explored the experimental manipulation of other variables relevant to depression. Loeb, Feshbach, Beck, & Wolf (1964) randomly assigned a group of depressed and non-depressed patients (determined by scores on the Beck Depression Inventory) to an experimentally-induced superior and inferior performance condition. Prior to and immediately following the experimental task, the patients rated their own moods. Results showed that the psychiatric patients in the superior performance group were more self-confident, rated themselves happier, and

perceived others as happier than did patients in the inferior performance group. Depressed patients were more sensitive to task performance than nondepressed patients in estimating how they would do in a future task. The depressed patients also showed greater changes in self-ratings of their mood with task performance.

In a subsequent study by Loeb, Beck, & Diggory (1971), depressed patients (determined by a dual criterion, score on the Beck Depression Inventory and an independent psychiatric rating) were found to be significantly more pessimistic about their performance than were a matched control group of nondepressed patients. However, the depressed patients performed as well as the control group. On a second task in this manipulation, the previous experience of "success" (defined by sorting 20 cards in any of seven trials) or "failure" had different effects on the actual performance of the two groups: Success improved the performance of the depressed group, whereas failure improved the performance of the nondepressed group. Friedman (1964) also demonstrated that, when given cognitive tasks to perform, even the most regressed depressed patients do as well as nondepressed controls, despite their severe feelings of incapacity. He interprets this finding as being in accord with Bibring's (1953) theoretical conception of depression as an ego phenomenon, involving lowered self-esteem and subjective feelings of helplessness and hopelessness.

Hammen and Krantz (1976) reported the results of a study comparing the changes in self-ratings of depressed and non-depressed females as a function of feedback on a performance task. The depressed subjects (determined by scores on two measures of depressed mood) were found to evaluate their personal qualities significantly more negatively than the nondepressed subjects. In response to an experimental manipulation (i.e., positive feedback about their performance, negative feedback, or no feedback), the depressed subjects typically demonstrated strongly negative reactions to failure as compared with the neutral condition. The depressed subjects became more pessimistic in the prediction of their future performance following the negative feedback.

Hammen and Glass (1975) found that inducing depressed college students to increased participation in enjoying (reinforcing) activities did not necessarily reduce their depression. Rather, the relation between mood and reinforcement may depend to an important extent on cognitive factors, because the data suggested that depressed subjects who increased their activities tended to evaluate them more negatively than other subjects. This finding seems contrary to that of Lewinsohn and his colleagues (Lewinsohn, 1974; Lewinsohn & Graf, 1973; Lewinsohn & Libet, 1972), who postulated that depression results from a reduction in

positive reinforcement. It is, however, in agreement with Beck (1963), who believes that depressed mood and its attendant cognitions result in reductions in reinforcing activities rather than the reverse association.

Velten (1968) used a group of statements designed to be "depressing" and controlled for the subjects' pretreatment mood level and suggestibility. He found that depressed mood in female college students was induced by the depressing statements. Weintraub, Segal, & Beck (1974) also found a time-specific relationship between cognition and mood, i.e., male undergraduates who thought more negatively felt more "depressed." They further stated that "the negative attitudinal set, rather than depressed affect, may be the primary factor in depression." This result is also in agreement with Hammen and Krantz's (1976) finding that depressed persons tend to systematically select dysfunctional cognitions that maintain if not enhance depression and hopelessness.

These research findings suggest new approaches for treating depression and new ways in which the depressed person can learn to help himself. As a result of these studies, some psychotherapists are now concerned with the kinds of statements that people make to themselves or with which they "think." One such new approach, based on Beck's assumptions, is called "cognitive-behavioral therapy;" it suggests that the individual's problems

are derived largely from certain distortions of reality based on erroneous premises and assumptions. These incorrect conceptions have originated in defective learning during the individual's cognitive development. Man can learn erroneous, self-defeating notions, and he is capable of unlearning or correcting them as well. Regardless of the origin of these notions, the formula for treating them is simple: The therapist helps the patient to unravel his distortions in thinking and to learn alternative, more realistic ways to formulate his experiences.

Of particular significance to this basic question of how undesirable affect can be served from cognition is the widely-known work of Schachter and his colleagues. Schachter's (1964, 1966) research supports the contention that the emotional content of a reaction can be modified or eliminated if the cognitions related to the emotional reaction are changed. Such a contention presupposes that emotional experiences always include cognitive aspects. Three propositions constitute the essence of Schachter's (1971) approach:

1. Given a state of physiological arousal for which an individual has no immediate explanation, he will "label" this state and describe his feelings in terms of the cognitions available to him ...

2. Given a state of physiological arousal for which an individual has a completely appropriate explanation ..., no

evaluative needs will arise and the individual is unlikely to label his feelings in terms of [any] alternative cognitions available ...

3. Given the same cognitive circumstances, the individual will react emotionally or describe his feelings as emotions only to the extent that he experiences a state of physiological arousal.

In other words, both physiological arousal and cognitive evaluation are necessary, but neither is a sufficient condition for the production of emotional states (Mandler, 1975). This two-factor theory of emotions, although not fully explaining the link between negative cognitions and depressive affect, suggests that affective experience is a joint product of cognitive labeling and physiological arousal.

In an early experiment, Schachter and Singer (1962) injected students with adrenaline and asked them to report their experiences. Seventy-one percent reported having certain physical sensations, the rest described "as-if" emotions; e.g., "I feel as if I were afraid." The researchers found that the cognition that one has and the kind of linguistic labeling that one does determines which emotion is experienced. Subjects who were aware that the cause of their arousal was adrenaline reported no emotions. The same physiological arousal may be experienced as joy or as anger (or as any other emotion), depending on the cognitions available

in the situation. The data suggest that if a state of physiological arousal is induced, and if the individual has no immediate explanation for it, he will then label his state in terms of the environmental-cognitive information available at the time. Conversely, if the state of physiological arousal is completely explained in terms of antecedents, such as an injection, then the individual will not use other environmental-cognitive information to label his internal state (Mandler, 1975). The conclusion is that an emotion is neither a physiological event determined by factors under the skin nor is it determined by environmental events impinging upon the person. Rather, it is the result of a complex evaluation of internal and external pieces of information and is particularly affected by a person's attributions of the causality, intent, and extent of these factors.

The relative independence of physiological and cognitive factors demonstrated by these experiments is somewhat overshadowed by the necessary artificiality of the experimental situation, as physiological arousal is rarely artificially induced, but, instead, caused by environmental events. Schachter's thesis can be applied to a depressed state as follows: If a person suffers a loss, he will become emotionally aroused and will scan his environment for cues. Then, when he notices that he has suffered this loss, he will interpret the loss as the cause of the dysphoria. This circular approach reflects the limitations of this particular

experimental design when it is applied to a natural state. However, Schachter and his colleagues' interests lay in the relation between certain artificially induced states of physical arousal and cognition.

This approach assumes that there exists a close relationship between the affective and cognitive organizations in the person. The obvious implication for the psychotherapist is that, if his clients can be induced to perceive differently situations that produce disruptive feelings or emotions, he can alter their affect in a therapeutic fashion. In other words, the bonds between cognition and a given maladaptive emotion or feeling can be severed if the cognition is changed (Arnold, 1968). If the meaning of what is perceived determines the emotion experienced, and if the therapist can help the client to change his perception or understanding of the significant events in an emotion-provoking situation, then the affective response will also be changed. Likewise, Beck has suggested that one can get to the emotional disorder through the person's thinking. The individual's reports of his ideas, feelings, and wishes provide the raw materials for the cognitive model. It is a descriptive, empirical, observational method to deal with what people actually say and do. A depressed person, then, may be helped by changing his errors in thinking (i.e.,

his dysfunctional attitudes) rather than by concentrating on his depressed mood.

In general, cognitive psychotherapies (e.g., Rational-Emotive Therapy, Cognitive-Behavioral Therapy, etc.) have been developed for treating a wide variety of disorders. These treatments are alleged to change faulty conceptions and self-signals; yet, for Beck's approach to depression, no satisfactory measure of these alleged cognitive changes is available. An instrument to measure the basic premise or rule underlying the cognition would assess whether cognitive changes occur and may predict which patients would respond to such treatments.

Review of Existing Measures

Several attempts have been made to develop instruments to assess change in the thinking patterns of clients, particularly with regard to changes in irrational thinking patterns. However, a review of these existing measures indicates that a satisfactory instrument is not yet available (Lane, Bessai, & Bard, 1975; Mahoney, 1977). Bessai (1976) reviewed nine instruments that have been developed to assess irrational thinking. However, she (p. 13) concluded that "the properties of these scales reveal numerous inadequacies, including: Items that deal with feelings and symptoms rather than beliefs, insufficient number of items, inadequate subject and item ratios, and failure to investigate potential factorial complexity."

Argabrite and Nidorf (1968) devised a 15-item, five-point rating scale to investigate the possibility of the irrational beliefs being used as a measure of neurosis. Each item on the scale was anchored at one end by a description of a rational belief and at the other end by its corresponding irrational belief. They administered the scale to 204 college students, but only reported the means, standard deviations, and ranges of their scores. No other information about test development was given.

Jones (1968) designed a 100-item, five-point, factor-analyzed instrument (The Irrational Belief Test) to quantify the relative presence or absence of irrational beliefs in individuals. Originally, Jones wrote 40 items for each of 10 major irrational beliefs within the Ellis framework. Then, based on judges' decisions, he reduced this to 20 items per scale. These 200 items initially were administered to 131 college students, and the data were factor analyzed, resulting in 100-item, ten-point scale instrument. In addition, a cross validation was performed on a sample of 178 college students, 72 state mental hospital patients, and 177 volunteers from the general adult population. These data demonstrated high factorial validity; a strong negative relationship between scores on the scale and education level; and no discrimination with regard to age, sex, or intelligence.

A few issues emerge from a detailed analysis of the procedures employed by Jones in validating the Irrational Belief Test. Apparently, the subject sample for the final factor analysis was too heterogeneous; i.e., it is difficult to draw valid conclusions from a sample comprising junior college students, seniors in college, mental hospital patients, and adults from the general population. Furthermore, results from the factor analysis produced 15 factors, yet only 10 were used (Factors 1-8, 12, and 14); and 41 of the 100 items were not included in the scale on which they had their highest loading. In fact, nine of the 41 items were placed on the scale on which they had one of the five lowest loadings. Of these 41 items, 14 had loadings of less than .10, and 13 had loadings of less than .20 on the factors on which they were placed. Such evidence leads the reader to question whether such a study involved abuse of the subjectivity inherent in factor analysis. Trexler and Karst (1972) claim that this Irrational Belief Test could be considered a measure of vocabulary acquisition (i.e., whether the subject merely has learned the language associated with Rational-Emotive Therapy) rather than a measure of the construct of irrationality.

Hartman (1968) developed the Personal Belief Inventory, a 60-item, self-administered, six-point (totally agree to totally disagree) rating scale, derived from Ellisonian theory, for

assessing specific levels of irrational thinking. Final item selection (from a pool of 135 items) was based on correlations between the mean score for each item and total test scores in a sample of 500 college students. Reliability (internal consistency and stability) was investigated first in a sample of 30 college students in a test-retest situation, five days between testings (test-retest = .89, split half = .95) and then in another sample of 85 college students with one week between testings (test-retest = .91; split half = .90). Hartman (1968, p. 7) claimed that these results " ... have empirically shown the Personal Beliefs Inventory to possess a high level of validity and reliability and to be extremely sensitive to irrational thinking." This claim is suspect because of the following flaws: (1) The sample sizes for the reliability studies seem rather small; (2) If one is truly assessing irrational thinking, one would expect stability to be tested over a longer period of time; five to seven days for a test-retest investigation seems too short; and (3) No validation, cross-validation, or tests of significance were reported.

Bard (1973a) developed the Self-Rating Scale for Rationality, a measure consisting of 20 statements of rational and irrational values set in a Likert-scale format. These items were said to have been derived from the writings of Ellis; yet

specific item selection procedures were not explained. No data were presented on reliability or validity of the scale, other than a statement that each of the items was reviewed by Albert Ellis (face validity). In a discussion of this scale, Lane, Bessai, & Bard (1975) questioned the stability of these scores. Furthermore, the low correlations of the Self-Rating Scale of Rationality with other rationality scales, together with the inconsistency of the relationships with other measures, call into question the construct validity of the instrument. Bard (1973b) also admitted to not knowing what a high rationality score actually means; in fact, it may be "a greater familiarity with the text, A Guide to Rational Living," which the subjects were required to read.

MacDonald and Games (1972) developed the Ellis Scale, a nine-point, nine-item irrational beliefs rating scale. Items included 9 of the 11 major irrational beliefs according to Ellis' theory, with total scores ranging from 9 to 81. This instrument, however, appears to constitute merely an indication of one's endorsement of each of Ellis' 11 irrational beliefs. In addition, because of the way in which this scale is structured, there is no way either to examine the factorial composition or to investigate empirically the assumed unidimensionality of the construct "irrationality," as is implied within this scale.

The Minnesota Multiphasic Personality Inventory (Hathaway, & McKinley, 1942) is the most widely used test in the self-rating category. It consists of 568 items that are scored as "true" or "false." A number of scales designed to measure the degree of psychopathology and to differentiate broad categories of psychopathology have been derived, for example, depression, hypochondriasis, conversion hysteria, masculinity-femininity, and several validity scales (Mendels, 1970). The depression scale in particular, consisting of 60 items, includes 49 items that discriminated hospitalized manic depressive patients from normals and 11 items that discriminated the former from other psychiatric patients. However, Dahlstrom and Welsh (1962) pointed out that a high score on the D Scale (Scale 2) does not necessarily indicate a primary diagnosis of depression, in that patients with other conditions (such as schizophrenia) may be depressed and have a high D score. In addition, the scale has been criticized for its factor complexity (O'Connor, Stefic, & Gresock, 1957) and lack of dimensionality (Dempsey, 1963; 1964). But even more important to this study, the scale does not purport to be a trait measure of one's beliefs, which would be the appropriate type of instrument needed for an empirical validation of Beck's theory.

The review of these existing measures indicated that "no one scale seems to be sufficiently comprehensive and well-developed

psychometrically and theoretically to warrant using it as a starting point" (Lane et al., 1975). According to Baisden (1975), "... it appears that further research is indicated in developing an instrument to assess the degree to which an individual holds the irrational beliefs or engages in the irrational thinking." Mahoney (1977) agrees with these two viewpoints and delineates some major tasks facing a cognitive-learning perspective, including both the development of more reliable methods for assessing cognitive phenomena and the refinement and extension of knowledge regarding the causal impact of cognitive phenomena on other categories of experience (behavior, feelings, etc.).

There seems to be consensus that, at the present time, not only is there insufficient research on the hypothesis that the changing of faulty beliefs or misconceptions will alter affect, but also there are no adequate instruments for detecting the crucial clusters of misconception. The existing measures (of cognitions or beliefs reviewed) appear to reflect general feelings not beliefs (i.e., schemas or unspoken general rules that form the logical underpinnings of cognitions); and a number of methodological criticisms of each of the tests have been raised. The need for additional instruments may be caused by differences in theoretical viewpoint and definitions among the theorists. Since Beck's (1967) theory revolves around the

notion of traits, or formulas by which an individual interacts with his environment, a written instrument reflecting this stability in thinking is needed.

Personality theory and research increasingly distinguish between affective states and traits (Cattell & Scheier, 1961; Spielberger, 1966). The terms "state" and "trait" are distinguished primarily in terms of the duration of an emotional experience. An affective state refers to the momentary, here-and-now feeling status of the individual, as exemplified by the statement that "Mr. Jones is depressed now." States may last from seconds to hours, and they vary widely in intensity as a function of the "traumas" that impinge on the organism. The level of a depressive state (illness) may be measured by self-report scales such as the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). By contrast, a depressive trait refers to relatively stable individual differences in depression proneness, i.e., to differences among people in the disposition or tendency to perceive a wide range of situations as "depressing" and to respond to these situations with differential elevations in state depression. These traits usually are reactive and remain latent until activated by the dysphoria associated with a specific traumatic situation, a concept very similar to

Beck's "schema." If a self-report instrument were available to measure the level of a depressive trait, a first step in testing Beck's cognitive model would be achieved.

Purpose of the Research

The purpose of this research was in part methodological and in part substantive. Methodologically, I hoped to validate as measureable constructs the ideas that Beck has proposed as "cognitive distortions" and to develop a written instrument that is sufficiently reliable and valid for research purposes to measure the extent to which persons hold these maladaptive beliefs. The term "maladaptive" is applied to ideation that interferes with the ability to cope with life experiences, unnecessarily disrupts internal harmony, and produces inappropriate or excessive emotional reactions that are painful (Beck, 1976). In other words, I attempted to design a scale aimed at identifying the common assumptions underlying a series of cognitions. These assumptions or beliefs act as schemas by which the individual's world is construed, a conceptualization very similar to that in the pioneering research by Jean Piaget on the development of thinking patterns in children. These beliefs are unspoken, abstract regulations by which the individual has judged his own worth and direction and which he may apply to others. Often these assumptions can be inferred by looking for common themes in a series of cognitions. For example, recurrent

cognitions of being a failure when examined might reveal demands for perfection on each occasion. When this ideal is not met, the individual decides that he has failed and that he is, therefore, "a failure." The underlying assumption might be stated as "Unless I am doing a perfect job all the time to the best of my ability, I am a failure." Once this particular attitude or concept has been formed, it can influence subsequent judgments and become more firmly set. As the concept is structuralized, it remains permanently with the individual, even though it may be dormant. In these cases, it is reactivated when the individual is confronted with certain internal or external stimuli related to this belief. Once reactivated, the "depressogenic" schemas generally replace more appropriate ways of organizing and evaluating information. If this concept of the schema is to serve adequately as an experimental variable, techniques must exist for its identification and measurement. Therefore, the primary goal of this research was to design an objective method for quantifying the relative presence or absence of these maladaptive beliefs. The substantive aspect of this research, in the event the primary goal had been attained, was to determine the relationship between these attitudes and depressive tendency, as a preliminary investigation of Beck's position.

Research Hypotheses

As a means of structuring both the accumulation of data and its statistical analysis, I formulated three broad research hypotheses and their rationales:

1. There will be a significant positive correlation between scores on a measure of depressive affect and scores on the proposed scale designed to measure dysfunctional attitudes. It is hypothesized that the greater the degree of endorsement of the dysfunctional attitudes, the more frequent and/or the more severe the psychopathological symptomatology to be expected. This is based on Beck's (1976) finding that the force and prominence of maladaptive thoughts appear to increase in measure with the severity of the patient's disturbance.

2. Test-retest correlations for scores on the cognitive measure will be significantly higher than those for the affective measures; that is, negative beliefs are more persistent over time than depressed feelings. The depressive-prone individual will endorse the same maladaptive attitudes, even when he's not feeling depressed as these beliefs have become a part of his organizing and evaluating information.

3. Dysfunctional attitudes in normal subjects will be antecedent to psychopathological symptomatology. This is the basis of the cognitive approach to affective disorders; i.e., the typical feeling or emotional state of the individual appears to be a consequence of the way he structures reality.

CHAPTER II

Construction of the Dysfunctional Attitude Scale

Many instruments have been proposed for measuring psychopathology, including inventories, interviewing methods, and physiological indications. In this study, I present data on the validation of a new instrument, the Dysfunctional Attitude Scale (hereafter abbreviated "DAS"), designed to assess the beliefs by which a person perceives, evaluates, judges, and gives meaning to a variety of situations. According to Beck:

"... people apply rules (formulas, equations, premises) in regulating their own lives and in trying to modify the behavior of other people. Moreover, they label, interpret, and evaluate according to sets of rules. When these rules are framed in absolute terms, are unrealistic, or are used inappropriately or excessively, they frequently produce maladjustment. The ultimate result is often some kind of disturbance: anxiety, depression, phobia, mania, paranoid state, obsession. When the rules lead to difficulties, they are by definition maladaptive." (1976, p.246)

The DAS was developed to identify these maladaptive or dysfunctional rules.

Test Format

One of the major assumptions involved in the construction of attitude scales is that there will be differences in the belief and disbelief systems of those with "favorable" attitude towards some psychological object and those with "unfavorable" attitudes (Edwards, 1957). In an attempt to reflect this, the test format

of the Dysfunctional Attitude Scale is that of the typical self-report attitude or value scale. For each belief or attitude (the items), seven response categories are presented: totally agree, agree very much, agree slightly, neutral, disagree slightly, disagree very much, totally disagree. On an a priori basis, the author determined whether a disagreement or an agreement response indicates an adaptive or maladaptive reaction to the belief in question, i.e., whether or not the belief produces unnecessary discomfort or suffering or leads to self-defeating behavior. Scaling is on a modified Likert (1932) model, with the adaptive end of the scale being assigned an arbitrary value of one, the next category two, etc., and with zero being used for omits on each item as a code for missing data. Thus, a "disagree-type" response to an adaptive item was made equivalent to an "agree-type" response to a maladaptive item. This Likert response format allows finer distinction by subjects than the traditional two-choice format (for example, agree-disagree). Velicer and Stevenson (1978) found that use of this finer-grained response format in the development of personality scales leads to a more precise definition of scales and a greater explained portion of the total variance. They say, "Research employing scales constructed in this way would be more likely to obtain meaningful relationships to other variables, and the items involved in these relationships would be more accurately identified" (p. 295).

Each individual earns a score (1-7) for every item, and his total Dysfunctional Attitude score is simply the sum of his item scores. For each item, a score of 1 corresponds to the most adaptive way of responding to that item and a score of 7, the most maladaptive. The individual's total score, therefore, represents a combination of the number of depressogenic beliefs he endorses and the strength with which he believes each of them. The higher the total score, the more distorted is the individual's way of thinking. The fundamental assumption involved in scaling by the method of equal-appearing intervals is that the intervals into which the statements are rated are, in fact, equal. There is nothing contained within the procedure of equal-interval scaling to provide a check on this assumption. An empirical study by Hevner (1930) did indicate, however, that when the same stimuli were scaled both by the method of paired comparisons and the method of equal-appearing intervals, the relationship between the two sets of scale values was approximately linear, except at the two extremes of the equal-appearing interval continuum (Edwards, 1957).

Initial Item Selection

I wrote an initial pool of items, with the goal that they should reflect the maladaptive statements found to be characteristic of depressed patients in therapy. The items were primarily clinically derived. A number of clinicians sent me lists of those

verbalizations and thinking patterns most characteristic of their depressed patients. These patterns had been based on data obtained from observations made during psychotherapeutic interviews. The patients had been adjudged depressed by two criteria: score on the Hamilton Rating Scale of Depression (Hamilton, 1960), a clinical measure, and score on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), a self-report measure. Since Beck (1967) has noted that "each nosological group showed an idiosyncratic ideational content that distinguished it from each of the others," I tried to target in on those verbalizations which occurred most frequently in this patient population. The content represented in these depressive cognitions was predominantly negative in tone and self-referential in direction, reflecting the preoccupation of the depressed individual with self-derogatory and self-blaming thoughts; e.g., "Either I am one hundred percent successful in everything or I am a failure." Moreover, because the depressed patient projects into the future his notions of real or imagined loss, the items selected deal with his pessimistic and hopeless attitude, as well as his belief that his current discomfort is unending and unalterable. The ideational content leading to anxiety, sadness, euphoria, or anger is similar to the ideational content responsible for anxiety reactions, depression, mania, and paranoid states, respectively. The difference is that in psychopathology the

ideational content represents a distortion of a realistic situation, whereas the normal cognitive responses encompass a reasonable approximation of the reality situation (Beck, 1976).

Depressogenic schemas have a number of additional characteristics which may explain that, while everyone has schemas that relate to self-assessment and interpersonal relationships, not everyone gets depressed. One defining characteristic is inflexible or absolute rules of conduct and evaluation, which becomes manifest in the patient's language in the form of rigid quantifiers (i.e., "all," "always," "never"), categorical imperatives ("must," "ought," "have to"), and preemptive class assignments ("nothing-but"). These rules were demonstrated by such items as "I should be happy all the time," "I cannot be happy unless most people I know admire me," "I am nothing if a person I love doesn't love me." In addition, the depressed patient's characteristic, stereotypic conclusions and assessments contain certain systematic "errors" of thinking (Beck, 1967). Therefore, in the final wording of the statements, I attempted to simulate thinking errors that typically lead to and/or aggravate depression. These typical depressive cognitions can be categorized according to the ways in which they deviate from logical or realistic thinking. The patient's appraisal of reality may not be distorted, but his system of making inferences or drawing conclusions from his observations is at fault.

Illogical processes, typical of depressed patients within Beck's (1967) approach, and described by the DAS items include:

1. Arbitrary Inference: Drawing a conclusion when evidence is lacking or supports a contrary conclusion, i.e., "If I perform a selfish act, this means I am a selfish person." This is one's tendency to conclude something (usually of a personally denigratory nature) from a situation that is essentially neutral or impersonal. One fails to realize that there are more probable explanations for particular situations.

2. Magnification of Minimization: Exaggeration or under-estimation of the meaning of an event, i.e., "I should set higher standards for myself than other people." Here a person exaggerates difficulties and limitations and minimizes achievements and capabilities.

3. Selective Abstraction: Abstracting a detail out of context, and thus missing the significance of the total situation; i.e., "If a person is indifferent to me, it means he does not like me." This occurs when an individual, corrected for one minor aspect of his work, immediately jumps to the conclusion that everything he does is inadequate; he cannot be easily dissuaded from this idea.

4. Dichotomous Reasoning: Overly rigid and simplified perception of events as good or bad, right or wrong, etc.; i.e., "I must be a useful, productive, creative person or life has no

purpose." Here, the individual sees life as black or white, with no other alternatives in between.

5. Overgeneralizations: Unjustified generalizations on the basis of a single incident; i.e., "People will probably think less of me if I make a mistake." This usually involves an overall conclusion based on a single, often minor, experience or incident.

The ultimate goal was to obtain an approximately equal representation of adaptive and maladaptive beliefs as a means of controlling for acquiescent response set. However, valid adaptive statements proved to be more difficult to write than maladaptive ones. I constructed a preliminary version of the DAS, consisting of 85 items, and administered it to a group of residents in psychiatry at the University of Pennsylvania, who were apprised of the purpose of the test and who provided their opinions regarding the face validity and comprehensibility of the items. Each resident was instructed to pick the items that he felt most accurately described and measured the attitudes inherent in the espousal of Beck's approach. I also asked them to evaluate the logic of each item; i.e., to separate out those items which were truisms (i.e., "If I go up to a stranger on the street and punch him in the mouth, he will get angry"); as opposed to the required beliefs (i.e., "I may be able to influence other people's behavior, but I can't control it"). In addition, 50 individuals (33 females and 17 males) enrolled

in a graduate course in adolescence at the University of Pennsylvania were asked by their professor to complete the scale, commenting on any ambiguities or technical problems. Product-moment correlations were obtained from these data (item-item and item-total correlations). Then, I eliminated those items that did not seem to be tapping the same faulty thinking processes. This revised draft was given to Aaron T. Beck, whose writings stimulated the creation of these items, for review. Further modifications in wording were made, and additional items were constructed, resulting in a total of 100 items.

A crucial decision to be made involved the dimensionality of the instrument. I chose to treat the DAS as a "single scale psychological instrument" (Horst, 1968), that is, to have a single total score for each person and to "ignore" the fact that this score may be based on a number of different maladaptive beliefs. Based on Beck's (1967) postulate of a "cognitive distortion," I constructed a number of items which, when taken as a set, should indicate depressogenic attitudes. Even though each specific item may cover a different belief or maladaptive way of viewing various situations, it becomes a necessary component in reflecting one's tendency to employ, in general, adaptive or maladaptive attitudes. In addition, in considering the temporal stability of responses, I was not so much concerned with the stability of a person's response to

a single item. With enough items, the stability of a total score may be adequate, even though responses to individual items may fluctuate over a period of time.

Refinement of the Scale

A sample of 275 undergraduates (100 males and 175 females) at the Pennsylvania State University were administered the 100-item version of the DAS by a member of the Department of Psychology. The major criticism voiced by these volunteers was the amount of time needed to complete this number of items. Therefore, in an attempt to balance brevity and reliability, I factor-analyzed the data obtained from this population and employed an adaptation of a method described by Gulliksen (1950, pp. 207-210) to construct two parallel forms.

Initially, data from the 100-item DAS were intercorrelated. Factor-analytic procedures were then applied in an attempt to determine the minimum number of factors that could adequately account for the resultant correlation matrix. This is in agreement with Kerlinger and Pedhazur (1973) who say:

"Factor analysis is a method for reducing a large number of variables (tests, scales, items, persons, and so on) to a smaller number of presumed underlying unities called factors. Factors are usually derived from the intercorrelations among variables ... factors are constructs, hypothesized variables that reflect the variance shared by tests, items, and scales and responses to them, and, in fact almost any sort of stimuli and responses to stimuli." (pp. 360-361)

Results indicated that ten factors (or, latent variables) were extracted (see Tables 1 and 2) from the 100 items of the DAS. However, as already stated, I had decided to treat the construct of cognitive distortions in a unidimensional way at this time, and therefore I concentrated on the first factor extracted, which identifies the most general dimension and accounts for the maximal common variance among all the items. An in-depth factor analytic study will be carried out at a later date to determine the more minor dimensions accounting for subsets of the items.

The factor analytic results were used to construct two parallel forms of the DAS. According to the procedure I employed (Gulliksen, 1950), each item was represented by a point on a scatter diagram, the abscissa of which represents the mean score on the item (or its "popularity" in the sample), and the ordinate represent is factor loading on Factor I, the general factor (before rotation) of the analysis. This procedure is congruent with that used in item analysis of cognitive tests (Henrysson, 1971); the popularity index corresponds to the "difficulty index" and the factor loading corresponds to the "discrimination index." Each item having a factor loading of less than .15 (19 items in total) was ignored. Then, the remaining items plotted in the same approximate region were paired, (see Figure 1). Two additional items which could not be paired off

Table 1
Unrotated Factor Matrix
100 Item DAS
(n = 275)

Item ^a	Factors									
	1	2	3	4	5	6	7	8	9	10
01	0.153	0.349	-0.111	0.105	-0.066	0.170	-0.057	0.010	0.080	-0.156
02	0.474	0.057	0.008	-0.167	-0.022	-0.123	-0.188	-0.087	-0.067	0.043
03	0.460	-0.128	-0.000	0.040	0.256	-0.132	-0.139	-0.157	-0.011	0.122
04	0.131	0.129	0.276	0.155	-0.139	0.012	-0.064	0.240	-0.242	0.343
05	0.303	0.106	-0.131	-0.490	-0.035	-0.028	0.024	-0.257	0.012	-0.008
06	0.168	0.009	0.222	-0.009	0.213	0.327	0.140	0.119	0.209	0.171
07	0.167	-0.114	-0.276	0.188	-0.223	0.127	-0.174	-0.339	0.033	0.007
08	0.136	0.249	0.053	-0.355	-0.212	0.103	-0.071	-0.179	-0.073	-0.041
09	0.019	0.116	0.356	-0.113	-0.081	0.124	0.158	0.118	0.443	-0.046
10	0.224	-0.099	-0.450	-0.211	0.230	0.010	0.151	-0.054	-0.004	0.293
11	0.343	-0.292	0.072	-0.254	-0.069	-0.291	0.194	0.045	-0.017	0.165
12	0.363	0.229	0.061	0.235	-0.028	0.054	-0.035	0.037	0.154	0.270
13	0.343	-0.309	-0.042	0.059	-0.009	0.065	0.196	-0.093	-0.127	-0.277
14	0.225	0.021	0.222	0.449	0.205	0.090	0.242	-0.010	-0.134	0.140
15	0.293	0.019	-0.236	0.037	0.239	-0.045	0.247	-0.022	0.142	0.189
16	0.242	0.442	-0.072	0.180	0.007	-0.209	-0.059	-0.277	0.013	0.102
17	-0.043	0.143	0.214	0.054	-0.228	0.085	0.265	0.101	0.134	0.053
18	0.427	0.157	0.057	-0.265	0.025	-0.193	-0.082	0.095	0.053	0.127
19	0.480	0.259	0.047	0.124	0.170	0.071	0.000	0.096	0.041	0.249
20	0.306	0.047	-0.134	-0.052	0.138	0.092	0.190	0.034	-0.056	0.036
21	0.327	0.316	0.136	-0.051	-0.075	-0.003	0.117	-0.051	0.068	0.208
22	0.325	-0.066	-0.061	0.016	0.084	0.170	0.254	0.127	-0.337	-0.081
23	0.391	0.003	-0.270	-0.351	0.094	-0.060	0.106	-0.064	0.091	0.302
24	-0.011	-0.253	-0.142	-0.034	0.379	0.251	0.099	-0.137	0.069	0.156
25	0.140	0.327	0.358	-0.077	-0.082	0.170	-0.142	0.178	0.215	-0.120
26	0.301	-0.114	0.273	0.089	-0.105	0.179	-0.111	0.212	0.140	-0.137
27	0.254	0.297	0.697	-0.104	-0.125	0.214	0.060	0.038	-0.006	-0.042
28	0.354	-0.345	0.158	0.093	-0.105	-0.030	-0.110	0.153	-0.070	0.052
29	0.075	0.241	0.063	-0.217	-0.147	-0.003	0.080	-0.138	-0.357	0.149
30	0.320	0.048	-0.245	-0.019	0.128	0.274	-0.180	0.202	-0.059	0.174
31	0.047	-0.168	-0.280	-0.000	-0.351	0.359	0.029	-0.024	-0.064	0.043
32	-0.078	0.305	0.127	-0.225	-0.262	-0.195	0.023	-0.053	0.150	-0.042
33	0.435	-0.276	0.091	0.132	0.029	-0.157	-0.042	0.229	0.058	-0.150
34	-0.028	-0.074	0.120	0.254	-0.167	0.093	0.036	0.144	0.288	0.098
35	0.508	-0.296	-0.040	0.212	0.055	0.104	-0.103	0.063	-0.014	-0.186
36	0.408	0.431	-0.171	0.145	0.083	-0.081	-0.127	-0.065	0.075	-0.066
37	0.336	0.039	0.044	-0.222	0.229	0.350	0.122	0.089	-0.333	-0.211
38	0.205	0.241	0.201	-0.009	0.011	0.261	-0.108	0.222	-0.304	0.061
39	0.540	-0.154	0.080	-0.214	0.045	0.011	-0.346	0.116	-0.059	0.087
40	0.238	-0.161	0.176	-0.326	0.022	-0.070	0.079	0.300	-0.016	0.001
41	0.387	0.146	0.103	0.071	-0.224	0.005	-0.180	0.183	-0.367	0.200
42	0.490	-0.146	0.216	-0.108	-0.089	-0.027	-0.201	0.157	0.064	0.143
43	0.193	0.232	0.285	0.330	0.139	0.172	-0.198	0.219	0.095	0.125
44	0.274	-0.305	-0.302	-0.002	-0.093	0.127	0.045	-0.150	-0.063	0.195
45	0.556	-0.391	-0.009	0.274	-0.151	0.025	-0.138	-0.104	-0.158	-0.006
46	0.373	0.287	-0.071	0.250	0.055	-0.001	-0.222	0.130	0.142	0.012
47	0.601	-0.274	0.004	0.155	-0.002	0.086	-0.225	-0.026	-0.017	-0.111
48	0.255	0.578	0.016	0.189	-0.071	0.066	0.132	-0.163	0.065	0.009
49	0.376	-0.251	-0.285	0.077	-0.303	0.125	-0.032	-0.204	0.048	-0.004

Table 1 (cont.)

Item ^a	Factors									
	1	2	3	4	5	6	7	8	9	10
50	0.414	0.429	0.197	0.065	-0.150	-0.135	0.150	-0.268	-0.015	-0.063
51	0.523	-0.265	0.195	-0.165	-0.110	-0.060	-0.045	-0.001	0.209	-0.068
52	0.524	0.105	0.122	0.111	-0.031	-0.240	0.084	-0.089	0.032	-0.173
53	0.167	-0.117	0.185	-0.118	-0.218	0.202	0.177	-0.075	0.102	-0.225
54	0.487	0.454	-0.057	-0.016	0.075	-0.360	0.009	-0.115	-0.058	-0.086
55	0.290	0.028	-0.123	-0.296	0.193	0.029	-0.012	0.199	-0.174	0.034
56	0.379	-0.365	-0.226	0.036	-0.079	0.169	0.148	0.048	0.064	0.627
57	0.519	-0.050	0.139	-0.265	-0.002	-0.070	0.166	0.255	0.049	0.038
58	0.418	0.133	-0.249	0.211	-0.006	-0.086	0.142	0.187	-0.050	-0.118
59	0.537	0.215	-0.187	0.112	-0.009	-0.209	0.077	-0.051	-0.266	-0.018
60	0.269	0.509	0.039	-0.109	0.067	-0.017	0.152	-0.119	-0.135	0.200
61	0.111	0.169	-0.397	-0.129	-0.216	0.040	0.065	0.097	0.197	-0.023
62	-0.240	0.167	0.139	-0.052	0.420	0.360	-0.268	-0.308	0.076	0.050
63	0.168	-0.012	0.252	-0.027	-0.001	0.271	0.129	-0.090	-0.252	-0.166
64	0.076	-0.390	-0.346	-0.035	-0.067	0.253	0.054	0.051	0.103	0.671
65	0.509	-0.402	0.018	0.144	0.246	-0.032	-0.165	-0.138	0.004	0.006
66	0.382	-0.319	0.092	-0.104	-0.119	0.003	-0.067	0.024	-0.169	-0.008
67	0.279	0.513	0.120	0.129	-0.078	-0.141	0.122	-0.182	-0.078	-0.075
68	-0.148	0.301	-0.306	-0.135	-0.114	-0.026	-0.245	0.172	-0.173	-0.156
69	-0.068	-0.396	0.180	-0.013	-0.127	0.098	0.103	-0.207	0.211	0.220
70	-0.061	0.071	-0.167	0.112	-0.406	-0.186	-0.074	0.207	-0.168	0.363
71	0.278	0.337	-0.191	0.082	-0.061	0.212	-0.022	-0.072	0.131	0.147
72	0.316	0.385	-0.302	-0.104	0.029	0.172	0.036	0.209	0.127	-0.023
73	0.482	-0.115	0.277	0.097	-0.093	0.051	-0.043	-0.172	0.021	-0.017
74	-0.032	0.415	-0.293	-0.091	-0.136	0.065	-0.152	0.167	0.087	-0.208
75	0.207	-0.204	-0.236	0.017	-0.255	0.072	-0.137	0.029	0.036	-0.059
76	0.464	-0.129	0.177	-0.142	0.014	-0.101	-0.299	-0.105	0.027	-0.027
77	0.382	-0.129	0.264	0.052	-0.076	0.018	-0.082	-0.172	0.002	0.002
78	0.415	0.042	-0.121	0.134	0.066	-0.029	0.138	0.307	0.106	-0.058
79	0.395	0.041	0.133	-0.113	0.264	0.272	0.176	0.097	-0.224	-0.275
80	0.236	-0.083	0.052	-0.228	0.129	-0.145	0.255	0.208	0.166	-0.025
81	0.638	-0.002	-0.091	0.157	-0.051	-0.070	0.096	-0.087	0.048	-0.145
82	-0.120	0.414	-0.011	-0.191	-0.240	-0.021	-0.181	0.117	0.020	-0.230
83	0.227	-0.077	-0.122	0.121	-0.384	-0.349	0.224	0.345	-0.197	-0.072
84	0.089	0.254	0.259	-0.005	-0.062	0.158	0.189	0.099	0.197	0.141
85	0.345	-0.191	0.341	-0.078	-0.002	0.070	0.113	-0.065	0.035	-0.088
86	0.546	0.089	-0.079	0.151	-0.045	-0.105	0.254	0.049	-0.003	-0.207
87	0.483	-0.284	0.079	-0.187	0.059	-0.017	-0.017	-0.093	0.022	-0.107
88	0.528	0.175	-0.065	-0.012	0.121	0.111	-0.083	-0.000	0.215	-0.180
89	0.448	-0.226	0.151	-0.091	0.080	-0.173	-0.321	-0.103	0.122	0.125
90	0.180	-0.247	-0.275	0.080	0.283	0.005	0.161	-0.073	-0.063	0.027
91	0.195	-0.061	0.152	-0.145	-0.143	0.277	-0.018	-0.126	-0.184	0.244
92	0.342	0.413	-0.072	-0.226	0.076	0.018	0.033	-0.091	-0.114	-0.094
93	0.215	0.058	0.114	-0.024	-0.200	0.216	0.161	-0.163	-0.132	-0.031
94	0.365	0.467	0.023	0.278	-0.018	0.088	0.121	-0.120	0.038	0.058
95	0.405	-0.118	0.160	-0.213	-0.014	0.009	-0.176	-0.067	0.098	-0.117
96	0.194	0.245	-0.355	0.043	0.031	0.220	-0.180	0.228	0.080	0.057
97	0.361	-0.317	0.126	-0.148	-0.005	-0.258	0.097	0.262	0.011	0.099
98	0.510	-0.184	-0.105	0.275	-0.022	0.057	-0.037	-0.068	0.009	-0.076
99	0.328	-0.295	-0.233	0.083	0.289	-0.092	0.097	0.055	0.189	-0.077
100	0.260	0.081	-0.478	-0.390	-0.106	0.110	0.046	-0.040	0.154	-0.026
% of var.	20.0	11.2	5.0	4.0	3.6	3.3	3.2	2.9	2.7	2.6

^a See Table 3 for the wording of each item.

Table 2
 Rotated Orthogonal Factor Matrix
 100 Item DAS
 (n = 275)

Items ^a	Factors									
	1	2	3	4	5	6	7	8	9	10
01	-0.052	0.307	-0.014	0.091	-0.070	0.057	0.022	0.322	-0.083	-0.041
02	0.435	0.234	0.187	-0.115	-0.007	-0.030	-0.104	0.091	-0.024	0.094
03	0.448	0.209	-0.123	-0.245	0.035	0.095	-0.181	-0.091	-0.006	0.013
04	0.069	0.106	-0.072	0.074	0.069	-0.090	0.126	-0.057	-0.007	0.574
05	0.212	-0.153	0.419	-0.272	-0.988	0.047	-0.052	0.065	-0.083	-0.134
06	0.093	0.015	-0.166	-0.212	0.045	0.210	0.423	-0.041	-0.162	0.071
07	0.123	0.163	-0.093	0.070	-0.496	0.116	-0.202	0.026	0.100	-0.063
08	0.083	0.148	0.484	0.051	-0.078	0.088	0.059	0.114	-0.106	0.049
09	0.057	0.013	0.065	0.061	0.163	0.023	0.604	-0.013	0.051	-0.145
10	0.022	0.028	0.032	-0.642	-0.149	0.019	-0.175	0.040	-0.002	-0.011
11	0.357	-0.060	0.152	-0.209	0.009	-0.346	0.031	-0.242	0.015	0.041
12	0.163	0.399	-0.173	-0.105	-0.061	0.043	0.214	0.067	0.110	0.227
13	0.253	0.029	-0.111	-0.030	-0.217	-0.192	-0.099	-0.129	-0.366	-0.202
14	0.008	0.302	-0.422	-0.037	0.054	0.014	0.086	-0.284	-0.228	0.185
15	0.033	0.232	-0.154	-0.478	-0.046	-0.041	0.020	-0.028	0.003	-0.086
16	0.082	0.660	0.054	-0.045	0.033	0.042	-0.122	0.045	0.136	0.046
17	-0.165	0.091	0.037	-0.104	-0.027	-0.132	0.395	-0.096	-0.004	0.064
18	0.359	0.206	0.212	-0.245	0.168	-0.105	0.073	0.133	0.047	0.112
19	0.217	0.440	-0.162	-0.366	0.070	0.063	0.155	-0.115	-0.068	0.244
20	0.067	0.162	-0.036	-0.305	-0.052	-0.054	0.011	0.063	-0.223	0.006
21	0.104	0.399	0.152	-0.138	0.024	-0.011	0.239	-0.017	-0.003	0.168
22	0.064	0.076	-0.095	-0.180	-0.079	-0.182	-0.065	-0.000	-0.452	0.117
23	0.220	0.133	0.227	-0.371	-0.096	-0.019	0.009	0.030	0.045	0.028
24	-0.025	-0.139	0.094	-0.019	-0.539	-0.022	0.114	-0.114	0.068	0.043
25	0.194	0.133	0.096	0.227	0.151	0.106	0.436	0.244	-0.054	0.040
26	0.370	-0.022	-0.166	0.172	-0.042	-0.053	0.306	0.105	-0.140	0.045
27	0.059	0.250	0.171	0.012	-0.047	0.011	0.244	0.174	-0.216	0.102
28	0.443	-0.092	-0.170	0.021	-0.091	-0.169	0.043	-0.117	-0.052	0.212
29	-0.074	0.181	0.386	-0.025	0.002	-0.020	-0.091	-0.085	-0.162	0.285
30	0.161	0.043	-0.136	-0.291	-0.141	0.121	-0.024	0.352	-0.123	0.241
31	-0.058	-0.117	0.040	-0.004	-0.562	-0.037	0.017	0.112	-0.104	0.092
32	-0.066	0.144	0.392	0.141	0.117	-0.107	0.180	0.045	0.195	-0.059
33	0.438	0.006	-0.275	-0.045	0.011	-0.299	-0.004	0.055	-0.072	-0.064
34	-0.003	-0.008	-0.284	0.127	-0.135	-0.055	0.324	-0.038	0.185	0.040
35	0.474	0.067	-0.331	-0.019	-0.195	-0.094	-0.069	0.081	-0.233	-0.063
36	0.137	0.559	-0.044	-0.072	0.047	0.028	-0.073	0.314	0.023	-0.031
37	0.141	0.024	0.071	-0.161	0.042	0.063	-0.007	0.139	-0.602	0.055
38	0.071	0.108	0.020	0.077	0.108	0.062	0.063	0.178	-0.359	0.451
39	0.653	-0.010	0.044	-0.172	-0.066	0.045	0.035	0.180	-0.012	0.138
40	0.305	-0.087	0.221	-0.158	0.079	-0.088	0.088	-0.130	-0.135	-0.026
41	0.254	0.215	0.043	0.064	-0.044	-0.164	-0.062	0.120	-0.121	0.547
42	0.580	0.011	0.009	-0.083	-0.018	-0.685	0.162	0.036	0.010	0.213
43	0.168	0.119	-0.080	-0.018	0.223	0.174	0.311	0.164	-0.068	0.236
44	0.173	-0.012	-0.042	-0.289	-0.453	-0.025	-0.154	-0.078	-0.036	0.053
45	0.594	0.123	-0.253	0.046	-0.368	-0.138	-0.186	-0.122	-0.138	0.117
46	0.213	0.307	-0.229	-0.014	0.034	0.023	0.054	0.338	0.081	0.094
47	0.619	0.135	-0.192	0.046	-0.280	-0.035	-0.091	0.075	-0.141	0.021
48	-0.120	0.652	0.051	0.039	-0.013	0.054	0.168	0.115	-0.055	0.041
49	0.282	0.113	-0.021	-0.066	-0.574	-0.092	-0.071	0.029	0.016	-0.088

Table 2 (cont.)

Items ^a	Factors									
	1	2	3	4	5	6	7	8	9	10
50	0.139	0.661	0.215	0.092	0.036	-0.079	0.105	-0.095	-0.095	-0.007
51	0.587	0.036	0.084	-0.081	-0.153	-0.188	0.197	-0.046	-0.031	-0.112
52	0.366	-0.495	-0.021	0.016	0.065	-0.236	0.014	-0.047	-0.098	-0.115
53	0.158	-0.013	0.157	0.155	-0.231	-0.102	0.290	-0.082	-0.229	-0.162
54	0.205	0.631	0.162	-0.119	0.229	-0.168	-0.149	0.144	-0.014	-0.041
55	0.176	-0.030	0.112	-0.343	0.111	-0.059	-0.087	0.217	-0.233	0.113
56	0.251	-0.052	-0.177	-0.267	-0.508	-0.167	0.038	-0.095	-0.158	-0.062
57	0.333	0.022	0.111	-0.266	0.108	-0.268	0.247	0.030	-0.158	0.061
58	0.090	0.326	-0.213	-0.151	-0.067	-0.330	-0.061	0.227	-0.452	-0.012
59	0.234	0.524	-0.023	-0.194	-0.046	-0.237	-0.137	0.113	-0.061	0.004
60	-0.067	0.503	0.245	-0.210	0.138	0.057	0.059	0.026	-0.119	0.207
61	-0.093	0.107	0.157	-0.184	-0.249	-0.170	0.080	0.349	0.112	-0.110
62	-0.102	-0.018	-0.091	0.023	0.156	0.791	-0.091	0.012	-0.058	-0.055
63	0.093	0.056	0.057	0.130	-0.044	0.062	0.074	-0.130	-0.468	0.060
64	0.057	-0.210	-0.138	-0.252	-0.552	-0.025	-0.008	0.068	-0.030	-0.079
65	0.508	0.191	-0.244	-0.152	-0.056	0.103	-0.159	-0.058	-0.095	-0.037
66	0.551	-0.080	0.045	-0.015	-0.153	-0.159	-0.075	-0.089	-0.194	0.130
67	-0.018	0.428	0.139	0.113	0.123	-0.076	0.035	0.006	-0.086	0.037
68	-0.197	-0.019	0.127	0.105	0.044	-0.062	-0.229	0.477	0.430	0.076
69	0.012	-0.147	-0.002	-0.095	-0.253	0.031	0.287	-0.474	0.085	-0.042
70	-0.131	0.016	0.049	0.022	-0.167	-0.305	-0.086	0.065	0.316	0.552
71	-0.010	0.395	0.000	-0.148	-0.214	0.135	0.128	0.245	0.020	0.092
72	-0.022	0.245	0.052	-0.217	-0.057	-0.052	0.151	0.499	-0.105	0.006
73	0.482	0.224	0.001	0.068	-0.123	0.014	0.121	-0.168	-0.145	0.036
74	-0.179	0.138	0.151	0.074	-0.012	-0.052	0.013	0.592	0.057	-0.088
75	0.183	-0.058	-0.030	-0.032	-0.408	-0.147	-0.122	0.216	0.051	-0.037
76	0.608	0.096	0.101	-0.002	0.027	0.056	-0.031	0.010	-0.009	0.012
77	0.426	0.170	-0.000	0.061	-0.101	0.051	0.073	-0.199	-0.064	0.006
78	0.177	0.154	-0.257	-0.219	0.008	-0.281	0.133	0.216	-0.113	-0.016
79	0.197	0.108	-0.036	-0.121	0.112	0.009	0.071	0.086	-0.637	-0.037
80	0.176	-0.015	0.034	-0.113	0.174	-0.243	0.209	-0.019	-0.075	-0.157
81	0.406	0.425	-0.122	-0.053	-0.155	-0.208	0.004	0.020	-0.169	-0.117
82	-0.127	0.080	0.327	0.269	0.116	-0.092	0.072	0.393	0.052	-0.006
83	0.053	0.063	-0.030	0.028	-0.082	-0.728	-0.068	0.039	-0.006	0.140
84	-0.050	0.188	0.051	-0.021	0.053	0.021	0.467	-0.018	-0.027	0.116
85	0.384	0.040	0.053	0.049	-0.051	-0.069	0.230	-0.219	-0.228	-0.038
86	0.229	0.316	-0.111	-0.099	-0.085	-0.365	0.043	0.065	-0.231	-0.122
87	0.529	0.011	0.059	-0.159	-0.080	-0.655	-0.012	-0.081	-0.195	-0.133
88	0.353	0.252	-0.081	-0.136	-0.028	0.398	0.128	0.392	-0.147	-0.171
89	0.652	0.065	-0.000	-0.118	0.022	0.078	-0.060	-0.057	0.145	0.035
90	0.046	0.025	-0.235	-0.357	-0.114	-0.024	-0.219	-0.102	-0.198	-0.142
91	0.164	0.068	0.185	-0.053	-0.224	0.152	0.042	-0.135	-0.180	0.304
92	0.090	0.503	0.285	-0.155	0.096	0.026	-0.032	0.227	-0.236	-0.001
93	0.061	0.180	0.146	0.069	-0.227	-0.009	0.117	-0.112	-0.272	0.074
94	-0.018	0.423	-0.020	-0.033	-0.050	0.048	0.155	0.069	-0.075	0.124
95	0.511	0.038	0.141	-0.013	-0.015	0.037	0.074	0.048	0.093	-0.084
96	-0.036	0.171	-0.105	-0.179	-0.119	0.072	0.026	0.535	0.009	0.124
97	0.222	-0.105	-0.011	-0.235	0.080	-0.337	0.062	-0.153	-0.005	0.059
98	0.380	0.237	-0.286	-0.069	-0.277	-0.093	-0.082	0.017	-0.130	-0.040
99	0.266	0.004	-0.320	-0.354	-0.047	-0.110	-0.085	0.018	-0.036	-0.284
100	0.029	0.062	0.311	-0.283	-0.308	-0.055	-0.011	0.350	-0.016	-0.188

^a See Table 3 for the wording of each item.

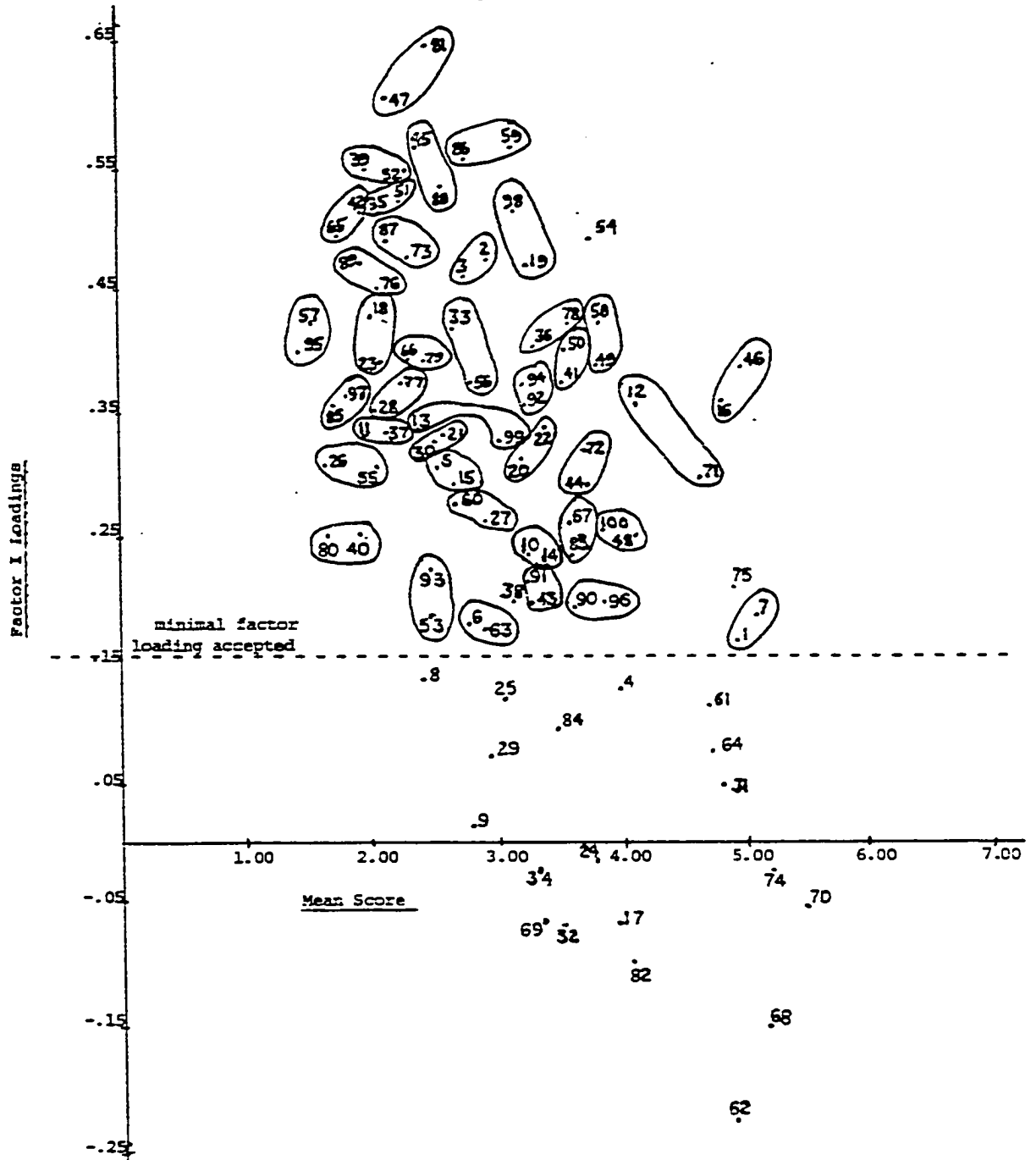
were eliminated. One member of each pair was then randomly assigned to a given subtest, with the constraint that the "reversed items" were approximately balanced between the two scales. One item which had a high factor loading and popularity index but could not be paired off was placed on both versions of the DAS. Table 3 presents the item statistics for the 100 items of the DAS along with the resultant shortened version of the scale that each item was placed on.

To verify that the two statistically-derived forms of the DAS were in fact parallel, another testing was arranged. Seventy undergraduates (20 males and 50 females) enrolled in a child development course at Montgomery Community College volunteered to participate. They initially received Form A of the DAS; one week later Form B was administered by the instructor of the course. The correlation between the total scores on Form A and Form B was .79. The mean score for Form A was 113.01 and for Form B, 113.73. Coefficient alpha (Cronbach, 1951) reliabilities of the two forms (DAS-A and DAS-B) were .86 and .87, respectively.

It is important to emphasize that I had decided a priori to treat the construct of cognitive distortions in this general manner. In writing the items I set down the essential rubrics of the domain of Beck's theory to enable me to distribute equitably emphasis to the various classificatory subdivisions and to identify important attributes. However, the question was not so much whether by such

Figure 1

The 100 DAS Items Plotted as a Function of Their
Factor I Loading and Mean Score



a priori efforts the best set of attributes in some absolute sense has been formulated as whether a set has been found which would enable me to cover most of the essential dimensions of depressogenic cognitions, even if these were confounded, overlapping, or otherwise not as clear-cut as later research might help to make them. I feel that the two 40-item forms of the DAS met this criterion and therefore, constituted the final versions selected for the in-depth validation study. A reproduction of the two forms of the DAS as finally administered may be seen in the Appendices E and F.

Table 3
 100-Item Form of the Dysfunctional Attitude Scale:
 Keys, DAS Assignments, Means, S.D.'s, and Loadings^a

Key for adaptive response	DAS form assignment	Item	Mean	S.D.	Factor I loading
Agree	A	1. I can find happiness without being loved by another person.	5.19	1.74	.16
Disagree	A	2. People will probably think less of me if I make a mistake.	2.99	1.41	.47
Disagree	B	3. People who have the marks of success (good looks, fame, wealth) are bound to be happier than people who do not.	2.78	1.55	.46
Agree	-	4. There is no value in getting upset about making mistakes.	4.00	1.54	.13
Disagree	A	5. It is best to give up your own interests in order to please other people.	2.64	1.43	.30
Agree	B	6. Criticism need not upset the person who receives the criticism.	2.85	1.33	.17
Disagree	B	7. I must be a useful, productive, creative person or life has no purpose.	5.26	1.53	.17
Agree	-	8. I can find greater enjoyment if I do things because I want to, rather than in order to please other people.	2.53	1.52	.14
Agree	-	9. By controlling the way I interpret situations, I can control my emotions.	2.94	1.39	.02
Disagree	B	10. I should be happy all the time.	3.24	1.62	.23
Disagree	B	11. Turning to someone else for advice or help is an admission of weakness.	1.83	1.24	.34

^a n = 275

Table 3 (continued)

Key for adaptive response	DAS form assignment	Item	Mean	S.D.	Factor I loading
Disagree	A	12. If people consider me unattractive it need not upset me.	4.10	1.58	.36
Disagree	A	13. If you cannot do something well, there is little point in doing it at all.	2.35	1.36	.34
Agree	A	14. I can be happy even if I miss out on many of the good things in life.	3.33	1.60	.23
Disagree	B	15. If someone performs a selfish act, this means he is a selfish person.	2.73	1.22	.29
Disagree	A	16. What other people think about me is very important.	4.03	1.45	.35
Agree	-	17. An unpleasant event does not make me sad. I make myself sad by what I tell myself.	4.03	1.69	-.06
Disagree	A	18. If I ask a question, it makes me look inferior.	2.05	1.35	.43
Disagree	B	19. If a person is indifferent to me, it means he does not like me.	3.22	1.36	.48
Disagree	B	20. People should prepare for the worst or they will be disappointed.	3.07	1.61	.31
Agree	A	21. Happiness is more a matter of my attitude towards myself than the way other people feel about me.	2.54	1.39	.33
Disagree	A	22. People should have a reasonable likelihood of success before undertaking anything.	3.30	1.52	.33
Disagree	B	23. I should be able to please everybody.	2.00	1.34	.39
Agree	-	24. If I demand perfection in myself, I will make myself very unhappy.	3.86	1.93	-.01

Table 3 (continued)

Key for adaptive response	DAS form assignment	Item	Mean	S.D.	Factor I loading
Agree	-	25. Even though a person may not be able to control what happens to him, he can control how he thinks.	3.14	1.71	.12
Agree	A	26. It is possible to gain another person's respect without being especially talented at anything.	1.75	1.17	.30
Agree	B	27. You can be a happy person without going out of your way in order to please other people.	2.90	1.70	.26
Disagree	B	28. It is shameful for a person to display his weaknesses.	2.00	1.12	.35
Agree	-	29. It is not necessary to stop myself from doing something for my own welfare simply because it might displease another person.	3.03	1.45	.08
Disagree	B	30. If a person has to be alone for a long period of time, it follows that he has to feel lonely.	2.53	1.45	.32
Disagree	-	31. A person should try to be best at everything he undertakes.	4.78	1.91	.05
Agree	-	32. I can take responsibility only for what I do, not what other people do.	3.55	1.78	-.08
Disagree	A	33. People who have good ideas are more worthy than those who do not.	2.60	1.34	.44
Agree	-	34. Just because I believe I deserve something, I have no reason to expect that I will get it.	3.37	1.70	-.03
Disagree	B	35. If a person is not a success, then his life is meaningless.	2.07	1.30	.51
Disagree	A	36. If others dislike you, you cannot be happy.	3.44	1.78	.41
Disagree	A	37. Taking even a small risk is foolish because the loss is likely to be a disaster.	2.07	1.02	.34

Table 3 (continued)

Key for adaptive response	DAS form assignment	Item	Mean	S.D.	Factor I loading
Agree	-	38. It is not necessary to become frustrated if one finds obstacles to getting what he wants.	3.26	1.43	.21
Disagree	A	39. If I do not do as well as other people, it means I am an inferior human being.	1.90	1.15	.54
Agree	B	40. I may be able to influence other people's behavior but I cannot control it.	1.96	1.06	.24
Disagree	A	41. I should be upset if I make a mistake.	3.62	1.49	.39
Disagree	B	42. If I make a foolish statement, it means I am a foolish person.	1.73	0.88	.49
Disagree	B	43. A person cannot change his emotional reactions even if he knows they are harmful to him.	3.42	1.63	.19
Disagree	B	44. I should always have complete control over my feelings.	3.55	1.62	.28
Disagree	B	45. My life is wasted unless I am a success.	2.38	1.56	.56
Disagree	B	46. If people whom I care about do not care for me, it is awful.	5.07	1.55	.38
Disagree	A	47. If I fail at my work, then I am a failure as a person.	2.21	1.31	.60
Agree	B	48. I can enjoy myself even when others do not like me.	3.97	1.64	.26
Disagree	A	49. If I don't set the highest standards for myself, I am likely to end up a second-rate person.	3.84	1.74	.38
Agree	B	50. I do not need other people's approval for me to be happy.	3.64	1.71	.41

Table 3 (continued)

Key for adaptive response	DAS form assignment	Item	Mean	S.D.	Factor I loading
Disagree	A	51. If I do not do well all the time, people will not respect me.	2.16	1.13	.52
Disagree	B	52. A person should think less of himself if other people do not accept him.	2.10	1.05	.52
Agree	B	53. One should look for a practical solution to problems rather than a perfect solution.	2.44	1.28	.17
Disagree	A/B	54. My value as a person depends greatly on what others think of me.	3.72	1.74	.49
Disagree	D	55. If I do well, it probably is due to chance; if I do badly, it is probably my own fault.	2.20	1.32	.29
Disagree	B	56. A person should do well at everything he undertakes.	2.03	1.53	.38
Disagree	A	57. If someone disagrees with me, it probably indicates he does not like me.	1.64	0.81	.42
Disagree	B	58. The way to get to like you is to impress them with your personality.	3.70	1.76	.42
Disagree	A	59. I cannot be happy unless most people I know admire me.	2.95	1.41	.56
Agree	A	60. My own opinions of myself are more important than other's opinions of me.	2.70	1.50	.27
Disagree	-	61. If I do not treat people kindly, fairly and considerately, I am a rotten person.	4.66	1.69	.11
Disagree	-	62. People should be criticized for making mistakes.	4.93	1.47	-.24
Agree	A	63. It is possible for a person to be scolded and not get upset.	2.89	1.42	.17

Table 3 (continued)

Key to adaptive response	DAS form assignment	Item	Mean	S.D.	Factor I loading
Disagree	-	64. If I try hard enough I should be able to excel at anything I attempt.	4.69	1.71	.08
Disagree	A	65. It is difficult to be happy unless one is good looking, intelligent, rich and creative.	1.88	1.19	.51
Disagree	A	66. I cannot trust other people because they might be cruel to me.	2.17	1.30	.39
Agree	A	67. I do not need the approval of other people in order to be happy.	3.71	1.81	.28
Disagree	-	68. It is necessary to have the help in order to cope with life's problems.	5.20	1.45	-.15
Agree	-	69. It is not possible for a person to accomplish everything he wants.	3.33	1.76	-.07
Agree	-	70. There's no value in criticizing myself for my mistakes.	5.52	1.18	-.06
Disagree	A	71. It is awful to be disapproved of by people important to you.	5.03	1.34	.28
Disagree	A	72. If you don't have other people to lean on, you are bound to be sad.	3.81	1.55	.32
Agree	B	73. People will like me even if I am not successful.	2.25	0.94	.48
Disagree	-	74. A person cannot survive without the help of other people.	5.18	1.57	-.03
Disagree	-	75. I should get higher standards for myself than other people.	4.89	1.41	.21
Disagree	A	76. If other people know what you are really like, they will think less of you.	2.08	1.11	.46

Table 3 (continued)

Key for adaptive response	DAS form assignment	Item	Mean	S.D.	Factor I loading
Agree	A	77. Making mistakes is fine because I can learn from them.	2.16	1.20	.38
Disagree	B	78. If I put other people's needs before my own, they should help me when I want them to do something for me.	3.62	1.59	.42
Disagree	B	79. Whenever I take a chance or risk I am only looking for trouble.	2.20	0.90	.40
Disagree	A	80. If a person avoids problems, the problems tend to go away.	1.56	0.84	.24
Disagree	B	81. I have to impress new acquaintances with my charm, intelligence, or wit or they won't like me.	2.39	1.26	.64
Agree	-	82. People can learn to be completely independent.	4.03	1.01	-.12
Disagree	B	83. People should be criticized for their mistakes.	3.58	1.55	.23
Agree	-	84. No one can hurt me with words. I hurt myself by the way I choose to react to their words.	3.46	1.03	.09
Agree	B	85. Others can care for me even if they know all my weaknesses.	1.61	0.90	.35
Disagree	B	86. I should try to impress other people if I want them to like me.	2.75	1.39	.55
Disagree	A	87. If I fail partly, it is as bad as being a complete failure.	2.06	1.16	.40
Disagree	A	88. I am nothing if a person I love doesn't love me.	2.59	1.51	.53
Disagree	B	89. People will reject you if they know your weaknesses.	1.91	0.97	.47

Table 3 (continued)

Key to adaptive response	DAS form assignment	Item	Mean	S.D.	Factor I loading
Disagree	B	90. A person should be able to control what happens to him.	3.80	1.50	.18
Agree	A	91. I can reach important goals without slave driving myself.	3.38	1.50	.20
Disagree	A	92. My happiness depends more on other people than it does on me.	3.20	1.50	.36
Agree	A	93. One can get pleasure from an activity regardless of the end result.	2.40	1.30	.22
Agree	B	94. A person doesn't need to be well liked in order to be happy.	3.23	1.47	.37
Disagree	B	95. If a person I love does not love me, it means I am unlovable.	1.64	0.93	.41
Disagree	A	96. Being isolated from others is bound to lead to unhappiness.	4.11	1.78	.19
Disagree	A	97. If a person asks for help, it is a sign of weakness.	1.69	0.96	.36
Disagree	A	98. If I am to be a worthwhile person, I must be truly outstanding in at least one major respect.	3.17	1.67	.51
Disagree	B	99. I ought to be able to solve my problems quickly and without a great deal of effort.	3.00	1.40	.33
Disagree	A	100. To be a good, moral, worthwhile person, I must help everyone who needs it.	3.77	1.51	.26

CHAPTER III

The Validation of the Dysfunctional Attitude Scale

The purpose of the present study was to further assess the appropriateness of the DAS-A and DAS-B for quantifying the extent to which individuals hold beliefs that predispose them to depression. Specifically, this study examined the reliability and validity of both forms of the DAS, primarily in terms of the instrument's internal consistency, stability, and degree to which it correlates with scores on several other brief psychological tests designed to measure personality factors that theoretically appeared closely related to the construct of dysfunctional thinking.

Methodology

Instruments

Three additional instruments were used in this validation study. They included the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), the Profile of Mood States (McNair, Lorr, & Droppleman, 1971), and the Story Completion Test (Hammen & Krantz, 1976). These instruments were chosen because they purported to measure cognitions related to the maladaptive beliefs of depressives, or because they were measures to which the DAS could be compared when testing the validating hypotheses. More specifically, the Beck Depression Inventory was chosen to test the hypothesis

of a positive correlation between depressive affect and endorsement of dysfunctional attitudes. The Profile of Mood States was added in an attempt to determine whether the depressogenic beliefs assessed by the DAS are in fact unique to depression rather than characteristic of emotional upset in general. Since this scale gives data on moods other than just depression, it became important to investigate the relationship between these distorted attitudes and anxiety, fatigue, etc. Finally, the Story Completion Test was included as a means of testing the congruent validity of the DAS, since this scale purports to measure depressive-distorted responses by employing a different type of format.

Beck Depression Inventory (BDI). This scale (Appendix B) consists of 21 items, each referring to a symptom or attitude that reflects an overt behavioral manifestation of depression. The BDI was designed to include all symptoms integral to the depressive constellation, and at the same time, to provide for grading the intensity of each. It was not designed to distinguish between diagnostic categories. Every item or symptom category of the BDI presents, for choice of response, four self-evaluative statements reflecting the intensity or severity of the symptom or attitude. For example, the individual chooses one of the following four sentences:

0. I do not feel sad.
1. I feel sad.

2. I am sad all the time and I can't snap out of it.

3. I am so sad or unhappy that I can't stand it.

Depending upon severity, each statement is assigned a value from 0 to 3. By assigning this numerical score for each symptom, the scoring system takes into account the number of symptoms reported by the individual. In addition, the intensity of each symptom is registered by assigning graduated numerical values to each statement within a category. The individual's total score, which can range from 0 to 63, represents a combination of the number of symptom categories he has endorsed and the severity of the particular symptoms.

Each of the items was chosen on the basis of its relationship to the overt behavioral manifestations of depression; they do not reflect any theory regarding the etiology or the underlying psychological processes in depression (Beck, 1967). The 21 symptom-attitude categories are:

- | | |
|-------------------------|------------------------------|
| 1. Mood | 12. Social Withdrawal |
| 2. Pessimism | 13. Indecisiveness |
| 3. Sense of Failure | 14. Distortion of Body Image |
| 4. Lack of Satisfaction | 15. Work Inhibitions |
| 5. Guilty Feeling | 16. Sleep Disturbance |
| 6. Sense of Punishment | 17. Fatigability |
| 7. Self-Dislike | 18. Loss of Appetite |
| 8. Self-Accusations | 19. Weight Loss |
| 9. Suicidal Wishes | 20. Somatic Preoccupation |
| 10. Crying Spells | 21. Loss of Libido |
| 11. Irritability | |

Rehm (1976), in reviewing available instruments for the assessment of depression notes about the BDI:

"In general its psychometric properties are very good, with its discriminant validity especially notable. It is probably most suited to clinical populations but also seems to be useful with subclinical populations ... The nature of the questions on the BDI probably make this instrument most useful as a selection criterion for behavioral research or as a pre- and post-assessment measure." (p.140)

In a sample of 606 cases, an estimate of the reliability of the BDI was calculated by means of the split-halves method, with a resultant coefficient of .93 (Beck & Beamesderfer, 1974). The concurrent validity of the BDI was supported by a number of studies comparing the test scores with clinicians' global ratings of depth of depression. In Beck's (1961) validation study, the inventory was found to correlate .65 with the clinicians' ratings; in a drug study by Nussbaum, Wittig, Hamlon, & Kurland (1963) the correlation was .66; in a British study by Metcalfe & Goldman (1965) the correlation was .62.

The BDI has been well validated on both psychiatric and general medical patients (Metcalfe & Goldman, 1965; Schwab, Bialow, & Holzer, 1967b) and is easily administered in about 10 minutes. Its scores correlate well (.75) with those from the Hamilton Rating Scale for Depression (Schwab, et al., 1967b) and with pretreatment (.75) and posttreatment (.69) scores on the Minnesota Multiphasic Personality Inventory, D-Scale (Nussbaum et al., 1963). In addition, there is strong support for the construct validity of the BDI (see Beck & Beamesderfer, 1974 for a summary).

Attempts have been made to classify depressive phenomena by the use of factor analysis. In his own studies, Beck (1961) obtained three factors from the BDI which he labelled: (1) "Negative view of self and future," which was heavily loaded on sense of failure, expectation of punishment, self-dislike, self-accusation, and suicidal ideas; (2) "Physiological," which was heavily loaded on insomnia, anorexia, weight loss, and loss of libido; and (3) "Physical withdrawal," which was heavily loaded on work inhibitions, fatigability, and somatic preoccupation. Other researchers have found anywhere from one general factor (Delay, Pichot, Lempérière, & Mirouze, 1963) to 10 factors (Pichot, Piret, & Ayde, 1966).

As a screening device to detect depression among psychiatric patients, Beck (1961) found a cut-off point of 13 to be appropriate. For screening among medical patients, Schwab, Bialow, Brown, & Holzer (1967a) found that a cutting score of 10 was appropriate.

Profile of Mood States (POMS). This scale (Appendix C) is a 65-item, five-point adjective rating scale designed to measure subjective aspects of affect both economically and rapidly. The present form is a refinement of a total of 100 different adjective scales by means of repeated factor analyses. The authors claim that "persons with at least a 7th grade education have little or no difficulty in understanding the POMS" (McNair, Lorr, & Droppleman, 1971).

Instructions to the POMS read: "below is a list of words that describe feelings people have;" for each word the respondent selects one of five responses that best indicates how he has been feeling "during the past week including today." The five possible responses are not at all, a little, moderately, quite a bit, and extremely. These intensity modifiers are rated on a four-point scale, with weights ranging from zero (not at all) to four (extremely). In the development of the POMS, six factors were extracted and replicated in a series of studies on a total of approximately 2,000 male and female subjects, mainly psychiatric outpatients, but including some nonpatients (McNair, et al., 1971). The six factor-analytically derived mood states are Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, and Confusion-Bewilderment. To obtain a score for each mood factor, the sum of the responses is obtained for the adjectives defining the factor. All items defined in each factor are keyed in the same direction, except for "Relaxed" in the Tension-Anxiety Scale and "Efficient" in the Confusion-Bewilderment Scale. These items receive negative weights in calculating the factor scores. The possible score ranges for the six factors are:

Factor T, 0 - 36 (9 items); Factor D, 0 - 60 (15 items);
Factor A, 0 - 48 (12 items); Factor V, 0 - 32 (8 items);
Factor F, 0 - 28 (7 items); Factor C, 0 - 28 (7 items).

Both internal consistency and test-retest reliabilities have been estimated for the six factors (McNair & Lorr, 1964). Internal consistency reliabilities (KR-20) range from .74 to .92, and test-retest correlations range from .61 to .69, the latter based on scores before and after four weeks of treatment. Further support for the reliability of the POMS comes from the similarities of factor structure and loadings found in a number of studies (Lorr, Daston, & Smith, 1967; Lorr, McNair, & Weinstein, 1963; McNair & Lorr, 1964).

The POMS has been used in short-term psychotherapy studies, both as a predictor and criterion (Haskell, Pugatch, & McNair, 1969; Lorr, McNair, & Weinstein, 1963; Lorr & McNair, 1965). In one study (Lorr, McNair, Weinstein, Michaux, & Raskin, 1961), a control group of 45 normals showed no significant changes on any of the mood measures after an eight-week interval, indicating that the POMS may be unaffected by a "repeated measure" response set.

The manual also provides data on selected samples of normal college students who contributed normative data of nonpatients. Because so little variance was found to be associated with sex in factors measured with the POMS among normal subjects (340 men and 516 women college students), tentative norms are presented for males and females combined (McNair, Lorr, & Droppleman, 1971). However, in both males and females, Vigor,

Depression, and Tension discriminated most clearly between students and patients. In general, the score distributions for college samples are considerably more symmetric than those found in the patient samples (McNair et al., 1971).

Story Completion Test (SCT). To measure depressive cognitive processes, Hammen and Krantz (1975) constructed the SCT (Appendix D), six hypothetical story introductions of potentially problematic situations common to college students. Following each story are presented multiple-choice questions (a total of 23 for the six stories) pertaining to the central character's feelings, thoughts, and expectations. The reader is forced to select from among four various response alternatives the one that most approximates his assessment of the character's likely response to the given situation. The rationale behind this technique is similar to that for certain other projective tests, such as the TAT and Beck's Focussed Fantasy Test (Beck, 1961). The way in which the reader structures an ambiguous stimulus is assumed to reflect his own perceptions of himself and of external reality.

The four response options to each question were carefully tailored to include one of each of the following: Depressive-distortion, depressive-nondistorted, nondepressive-distorted, and nondepressive-nondistorted. "Distortion" is defined here as logically unjustified conclusions which are drawn from available information. Three of the six stories in the questionnaire have

mainly social-interpersonal themes, and the other three have predominantly achievement-competence themes. As an example, in one story Peggy is depicted as a member of an organization who has been encouraged by friends to run for presidency. She eventually loses the election. The reader is instructed to "put yourself in Peggy's place, and try to imagine as vividly as you can what she thought and felt." The first item is:

"When you first heard you'd lost, you immediately:"

- a. Feel bad and imagined I've lost by a landslide.
(depressive in tone - distorted in terms of logical inference based on information provided in the story.)
- b. Shrug it off as unimportant. (nondepressive-distorted)
- c. Feel sad and wonder what the total counts were.
(depressive-nondistorted)
- d. Shrug it off, feeling I tried as hard as I could.
(nondepressive-nondistorted)

Analyses revealed that neither sex of the subject nor story theme appears to be a determinant of distortion level.

Each story was developed to contain specific examples of Beck's (1967, 1970) categorizations that exemplify depressed individuals. "An effort to construct the depressed-distorted response options to depict equal numbers of categories of such distortions as arbitrary inference, selective abstraction, overgeneralization, maximization of negative or minimization of positive, proved unsuccessful" (Krantz & Hammen, in press).

However, the distortion responses are all examples of some type of distortion described by Beck.

Coefficients of internal consistency are only moderately high (.61 to .79) but according to Krantz and Hammen (in press), they may reflect the lack of homogeneity of the items and the short length of the questionnaire (only 23 items). Content validity has been shown by interjudge agreement of at least 80% on the four scoring categories for each item. Moderate congruent validity ($r = .31$) with Byrne's Repression-Sensitization Scale (Byrne, 1964), which also measures distortions in a somewhat different sense, has been established (Krantz & Hammen, in press).

Data from a number of samples strongly support the hypothesized tendency of more depressed persons to give a greater number of replies. Hammen and Krantz (1976) found that depressed women had significantly greater depressed-distortion scores than did nondepressed women ($F(1,61) = 8.24, p < .01$). In another study (Hammen & Peters, 1978) students were given instructions to role-play a depressed or a nondepressed person and then to complete the questionnaire as they imagined a depressed student would answer. Depressed-role-players gave a significantly higher proportion of depressed-distorted responses than did students asked to respond in a nondepressive fashion ($F(1,49) = 5.46, p < .05$), it should be noted that the students were not given information about depressive cognitions.

Dysfunctional Attitude Scale (DAS). As discussed in Chapter II, the test format employed in the DAS was that of the typical self-report attitude scale. A modified Likert (1932) method of scaling was used, with summative scoring over a seven-position response scale for each item. The DAS (Appendices E and F), comprising two statistically-derived parallel forms of 40 items each (DAS-A and DAS-B), measures specific distortions in thinking as discussed by Beck (1967). Even though individual item scores are available, I decided that the DAS is to be primarily a single scale instrument, i.e., one that yields a single total score. For both Forms A and B, the possible range of scores is from 0 to 280.

For utility in administration, scoring and processing of data, the DAS may eventually be presented to subjects in the form of a reusable test folder with a separate answer sheet capable of being processed by the IBM Optional Scanner. In addition, either of the 40 item forms of the DAS should involve a testing time of less than 15 minutes.

Subjects

From September to December, 1977, after two years of item writing and pilot testing, I attempted a rigorous validity study on the DAS-A and DAS-B. Originally 356 subjects volunteered, but one individual was excluded from the analyses as he was involved in therapy at the initial testing. This sample was composed of

undergraduates enrolled in an introduction to psychology course at the University of California in Los Angeles (71%) and graduate students enrolled in an educational psychology course at either Beaver College or the University of Pennsylvania (29%).

Demographic characteristics are presented in Table 4.

There was a predominance of females (73%), and most of the respondents were Caucasian (70%). Ages ranged from 16 to 55, with the majority falling between 16 and 21 (Median age was 21). Seventy-nine percent of the sample were single. In addition, seven percent of the undergraduate students had part-time jobs, while all of the graduate students were employed. Application of Hollingshead's Two-Factor Index of Social Position (1965) to the 101 graduate students revealed a high concentration (89%) of respondents from the higher socioeconomic groups (I and II on this five-point scale). The mean reported grade-point average was 3.41.

At the time of initial testing, 14% reported having had contact with a professional (physician, social worker) within the month prior to completing the test battery, four people had had previous inpatient psychiatric treatment approximately 40 months ago, and 9% more reported some form of outpatient treatment around 17 months earlier. Of the individuals who revealed a history of former therapeutic treatment, 79%

rated their experience as being a success. Table 5 presents the clinically relevant background characteristics.

Procedures

Administration of Instruments

All of the testing was carried out by group administration under the supervision of the course's professor. Each subject was given a packet of instruments containing a questionnaire requesting demographic information and data pertaining to prior and present psychiatric treatment and the four test instruments, i.e., the POMS, the DAS-A or DAS-B (pretests will hereafter be referred to as DAS-A₁ or DAS-B₁), the BDI, and the SCT. The examiner instructed the participants in the proper procedure to be followed in taking each instrument. Eight weeks later a very similar packet of information was administered to the subjects: demographic and clinical data, the BDI, the POMS, and the DAS-A or DAS-B (posttests will be referred to as DAS-A₂ or DAS-B₂ hereafter). Since the SCT was used primarily for the investigation of congruent validity of the DAS, it was not readministered in the post-testing.

Table 4
Demographic Characteristics of the Sample
(n = 355)

Variable	Frequency	Percent
Sex		
Male	97	27.3
Female	258	72.7
Race		
Black	31	8.7
White	249	70.2
Latin American	10	2.8
Other	65	18.3
Age (years)		
16-21	241	68.0
22-27	52	14.6
28-33	31	8.7
34-39	14	3.9
40-45	11	3.1
46+	6	1.7
Marital Status		
Single	279	78.6
Married	64	18.0
Cohabitation	3	0.9
Divorced	9	2.5
Religious Background		
Atheist	14	3.9
Agnostic	28	7.9
Protestant	89	25.1
Catholic	80	22.5
Jewish	85	24.0
Other	59	16.6

Table 4 (continued)

Variable	Frequency	Percent
Last Grade Completed		
Partial High School	4	1.1
High School Graduate	163	45.9
Partial College	82	23.1
College Graduate	55	15.5
Graduate Professional Training	51	14.4
Occupation		
Student	254	71.5
Unskilled Blue Collar	3	0.8
Clerk, Secretary, Office Worker	7	2.0
Teacher	81	22.8
Professional	10	2.9
Employment		
Employed full-time	84	23.6
Employed part-time	45	12.7
Not applicable (students)	226	63.7
Grade-Point Average		
1.0 - 1.9	2	0.6
2.0 - 2.9	20	5.6
3.0 - 3.9	138	38.9
4.0	26	7.3
Not applicable (1st semester Freshman)	169	47.6

Table 5

Clinically Relevant Background Characteristics of the Sample
(n = 355)

Variable	Frequency	Percent
Contact with a professional within the last month		
No	305	85.9
Yes	50	14.1
Prior inpatient psychiatric treatment (4-36 mos. prior)		
None	351	98.9
One experience	1	0.3
More than one	3	0.8
Success of prior inpatient treatment		
Successful	4	1.1
Unsuccessful	0	0.0
Not applicable	351	98.0
Prior outpatient therapy (4-96 mos. prior)		
None	322	90.7
Single evaluation	4	1.2
One therapy session	6	1.6
More than one	23	6.5
Success of outpatient therapy		
Successful	26	7.3
Unsuccessful	7	2.0
Not applicable	322	90.7
Presently involved in therapy		
No	355	100.0
Yes	1 ^a	NA

^a Dropped from all analyses.

In an attempt to get data on both forms of the DAS used as a pre- and posttest, a counterbalanced design (see Figure 2) was set up. The entire group of 355 subjects was divided into approximately two random halves, one half taking DAS-A₁ followed by DAS-B₂ ($n = 185$), the other half taking DAS-B₁ followed by DAS-A₂ ($n = 170$). Formulae for linear equating (Thorndike, 1971, p. 573) of the two forms were applied to the obtained data.

Processing of the Data

As the test booklets were received, the author handscored the data and copied them on to IBM Coding Sheets, from which they were then keypunched on to cards by operators at Uni-Coll, the main computer center at the University of Pennsylvania. Every subject was given a unique identification number, and cards were sequence-punched to allow ready identification and prevent possible mishandling errors. The on-line storage system at Uni-Coll was employed to set up a disk as a means of storing the data.

Each individual had four cards of data, two for the initial testing data and two for the posttest eight weeks later. Output from the scoring program provided: (1) 40 item scores and one total score for the DAS, with a code indicating whether it was DAS-A or DAS-B; (2) 21 item scores and one total score for the BDI; (3) six subscale scores for the POMS; (4) 23 item scores

..

and one total score for the SCT; and (5) 15 (see Tables 4 and 5) demographic variables for each testing. The only exception to this rule was that the SCT was administered solely during the pretest and was therefore not represented in the posttest data output.

The Statistical Programs for the Social Sciences (SPSS), a "canned" program which is a part of the Uni-Coll Statistical Library, was employed for most of the data analyses. Product-moment correlations and descriptive statistics were secured by specific programming or as part of the computer output from some of the other analyses. An additional program was written by Andrew Baggaley, Professor of Education, University of Pennsylvania, to compute the standard error of the difference between two coefficients of correlation, which was needed as part of the cross-lagged panel design, a statistical procedure inherent in the design of the experiment.

Demographic Variable Relationships

Age, sex, and level of education were correlated with DAS, BDI, POMS, and SCT scores, and the values were investigated for significant relationships. In addition, t tests were performed to investigate the significance of differences between mean scores on the instruments by gender and education level (based on median split).

Figure 2

Design of the Research

Group	Pretest Measures	Posttest Measures ^a
Group A (<u>n</u> = 185)	BDI	BDI
	POMS: T-Scale	POMS: T-Scale
	D-Scale	D-Scale
	V-Scale	V-Scale
	A-Scale	A-Scale
	F-Scale	F-Scale
	C-Scale	C-Scale
	DAS-A ₁	DAS-B ₂
	SCT	Demographic Questions
	Demographic Questions Clinical Questions	Clinical Questions
Group B (<u>n</u> = 170)	BDI	BDI
	POMS: T-Scale	POMS: T-Scale
	D-Scale	D-Scale
	V-Scale	V-Scale
	A-Scale	A-Scale
	F-Scale	F-Scale
	C-Scale	C-Scale
	DAS-B ₁	DAS-A ₂
	SCT	Demographic Questions
	Demographic Questions Clinical Questions	Clinical Questions

^a Posttest measures were administered 8 weeks after the initial testing.

Psychometric Properties of DAS-A and DAS-B

Reliability

One of the most important qualities that a measurement device should possess is reliability, which can encompass the extent to which the test is consistent in measuring whatever it does measure, dependability, stability, and relative freedom from errors or measurement (Thorndike, 1971). Frequently the reliability of a test refers to the degree to which the items measure the same underlying characteristic (homogeneity or internal consistency), although quite often the term is also applied to calculations of temporal stability and equivalence between forms. Both internal consistency and temporal stability coefficients were calculated for DAS-A and DAS-B.

Two methods of evaluating the internal consistency of both forms of the scale were used. First, the data of 355 subjects were analyzed, and the scores for each of the 40 items were compared with the total scores on the DAS. This analysis was performed for DAS-A and DAS-B when used as both a pre- and a posttest. The second method employed was coefficient alpha, a generalization of the KR-20 formula, developed by Cronbach (1951) for use when the items are not scored dichotomously.

Inherent in the counterbalanced design was the fact that parallel forms of the DAS (DAS-A and DAS-B) were administered to the subjects at two different testings. These two forms were empirically derived to measure the same characteristics, but they comprised different questions. To test whether these two forms sampled the same domain, correlations were calculated between the scores on the two administrations of the DAS, eight weeks apart (i.e., DAS-A₁ was correlated with DAS-B₂ and DAS-B₁ was correlated with DAS-A₂). This procedure reflects both changes in scores due to trait instability and changes in scores due to item specificity. However, because the DAS-A and DAS-B consisted of different items, a linear scaling approach (Thorndike, 1971) was employed to equate the scores from the two forms. A test-retest correlation was then performed to test the difference in magnitude between the coefficient obtained by correlating these equated scores (pre-post) and the one obtained prior to converting the scores.

Validity

I regarded the degree of validity to be the most important aspect to be tested. Validity can be defined as the degree to which a test is capable of achieving certain aims (Mehrens & Lehmann, 1973). Predictive use is dependent upon criterion-related validity, and descriptive use is dependent upon content

and construct validities. For the sake of simplicity, validity of the DAS will be discussed under two main categories, corresponding to the categories used in the APA's Standards for Educational and Psychological Tests (1966). These categories, however, are far from independent.

1. Content Validity was emphasized as an important (though not sufficient) characteristic of the items, since there is now substantial empirical evidence for the importance of the content validity of inventory items (i.e., Duff, 1965; Goldberg & Slovic, 1967; Norman, 1963; Wiggins, 1966). Since content validity is related to how adequately the content of the test samples the domain about which inferences are to be made, there is no commonly used numerical expression for it. Instead, it is determined by a thorough inspection of the items. The content validity of the DAS has been described in depth in Chapter II.

2. Construct Validity refers to the degree to which scores on a measure permit inferences about underlying traits. When measurement is attempted in a new domain where no external criterion for validation exists, it is necessary to establish validity in terms of the relationships of scores on the new measure with theoretical constructs. As Cronbach and Meehl (1955) and Cronbach (1971) pointed out, the most relevant information dealing with personality variables is obtained

from an assessment of construct validity, which involves the testing of various hypotheses in an experiment that uses the test as a criterion measure.

One of the most appropriate methods of establishing construct validity is through factor analysis. Therefore, items on the DAS were intercorrelated. The data were then subjected to a principal-components factor analysis, with varimax rotation to simple structure. A general factor of "distorted thinking" was hypothesized; i.e., one that involves primarily negative self-evaluative cognitions and related behavioral manifestations. In addition, it was assumed that the other resulting factors could be interpreted within Beck's theory (see Chapter II).

In addition, the construct validity of a measure is determined by setting up a number of hypotheses regarding the personality variable (dysfunctional thinking in this case). If the hypothesis is confirmed in an experiment using the test as a criterion measure, the validity of the instrument is supported.

Four research hypotheses were tested in this investigation of dysfunctional thought processes: (1) There is a positive relationship between depressive affect and endorsement of dysfunctional attitudes, i.e., individuals who have a tendency to think more negatively (endorse more dysfunctional attitudes) are likely to feel more depressed than persons whose thinking

reflects the absence of these negative cognitive processes.

(2) Test-retest (stability) correlations for scores on the cognitive measure are significantly higher than those for the affective measures; i.e., cognitive patterns are more persistent over time than depressed mood. (3) The presence of depressogenic schemas is more associated with depressed mood than with other mood disturbances (i.e., anxiety, as measured by the POMS).

(4) There is a directional relationship leading from changes in thinking to changes in affect, i.e., the greater capacity for dysfunctional attitudes (depressogenic distortions in thinking) is causally prior to a greater level of depressive affect. However, because the population being studied is primarily a non-therapeutic "normal" college sample, displaying various other life-stress situations which are not controlled for, the results may indicate a bidirectional relationship instead of one pattern of directionality dominating. Within Beck's framework, though, the common-sense expectation is that the causal hypothesis of changes in cognition leading to changes in affect is more plausible than the reverse sequence of changes in affect leading to changes in cognition.

Much of this analysis is based on the application of a relatively novel and powerful quasi-experimental method of causal inference, the "cross-lagged panel correlational technique" (Campbell, 1963; Campbell & Stanley, 1963; Crano,

Kenny, & Campbell, 1972; Kenny, 1975; Pelz & Andrews, 1964; Rozelle & Campbell, 1969), which allows the inference of causal relations from correlational data. According to this technique, panel data can be analyzed to indicate which of two variables A and B, each measured at Time 1 and Time 2, is more likely to have causal priority over the other. If A determines B, rather than the reverse, then the cross-lagged correlation A_1B_2 should exceed B_1A_2 (see Figure 3). In employing this method, I decided to let variable A represent the DAS score and variable B either the BDI or the POMS. The remeasurement interval was set at eight weeks.

It was expected that the correlations between variables A and B at pre- and posttesting (the simultaneous correlations) would both be positive and of about the same magnitude (the magnitude depending on errors in measurement and the extent to which other factors affect B). The test-retest correlations for variables A and B (lagged correlations) similarly should be high if the tests employed are reliable and the time lag between testing sessions is not extreme, as this will reflect the consistency in each variable over time.

Hypothesis #1 was tested by examining the resultant simultaneous correlations; hypothesis #2 by examining the test-retest correlations; and, hypothesis #4 by examining the

cross-lagged correlations; i.e., the diagonals. The Pearson-Filon test, a statistical procedure described by Peters and Van Voorhis (1940), was used in each of these analyses to test the difference between the two coefficients of correlation that have no array in common.

In addition, because the value of the DAS for psychotherapists and for diagnostic personnel may lie in its capability for identifying specific features of distorted thinking, tests of the DAS' discriminative power were also performed. DAS total scores (DAS-A and DAS-B) were compared among subjects grouped according to levels of: (1) depression, as measured by the BDI; and (2) mood state or affect as measured by the POMS. I hypothesized that both forms of the DAS are sensitive enough to discriminate among the groups when blocked on the aforementioned variables. Statistical significance of these results was tested by one-way analyses of variance.

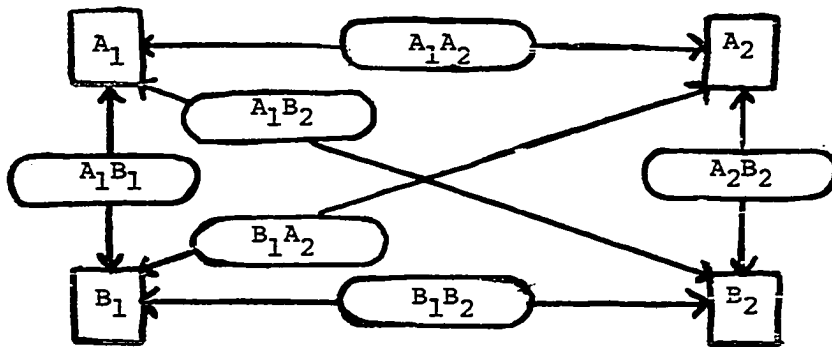


Figure 3. Cross-lagged panel correlation paradigm (A and B are variables and 1 and 2 are times.)

CHAPTER IV

Results and Discussion

This chapter presents a discussion of the psychometric properties of the DAS-A and DAS-B. Included in this presentation are (1) data on the linear equating of the DAS-A and DAS-B; (2) the reliability findings; and, (3) the results of the validation study.

Equating of DAS-A and DAS-B Scores

During the last 15 or 20 years, with the appearance of new testing programs and the further development of old ones, all requiring the administration of interchangeable test forms, many new designs and methods have been developed and refined for the equating of test scores (Angoff, 1971). If equating is properly executed, it becomes possible to merge data even when the separate sets of data derive from different forms of a test (i.e., DAS-A and DAS-B) with somewhat different item characteristics. It becomes possible also to compare directly the performance of two individuals who have taken different forms of a test. What is being sought is a conversion from the units on one form of a test to the units on another form of the same test.

In the method used to equate scores on DAS-A with scores on DAS-B, it is assumed that the practice effect on DAS-B (as a result of having taken DAS-A first) and the practice effect of form DAS-B on DAS-A (as a result of having taken DAS-B first) are proportional to the standard deviations of the two tests

(Lord, 1950). Substituting the data from DAS-A and DAS-B into the respective equations (Thorndike, 1971, p. 574) resulted in the following linear equation for making the scores on the DAS-A equivalent to scores on DAS-B:

$$Y = .978 X + 3.43, \text{ where}$$

X = score on DAS-A

Y = score on DAS-B

By applying this conversion, one can express all pre- and posttest scores in equivalent units, regardless of which form of the DAS was administered. This statistical equating of the two forms made it possible to perform some of the following analyses.

Descriptive Statistics

Table 6 gives descriptive statistics for the total group on each variable examined in the study. On all scales, pre- and post, it is possible for a subject to deviate as much as two-and-a-half standard deviations above the mean and from one to one-and-a-half standard deviations below the mean. The variances are sufficiently large for adequate discrimination; and only seven of the nineteen possible extreme scores were attained by anyone in the sample of 355 subjects. (See Table 6). Since users of the tests would be primarily concerned with discrimination between high scorers rather than low scorers, the positive skew of the score distribution on all the scales is desirable. (Notice that the skewness of the Vigor scale of the

Table 6
Descriptive Statistics for the Assessment Instruments
(n = 355)

Instrument	Pretest						Posttest					
	Mean	S.D.	Std. Error	Max. Value	Min. Value	Skewness	Mean	S.D.	Std. Error	Max. Value	Min. Value	Skewness
POMS:												
T-Scale	13.02	6.99	0.37	35.00	0.00	0.64	12.57	7.37	0.39	36.00	0.00	0.77
D-Scale	11.47	10.43	0.55	50.00	0.00	1.42	11.36	11.12	0.59	50.00	0.00	1.73
A-Scale	8.34	7.17	0.38	34.00	0.00	1.16	9.19	8.78	0.47	48.00	0.00	1.67
V-Scale	17.14	6.09	0.32	32.00	2.00	-0.19	16.06	6.32	0.34	32.00	1.00	0.00
F-Scale	10.77	6.52	0.35	28.00	0.00	0.43	10.18	6.60	0.35	28.00	0.00	0.64
C-Scale	9.12	4.83	0.26	23.00	0.00	0.62	8.94	5.56	0.30	20.00	0.00	0.81
BDI	5.91	5.29	0.28	33.00	0.00	1.54	5.74	5.89	0.31	36.00	0.00	1.85
SCT	1.35	2.08	0.11	14.00	0.00	0.59	-	-	-	-	-	-
DAS	117.75	26.83	1.42	216.00	52.00	0.44	119.36	27.17	1.44	215.00	40.00	0.51

POMS is slightly negative, however; the pathological end of this scale is reversed in that low scores reflect mood disturbance.)

In general, the descriptive statistics for all the assessment variables show acceptable values.

Relationship to Demographic Information

Although no specific hypotheses were made with regard to demographic variables, I thought it necessary to examine the relationships among the assessment variables, sex, race, age, and educational level. When the data of the 355 individuals included in the research were correlated with these background variables, the following findings resulted:

1. Sex. Table 7 presents data on the assessment instruments by sex. There was a significantly negative correlation (point biserial $r = -.12$) with the scores on the T scale of the POMS at pretesting; i.e., males had significantly higher levels of anxiety than the females ($t(354) = 2.19, p < .05$). This finding is contrary to that of other researchers (Burnett & Thompson, 1963; Taylor, 1966; Wheeler, 1965) and to typical clinical experience, wherein substantially more females than males appear at outpatient facilities for treatment (Jones, 1968). Scores on the posttest revealed the same trend, but this was not significant.

Males also tended to score significantly higher than females on the converted scores of the DAS at both pretesting ($r = -.09$,

$p < .05$) and posttesting ($r = -.13$, $p < .01$). Additional analyses of these data revealed statistically significant differences in mean performance on the posttest only ($t(354) = 2.46$, $p < .01$). There is no theoretical basis for predicting differences in frequency of depressogenic attitudes, and the obtained male-female differences are not directly relevant to the theoretical notions of idiosyncratic beliefs in depressed persons.

Lastly, gender correlated with the BDI score ($r = .11$, $p < .05$), with females having a higher level of depression at pretesting than males ($t(266) = -2.54$, $p < .01$). This difference was not present at posttesting. Similar findings, i.e., women having higher levels of depression than men, were found by Beck (1967) and appear to be quite prevalent in the literature.

2. Race. The correlations between race and each of the assessment variables, both at pre- and posttesting, were nonsignificant and close to zero.

3. Age. Older subjects tended to obtain somewhat lower scores on the Confusion Scale of the POMS at both pre- and posttesting ($r = -.09$ and $-.16$, respectively). This finding is consistent with those of McNair, Lorr, & Droppleman (1971) in their validation of the POMS. All other correlations with age were negligible.

4. Educational level. Using educational level as an index of social class, I found a significant negative correlation between

Table 7
Means and S.D.'s on the Assessment Instruments by Sex

Time of Testing	Instrument	Sex						T Value
		Male (n = 97)		Female (n = 250)		Mean	S.D.	
		Mean	S.D.	Mean	S.D.			
	POMS ¹							
	T-scale	11.12	6.54	11.06	6.82		2.19 *	
	D-scale	11.13	9.41	11.60	10.80		-0.37	
	A-scale	9.69	6.93	9.04	7.21		0.50	
	V-scale	17.19	5.69	17.12	6.24		0.09	
	F-scale	9.00	5.78	11.14	6.75		-1.72	
	C-scale	9.09	4.33	9.14	5.01		-0.07	
	BDI	4.94	3.71	6.25	5.74		-2.10 *	
	SCT	33.19	15.10	33.05	14.86		-0.37	
	DAS	121.62	25.29	116.29	27.29		1.67	
	POMS ¹							
	T-scale	12.60	6.51	12.45	7.68		0.49	
	D-scale	11.79	9.94	11.19	11.54		0.45	
	A-scale	10.35	7.91	8.75	9.05		1.53	
	V-scale	16.72	6.24	16.91	6.36		-0.25	
	F-scale	10.49	6.19	10.06	6.76		0.55	
	C-scale	9.55	4.84	8.72	5.80		1.25	
	BDI	5.32	4.72	5.90	6.28		-0.93	
	DAS	125.11	25.55	117.21	27.49		2.46 **	

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

educational level and SCT score ($r = -.19$), as well as converted pre- and posttest DAS scores ($r = -.14$ and $-.20$, respectively). Thus, subjects with lower educational attainment tended to score higher on the SCT and DAS than did those with a higher level of education. While the reason for this discrepancy is not immediately apparent, it may be due to a response set in less-educated subjects.

In general, even these significant correlations were small, accounting for at most four percent of the variance; thus, suggesting that scores on the assessment variables were almost independent of background measures.

Reliability of the DAS-A and DAS-B

Internal Consistency

Two methods of evaluating the internal consistency of the DAS-A and DAS-B were used, item-total correlations and coefficient alpha (Cronbach, 1951), a generalization of the KR-20 formula. Because of the nature of the counterbalanced design that was employed, both of these methods had to be calculated four separate times: For Form A of the DAS when used as a pretest (DAS-A₁) and as a posttest (DAS-A₂), and then, for Form B of the DAS as a pretest (DAS-B₁) and a posttest (DAS-B₂).

Initially, item statistics were obtained from the 355 subjects (Table 8), and the score for each item was then compared with the total score on the scale of which it was a part (i.e., DAS-A₁,

DAS-A₂, DAS-B₁, DAS-B₂) for each subject. The resultant correlation coefficients ranged from .25 to .76 (all significant at the .001 level). Therefore, each item has a significant positive correlation with the total DAS score under each of the four conditions. In addition, the differences in means on the same items, when used as a pre- and posttest, were negligible, in fact, they were no more than one-fifth of a standard deviation.

The second method of evaluating internal consistency was the determination of coefficient alpha for each form of the DAS. Each of the resultant coefficients was judged to be quite acceptable (Mehrens, & Lehmann, 1973): DAS-A₁, $\underline{r} = .89$; DAS-B₁, $\underline{r} = .89$; DAS-A₂, $\underline{r} = .92$; DAS-B₂, $\underline{r} = .90$.

Test-Retest Reliability

Traditional methods of assessing the stability of depressogenic distortions were employed, correlating the initial with the eight-week scores on the DAS for the entire group. Because of the nature of the counterbalanced design, i.e., the fact that parallel forms of the DAS (DAS-A and DAS-B) were administered to the subjects at different testings, two analyses were conducted. The first investigated whether both forms of the DAS sampled the same domain of distortions, as well as their stability, and a second tested the overall temporal stability of the converted pre and post DAS scores.

Initially, total scores on the two administrations of the DAS given eight weeks apart were correlated: DAS-A₁ scores were

Table 8

Item Statistics for Each Form of the DAS Under Varying Conditions							
Item ^a	DAS-A ₁ (n = 185)			Item-Total Correlation	DAS-B ₂ (n = 185)		
	Mean	S.D.			Item ^a	Mean	S.D.
1	2.40	1.59	.57	1	2.96	1.43	.20
2	2.51	1.36	.32	2	2.99	1.55	.57
3	3.15	1.55	.52	3	3.82	1.64	.36
4	2.50	1.63	.64	4	2.40	1.41	.44
5	2.39	1.52	.37	5	2.90	1.43	.37
6	2.14	1.50	.31	6	3.19	1.66	.50
7	3.05	1.65	.60	7	3.30	1.69	.60
8	1.55	0.99	.45	8	1.80	1.17	.54
9	1.96	1.13	.62	9	3.62	1.69	.40
10	2.06	1.50	.53	10	3.16	1.40	.46
11	2.23	1.40	.45	11	2.30	1.31	.51
12	2.16	1.23	.27	12	2.06	1.23	.46
13	1.86	1.04	.46	13	4.54	1.73	.36
14	2.02	1.35	.47	14	2.96	1.52	.36
15	2.25	1.49	.49	15	3.22	1.01	.54
16	2.22	1.63	.55	16	3.18	1.73	.49
17	2.63	1.61	.25	17	4.36	1.76	.31
18	3.72	1.67	.27	18	2.31	1.38	.50
19	3.49	1.76	.64	19	3.57	1.81	.42
20	4.15	1.94	.45	20	3.60	1.74	.35
21	3.67	1.77	.65	21	3.81	1.65	.51
22	2.97	1.54	.40	22	1.92	1.12	.50
23	3.60	1.65	.40	23	2.52	1.53	.47
24	2.61	1.57	.19	24	4.71	1.46	.26
25	4.24	1.61	.33	25	2.51	1.46	.54
26	2.04	1.35	.47	26	3.29	1.46	.41
27	5.10	1.50	.36	27	3.01	1.45	.43
28	4.09	1.70	.41	28	3.79	1.65	.32
29	2.91	1.50	.20	29	3.27	1.67	.44
30	3.25	1.60	.15	30	3.60	1.64	.35
31	2.26	1.26	.46	31	2.59	1.35	.40
32	2.91	1.71	.43	32	3.24	1.61	.34
33	2.24	1.26	.40	33	2.30	1.13	.30
34	2.76	1.57	.54	34	2.10	1.02	.50
35	3.14	1.70	.46	35	3.20	1.51	.26
36	1.87	1.26	.26	36	2.63	1.25	.20
37	1.69	1.29	.39	37	2.27	1.43	.47
38	4.50	1.76	.55	38	3.02	1.50	.43
39	4.00	1.60	.35	39	1.75	1.09	.34
40	5.10	1.70	.25	40	3.17	1.73	.41

^a The wording of each item from DAS-A and DAS-B may be found in Appendices E and F.
 Note: All correlations are significant at the .001 level.

Table 8 (cont.)

Item ^a	DAS-B ₁ (n = 170)			Item-Total Correlation	Item ^a	DAS-A ₂ (n = 170)			Item-Total Correlation
	Mean	S.D.				Mean	S.D.		
1	3.26	1.66		.29	1	2.20	1.28		.37
2	3.02	1.67		.63	2	2.32	1.20		.32
3	3.71	1.85		.51	3	2.85	1.52		.69
4	2.19	1.33		.33	4	2.66	1.48		.53
5	2.74	1.36		.44	5	2.42	1.64		.32
6	2.62	1.63		.51	6	2.42	1.45		.46
7	2.76	1.70		.67	7	3.23	1.74		.56
8	1.75	1.24		.76	8	1.66	1.19		.54
9	3.60	1.57		.27	9	2.00	1.40		.57
10	3.15	1.47		.57	10	2.18	1.32		.68
11	2.09	1.30		.71	11	2.62	1.53		.62
12	1.96	1.26		.45	12	2.30	1.30		.27
13	4.56	1.78		.32	13	1.09	0.95		.61
14	2.96	1.66		.29	14	2.09	1.26		.59
15	3.19	1.88		.47	15	1.95	1.27		.57
16	2.94	1.65		.51	16	2.62	1.56		.67
17	4.60	1.96		.39	17	2.35	1.46		.37
18	2.04	1.25		.50	18	3.03	1.30		.47
19	3.38	1.83		.41	19	3.35	1.59		.71
20	3.47	1.76		.48	20	3.48	1.73		.50
21	3.40	1.63		.53	21	3.43	1.79		.60
22	1.75	1.11		.56	22	2.06	1.53		.61
23	1.96	1.26		.47	23	3.40	1.68		.54
24	4.38	1.82		.34	24	2.69	1.40		.37
25	2.40	1.59		.62	25	3.50	1.69		.46
26	3.29	1.61		.41	26	2.05	1.34		.56
27	2.76	1.48		.42	27	4.55	1.78		.51
28	3.40	1.77		.26	28	3.26	1.84		.46
29	2.61	1.61		.37	29	2.88	1.46		.57
30	3.40	1.70		.40	30	3.08	1.45		.53
31	2.38	1.26		.60	31	2.11	1.09		.50
32	3.29	1.80		.36	32	2.70	1.61		.70
33	2.28	1.24		.27	33	2.09	1.14		.39
34	2.13	1.16		.60	34	2.72	1.60		.64
35	3.27	1.67		.34	35	3.50	1.80		.30
36	2.25	1.10		.26	36	1.91	1.23		.43
37	2.19	1.39		.53	37	3.72	1.69		.29
38	3.55	1.75		.52	38	4.54	1.60		.54
39	1.82	1.23		.33	39	4.30	1.67		.41
40	2.43	1.60		.39	40	4.71	1.77		.29

^aThe wording of each item from DAS-A and DAS-B may be found in Appendices E and F.
Note: All correlations are significant at the .001 level.

correlated with DAS-B₂ for the 185 individuals who took the tests in this sequence, and DAS-B₁ scores were correlated with DAS-A₂ for the remaining 170 subjects. The resultant product-moment correlations were .80 and .81, respectively. Thus a substantial degree of trait stability is reflected but these values may involve a lower-bound estimate of reliability because of the procedure employed, as well as the slight changes in scores due to item specificity. Therefore, for the 355 individuals in the total sample, converted pretest scores (defined by the linear-scaled scores of DAS-A₁ and DAS-B₁) were correlated with the converted posttest scores (linear scaled scores of DAS-A₂ and DAS-B₂) resulting in a stability coefficient of .84. Although this result is slightly higher than those obtained by the first method, the difference in magnitude is very small.

The obtained stability coefficients are well within the .80 to .90 levels expected of measures of stable personality characteristics. These results indicate that the rank-orderings of scores is approximately the same on repeated occasions, in spite of item specificity on each form of the DAS. These indications of good stability over an eight-week period could be useful in determining experimental or therapeutic change.

In addition, I had decided to analyze the data from item #54 of the original 100-item DAS, which was included in both the DAS-A and DAS-B. Results indicated no significant differences among the

mean scores for the various testings: DAS-A₁: Mean = 3.49, s.d. = 1.76; DAS-A₂: Mean = 3.35, s.d. = 1.59; DAS-B₁: Mean = 3.48, s.d. = 1.63; and DAS-B₂: Mean = 3.81, s.d. = 1.65. The content of this item seemed to be more closely associated with the domain being tested on Form A of the DAS, but the correlation coefficients were not significantly different (DAS-A₁: $\underline{r} = .64$, $p < .001$; DAS-A₂: $\underline{r} = .71$, $p < .001$; DAS-B₁: $\underline{r} = .53$, $p < .001$; and DAS-B₂: $\underline{r} = .51$, $p < .001$). Lastly, correlations for this item over time were investigated on the individual level. Each subject's score on this item at pretesting correlated with his score at posttesting ($\underline{r} = .95$, $p < .001$), indicating high temporal stability of this item.

Validity of the DAS

The American Psychological Association's manual, Technical Recommendations for Psychological Tests and Diagnostic Techniques (1954) recommends the use of congruent validity and construct validity criteria in evaluating personality tests (Beck & Beamesderfer, 1974). Therefore, the validity results will be presented according to these categories.

Congruent Validity

Correlation coefficients were computed between the DAS and the six subscales of the POMS, the BDI, and the SCT (see Table 9) to evaluate the congruent validity. (In these analyses, the all-inclusive term "DAS" refers to the mathematically equated scores for Forms A and B. Therefore, every subject has one "pretest

Table 9
Intercorrelations Among the Assessment Variables
($n = 355$)

Variables:	Pretest Variables:									Posttest Variables:								
	T	D	A	V	F	C	BDI	SCT	DAS	T	D	A	V	F	C	BDI	DAS	
Pretest:																		
POMS:																		
T-Scale	1.00																	
D-Scale	.70	1.00																
A-Scale	.60	.65	1.00															
V-Scale	-.34	-.40	-.20	1.00														
F-Scale	.49	.46	.43	-.28	1.00													
C-Scale	.65	.69	.51	-.35	.51	1.00												
BDI	.59	.70	.51	-.40	.47	.50	1.00											
SCT	.36	.42	.32	-.30	.25	.29	.44	1.00										
DAS	.34	.40	.33	-.23	.31	.30	.36	.52	1.00									
Posttest:																		
POMS:																		
T-Scale	.63	.45	.36	-.24	.30	.47	.46	.29	.33	1.00								
D-Scale	.51	.62	.41	-.29	.36	.40	.50	.39	.30	.76	1.00							
A-Scale	.45	.49	.57	-.20	.33	.36	.40	.26	.32	.63	.75	1.00						
V-Scale	-.26	-.27	-.15	.53	-.21	-.23	-.30	-.22	-.22	-.42	-.45	-.33	1.00					
F-Scale	.39	.35	.35	-.19	.56	.33	.32	.19	.27	.57	.53	.52	-.37	1.00				
C-Scale	.40	.49	.30	-.23	.36	.62	.45	.27	.35	.71	.70	.64	-.41	.56	1.00			
BDI	.45	.51	.35	-.30	.37	.39	.66	.37	.37	.65	.73	.57	-.44	.44	.64	1.00		
DAS	.32	.40	.27	-.22	.27	.34	.37	.40	.04	.30	.44	.30	-.25	.20	.39	.47	1.00	

Note: $p (.05) = .11$, $p (.01) = .15$ ($n = 300$)

score" and one "posttest score," regardless of which form of the DAS was actually taken.) Resultant values were examined for significance in accordance with the sample size and the a priori assumptions regarding the expected relationships.

It was anticipated that the DAS would have a moderate positive correlation with scores on the SCT, a purported measure of depressive-cognitions. The correlation between the two scores was .52 ($p < .001$), indicating some similarity between the constructs being tested by each of these measures. The data in Table 9 also support research hypothesis #1, i.e., that there will be a positive correlation between depressive affect and endorsement of dysfunctional attitudes. For the pretest measures, the DAS correlated .40 ($p < .001$) with the D-Scale of the POMS and .36 ($p < .001$) with the BDI. These associations were slightly stronger for the posttest measures, $r = .44$ ($p < .001$) for the D-Scale of the POMS and $r = .47$ ($p < .001$) for the BDI. Also supported is the assumption that individuals who endorse a greater number of depressogenic attitudes or schemas tend to feel more depressed than those individuals whose thinking reflects the absence of these negative beliefs.

Scrutiny of the intercorrelations in Table 9 provides insight into the dominant characteristics of individuals whose thinking contains the idiosyncratic beliefs measured by the DAS. According to the correlational data from the DAS and the POMS, these individuals tend to be more tense or anxious, to have feelings of

depression accompanied by a sense of personal inadequacy, to have a mood of anger and antipathy towards others, to display lack of vigor and low energy, and to be characterized by bewilderment and muddleheadedness. However, since the DAS was constructed to assess depressogenic beliefs, it seemed important to question whether the items on both forms of the scale are unique to depression rather than characteristic of emotional upset in general. Although the D-Scale of the POMS had the highest correlation with the DAS at both pre- and posttesting (.40 and .44, respectively), all the \underline{r} values were significant at least at the .05 level. However, this result may be an artifact caused by the high intercorrelations among the factor scores for this sample (i.e., depression with confusion, $\underline{r} = .69$ at pretesting; depression with tension-anxiety, $\underline{r} = .76$ at posttesting). In an attempt to control statistically for the effects of these other variables, partial correlations were performed. Table 10 presents the results (for pre- and post-testing) when each mood factor score was correlated with the DAS and the effects of the other mood factors controlled. The findings suggest that, for the pretest sample, depressed mood and confusion alone were associated with distortions in thinking when the effects of the other mood states were controlled. However, on the posttest data, depressed mood supplied the only significant partial correlation. Similar analyses conducted by Krantz and Hammen (personal communication, 1978) on the SCT resulted in the finding that

distortion, as measured by that scale, is associated with depressed mood and fatigue alone.

Construct Validity

The hypotheses that I tested in my investigation of distortions in thinking are: (1) Depressed subjects are more likely to have dysfunctional attitudes than nondepressed subjects; (2) Depressogenic schemas are more persistent over time than depressed feelings; and (3) There is a time-related association between depressogenic attitudes and depressed mood, possibly quasi-causal in nature.

Effects of level of depression. Of critical interest are issues pertaining to construct validity, and the central question is the relationship between depressed mood and degree of distorted responding. As mentioned earlier (Table 9), college students who endorsed more depressogenic attitudes tended to feel more depressed. However, in an attempt to answer this question more fully, the total group was divided into "depressed" and "nondepressed" subgroups. By applying the suggested cutoff score (Schwab et al., 1967a), 75 students who obtained a score of 10 or more on their initial BDI were considered to be mildly to moderately depressed. Based on this split, scores on the DAS were analyzed (see Table 11).

As hypothesized, the more depressed persons endorsed more of the depressogenic attitudes (see Table 11). DAS scores of the depressed group were significantly higher than those of the non-depressed group at both pre- and posttesting ($t(353) = 4.634$,

Table 10

Partial Correlations of DAS Responses with Mood
(Controlling for Remaining Moods)

Mood States ^a	Testing Time	
	Pretest	Posttest
Tension-Anxiety	-.01	.05
Depression-Dejection	.10 *	.12 **
Anger-Hostility	.06	.07
Vigor-Activity	-.05	-.06
Fatigue-Inertia	.07	-.00
Confusion-Bewilderment	.15 **	.06

^a Mood states were measured by the POMS subscales.

* $p < .05$

** $p < .01$

Table 11
BDI and DAS Scores at Pre- and Posttesting as a Function of
Psychopathological Classification

Psycho- pathological classification ^a	N	Pretest			Posttest				
		BDI		DAS	BDI		DAS		
		Mean	S.D.	Mean	S.D.	Mean	S.D.		
Depressed	74	14.08	4.81	130.26	29.60	11.97	6.98	134.03	31.66
Nondepressed	281	3.75	2.66	114.46	25.10	4.12	4.30	115.51	24.50
t: - value			17.77***		4.63***		9.23***		5.42***

^a Determined by cutoff scores on the BDI.

*** p < .001

$p < .001$ and $t(353) = 5.419$, $p < .001$, respectively). Values of coefficient alpha for DAS-A₁, DAS-A₂, DAS-B₁, and DAS-B₂ were recomputed to see if the more depressed subjects would show different internal consistency on the test. In each case, the reliability of the test increased in the depressed group, though not significantly.

Stability and Change in Distortion and Mood. The simple test-retest correlations between DAS scores at pre- and post-testing reflect a substantial degree of stability. As mentioned earlier, in the total group of 355 individuals the test-retest coefficient was .84 ($p < .001$) over a period of eight weeks. In comparing this to the test-retest coefficients of the BDI (.66) and the D-Scale of the POMS (.62), I found the DAS to be a much more stable measure ($Z = 5.50$, $p < .001$ and $Z = 6.21$, $p < .001$, respectively). This finding can be taken as additional evidence of construct validity, as one goal of the research was to design a reliable and valid trait measure of depressogenic attitudes.

A closer look at Table 11 reveals that, although distortion scores, as measured by the DAS, tend to be relatively stable, they also seem to vary according to changes in mood level, as predicted by Beck's theory. To further investigate this, subjects whose depression level had increased over time were compared with those whose level of depression had decreased. Because the BDI scores were associated with gender, males and females were analyzed

separately (see Table 12). Differences in DAS scores at retesting were nonsignificant. Whether the male subject became more or less depressed was not reflected in his DAS scores; i.e., his dysfunctional attitudes remained constant. For females, however, those who became more depressed increased in their distortion score ($t(78) = 2.78$, $p < .01$). This same analysis was then done in reverse, i.e., a comparison was made by gender of BDI scores of subjects whose level of distortion had increased over time versus those whose level of distortion had decreased. These data are presented in Table 13. Although all of the fluctuations are in the predicted direction (i.e., those who increased in level of distortion increased in level of depression, and those who decreased in level of distortion decreased in level of depression), none of these changes were statistically significant.

At this point, one may legitimately raise the question of the direction of the relationship between depressogenic schemas (attitudes) and emotional affect. Does the greater capacity for distorted thinking result in a higher level of depression, or is the progression more accurately described as one in which depression influences distorted thinking? Probably both of these causal progressions operate to a certain degree (see Table 12 and 13); i.e., it's a bidirectional relationship. The activation of certain schemas might well cause the increase of depressive affect, which in turn activates additional schemas, etc. But while some reciprocal

Table 12

Distortion Scores for Males and Females
By Changes in Depression Level

Depression Level ^a	Sex	DAS Score				t-value
		Pre		Post		
		Mean	S.D.	Mean	S.D.	
Became less depressed	Male (<u>n</u> =41)	121.05	21.32	124.34	21.17	1.17
	Female (<u>n</u> =127)	115.75	26.19	114.15	24.66	-0.83
Became more depressed	Male (<u>n</u> =34)	127.68	28.57	131.47	29.12	-0.90
	Female (<u>n</u> =79)	119.60	29.08	124.86	30.22	2.78 **

^a Defined by the score on the BDI at posttesting minus the initial BDI score. A negative difference score means the individual became less depressed during the eight week testing period.

** $p < .01$

Table 13

Depression Scores for Males and Females by Changes in
Dysfunctional Attitude Endorsement

Distortion Level ^a	Sex	DAS Score				t-value
		Pre		Post		
		Mean	S.D.	Mean	S.D.	
Thinking contains more dys- functional attitudes	Male (<u>n</u> =56)	4.64	4.03	5.36	5.25	1.11 (NS)
	Female (<u>n</u> =133)	6.34	5.26	6.79	6.29	0.37 (NS)
Thinking contains less dys- functional attitudes	Male (<u>n</u> =38)	5.40	3.34	5.34	4.35	0.11 (NS)
	Female (<u>n</u> =108)	6.14	6.30	5.21	6.15	1.93 (NS)

^a Defined by the score on the DAS at posttesting minus the initial DAS. A negative difference score means the individual endorsed fewer dysfunctional attitudes during the eight week testing period.

feedback system of this type is conceivable, it is likely that a preponderant causal pattern exists, and the resolution of this issue motivated the following investigation.

Data were analyzed by means of the cross-lagged panel correlational method, a quasi-experimental design (Campbell, & Stanley, 1963; Kenny, 1975). In this method, the inference of causality is based primarily upon the rule of time precedence. In all sciences, when an event consistently precedes the occurrence of another, and the opposite does not hold, one of two possibilities is entertained: (a) Event 1 is seen as a cause (though possibly only one of many) of Event 2, or (b) Events 1 and 2 are viewed as the effects of some more general causes (Crano, 1973). In the experimental arena the controlled application of Event 1 effectively precludes the possibility of the second alternative, and thus changes in Event 2 (usually termed the dependent variable) are attributed to the application of Event 1 (the independent variable). In spite of the fact that I was unable to control life stress events in this study (i.e., schemas may or may not have been activated), I decided to analyze my data by this method to see how this trait measure (the DAS) would be affected by changes in mood.

Intercorrelations among the pre- and posttest scores for the total group on the BDI, POMS (D-Scale), and DAS were employed in this analysis. If, as espoused by the cognitive theorists, changes

in one's cognitive organization precede changes in affect, the following should be observed:

$$r_{14} > (r_{13} = r_{24}) > r_{23}, \text{ where}$$

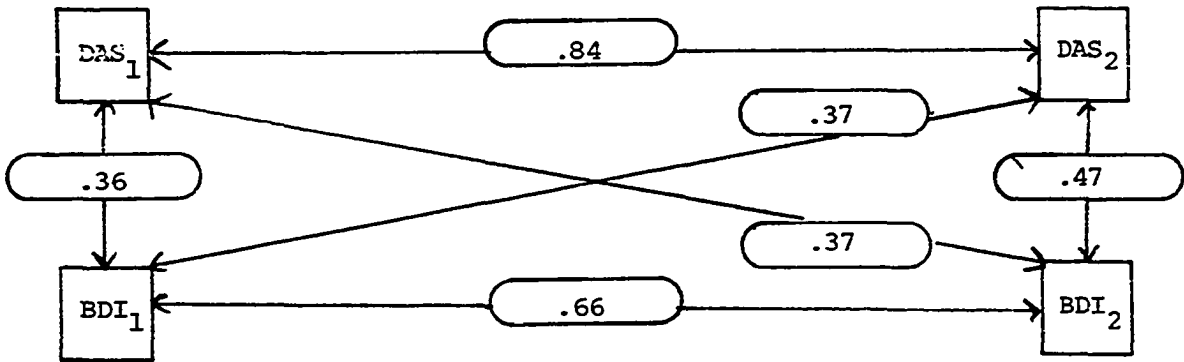
- 1 = DAS pretest score
- 2 = DAS posttest score
- 3 = BDI or POMS pretest score
- 4 = BDI or POMS posttest scores.

Inherent in this formula is the assumption that the two simultaneous correlations (r_{13} and r_{24}) should be stable over time. The results are shown in Table 14. The pairs of cross-lagged relationships between depressogenic attitudes and depression (r_{14} and r_{23}) were not different when either the BDI or the POMS was used as the measure of affect ($Z = .07$ and $-.37$, respectively). In addition, it was found that the cross-lagged correlations were slightly lower than the simultaneous correlations for both analyses and, the simultaneous correlations were not steady over time when the analysis employed the BDI ($Z = 2.57$, $p < .01$). This instability itself might have upset the predicted inequalities in that other factors may be affecting one's level of depression, i.e., life-stress situation, and these uncontrolled factors varied more at one time than at another. Perhaps, too, a period of eight weeks was either too long or too short to match the causal interval (if indeed a causal asymmetry existed).

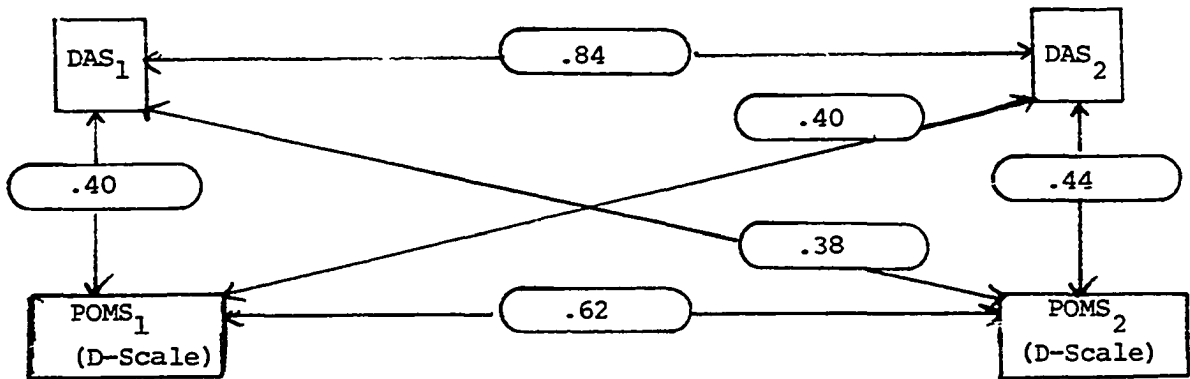
It became apparent that this scheme was operating under an additional constraint, the stability of the DAS over time. One of the assumptions inherent in the cross-lagged design is that if

Table 14

Cross-Lagged and Other Correlations Between
Depressogenic Attitudes and Affect
($n = 355$)



Using BDI as measure of affect



Using POMS (D-Scale) as measure of affect

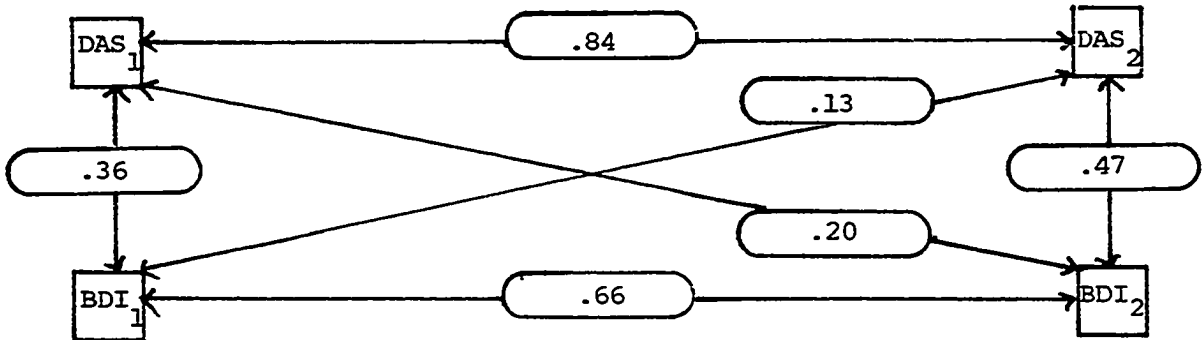
one variable is highly consistent, then all cross-correlations must take very similar values, and the predicted difference in the two diagonal correlations has little opportunity to appear. In an attempt to free the relationship from this constraint, the technique of partial correlations was applied in order to investigate: (1) the possible effect of an individual's pre-DAS score on his post-BDI, over and above what could be predicted simply from his pre-BDI, as well as (2) the effect of an individual's pre-BDI score on his post-DAS performance, over and above what is predictable from his pre-DAS.

Table 15 presents the data for the cross-lagged relationships (for both the BDI and the POMS), using the first-order partial correlations along the diagonals. Whether the BDI or the POMS (D-Scale) was used as the measure of affect, the results were in the hypothesized direction according to cognitive theory, i.e., schemas \rightarrow affect, but nonsignificant ($Z = 1.40$ and 1.04 , respectively).

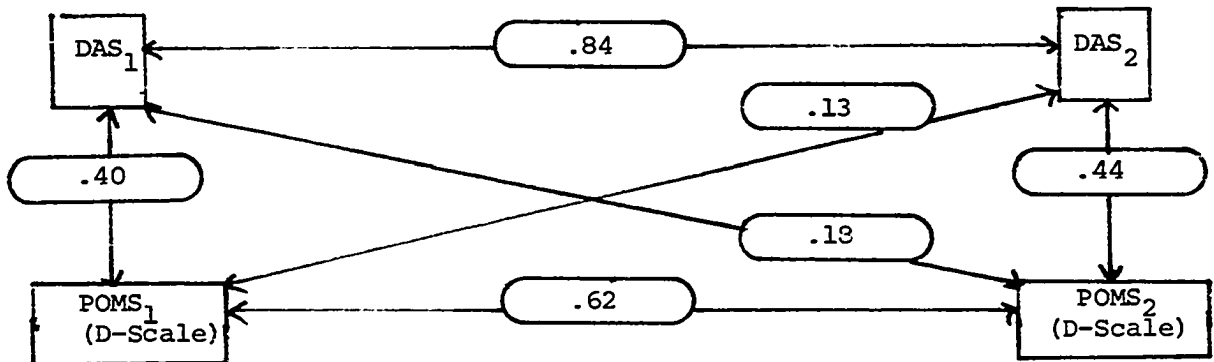
Based on these data, we truly cannot assert any priority; perhaps both depressogenic attitudes and affect influence each other, or both are influenced by a third factor. With the stability of attitudes or of affect over time (i.e., becoming progressively more stable, or less stable), this method runs into difficulty. However, since the same analysis, using the partials, approaches significance, it leads one to assume that

Table 15

First-Order Partial Correlations Between
Attitudes and Affect for Cross-Lagged Relationships
($n = 355$)



Using BDI as the measure of affect



Using POMS (D-Scale) as the measure of affect

affect is subject to the effect of other factors and the extent to which they affect it may alter the results. Within Beck's theory, this other factor may be the "cognition," i.e., the conclusion one draws from the depressogenic attitude and the only thing the individual is aware of. Data also tend to support the notion that the interval of remeasurement may not match the true causal interval since: (1) the cross-lagged correlations (diagonals) are not always greater than the simultaneous (or vertical) correlations, and (2) these simultaneous correlations are not statistically equal. However, even if one has selected an interval of remeasurement larger or smaller than the causal interval, there is reason to believe the predicted inequalities will appear, provided that variable A (depressogenic attitudes, in this case) is reasonably consistent over time (Pelz & Andrews, 1964).

In a final attempt to explore further the theory of a preponderant causal pattern existing, I repeated the foregoing for the depressed (BDI score ≥ 10) and nondepressed (BDI score < 10) subgroups separately. Analyses based on the zero-order correlations, using both BDI and POMS scores, revealed that for both groups the pairs of cross-lagged relationships were not different. However, when the analyses were repeated using the first-order partials, results showed a small but consistent difference in the predicted direction in the four comparisons

(see Table 16). The average difference was .21, and all four of them were statistically significant. When the effect of the scores on the initial DAS were partialled out, the correlations between initial BDI score and final DAS score approached zero. Therefore, the expected differences do appear when the initial state of the "resultant" variable is partialled out. These findings are interesting within the cognitive paradigm; however, the results are purely suggestive. Further controlled research is needed before one can draw unambiguous conclusions about the maintaining role of attitudes (or schemas) in depression.

Differences in DAS Scores by Levels of Depression. Because the DAS was designed as a screening instrument (i.e., to identify those maladaptive beliefs which are typical of depression), the cardinal test of its usefulness should involve a determination of its ability to identify persons with certain characteristics. To determine the power of the DAS to discriminate among individuals with varying levels of depression, the total group was divided into 3 subgroups according to pre- or posttest scores on: (1) the BDI and (2) the POMS (D-Scale). In a previous analysis, I had examined the DAS scores by separating the group into depressed and nondepressed subsamples according to the suggested cutoff scores for a "normal" population. In this analysis, I decided to apply the clinically determined cutoff scores (Beck, 1967) on the BDI for comparison when these analyses are repeated at a later date in a psychiatric population.

Table 16

First-order Partial Correlations for
Depressed and Nondepressed Groups

Using BDI as the Measure of Affect

Group	DAS ₁	BDI ₂ · BDI ₁	BDI ₁	DAS ₂ · DAS ₁	Difference
Nondepressed (n=281)		.23 *		.07	.16 *
Depressed (n=74)		.17		-.08	.25 **

* p < .05

** p < .01

Using POMS (D-Scale) as the Measure of Affect

Group	DAS ₁	POMS ₂ · POMS ₁	POMS ₁	DAS ₂ · DAS ₁	Difference
Nondepressed (n=281)		.23 *		-.06	.29 **
Depressed (n=74)		.17		.01	.16 *

* p < .05

** p < .01

When the BDI scores were used as the criterion measure, three subgroups were obtained by applying the predetermined cutoff scores (Beck, 1967): normal range of depression (0-9); mildly depressed (10-15); and, moderately to severely depressed (16+). Mean DAS scores were determined for each of these groups, and a one-way analysis of variance (see Table 17) was performed ($F(2,352) = 15.58, p < .001$ for the pretest scores and $F(2,352) = 38.22, p < .001$ for posttest). Newman-Keuls post hoc analysis of the data indicates that: (1) the moderately to severely depressed group has significantly higher DAS scores than both the normal and mildly depressed groups at pre- and posttesting; (2) the difference in means between the mildly depressed and normal group was just short of significance ($p < .08$) for the pretest scores; and (3) the mildly depressed group had higher DAS scores than the normal group at posttest ($p < .05$).

The total group was then divided into thirds based on the percentile scores for Scale-D reported in the Instruction Manual for the POMS (McNair, Lorr, & Droppleman, 1971). Mean DAS scores were calculated for both pre- and posttests for each of these subgroups and then subjected to another one-way analysis of variance ($F(2,352) = 31.55, p < .001$ at pretest; $F(2,352) = 29.35, p < .001$ at posttest). Similar results were obtained from the Newman-Keuls post hoc analysis, i.e., the top third had significantly higher DAS scores than the middle or bottom thirds of the group. In

Table 17

DAS Scores by Levels of Depression as Measured by the BDI

Pre BDI Score	Pre DAS Score			
	<u>N</u>	Mean	S.D.	<u>p</u>
Normal (0-9)	281	114.43	25.14	
Mild (10-15)	54	124.72	25.55	<u>F</u> = 15.58 .001
Moderate to Severe (16+)	20	145.20	34.97	

r = .36

Post BDI Score	Post DAS Score			
	<u>N</u>	Mean	S.D.	<u>p</u>
Normal (0-9)	282	114.05	23.55	
Mild (10-15)	48	131.94	27.34	<u>F</u> = 38.22 .001
Moderate to Severe (16+)	25	154.68	31.76	

r = .47

addition, the lower and middle thirds did not differ significantly at either testing (see Table 16).

A closer look at the mean scores in Tables 17 and 18 seem to suggest that there may be a curvilinear relationship between the DAS and the two measures on affect. This hypothesis will have to be tested at a later date with a sample which is not as skewed toward the normal end. However, these results affirm the construct validity of the DAS by the "known-groups method" (Crano & Brewer, 1973). In this technique various groups of persons known to differ on the attribute being tapped by the DAS were compared. If the DAS is really a measure of depressogenic attitudes, groups "known" to be different should generate clearly discriminable scale scores. The data clearly support this reasoning in a sample of nonpsychiatric college students.

Table 18

DAS Scores by Levels of Depression as Measured by the POMS D-Scale

Pre POMS (D-Scale) Scores	Pre DAS Scores				
	<u>N</u>	Mean	S.D.	Test	<u>p</u>
0-33rd percentile (bottom)	122	108.67	21.01		
34th-66th percentile (middle)	113	112.24	25.35	<u>F</u> = 31.55	.001
67th-100th percentile (top)	120	132.23	27.65		

r = .40

Post POMS (D-Scale) Scores	Post DAS Scores				
	<u>N</u>	Mean	S.D.	Test	<u>p</u>
0-33rd percentile (bottom)	122	109.85	22.21		
34th-66th percentile (middle)	113	114.76	22.53	<u>F</u> = 29.35	.001
67th-100th percentile (top)	120	133.45	30.07		

r = .44

CHAPTER V

Final Comments

Evaluation of the Dysfunctional Attitude Scale

The primary purpose of this research was to validate as measurable constructs the ideas Beck has proposed as dysfunctional attitudes and to design a written instrument sufficiently reliable and valid for research purposes to measure the extent to which persons hold these beliefs. On the basis of the data presented, it appears that this goal has been met successfully. Both forms of the DAS, consisting of 40 items each, have been shown to exhibit homogeneity and stability reliability, as well as content, congruent and construct validity.

These findings show that the DAS can be used in further research involving cognitive depressogenic attitudes, thereby providing a research tool or aid not before available. In addition, this instrument could be of considerable value not only as a screening device but perhaps also as a way into treatment. Many psychiatric populations are remarkably disinclined to verbalize psychological discomfort although they are more than ready to talk about somatic complaints. An instrument such as the DAS should be of value in at least orienting these individuals towards slightly more cognitive appraisal of their current situation and problems. The

exploratory clinical use of the DAS (not incorporated as part of this study) has shown many advantages offered by it. Like other clinical instruments, it provides an economical and simple shortcut to greater understanding of the nature of the patient's problem, in this case, by providing the therapist with information about his patient's dysfunctional thought pattern. Most importantly, the DAS affords a means of objectively measuring progress in therapy.

By going into the entire population, one can find individuals who may exhibit amounts of depression equal to those exhibited by individuals who come for treatment but who themselves never cross the threshold of a clinic or a therapist. This was true of approximately one-third of the sample investigated in this study. A knowledge of why they fail to do so may unearth some of the hidden factors separating the "ill" from the "well" as well as reveal individuals who need treatment but for some reason do not get it. Additional studies should be run to determine which items on the DAS most clearly distinguish the severely depressed individual from the depressed normal. It is hypothesized from the data presented that the thought processes will distinguish the two groups, not the central mood factor. They can be equally sad, lonely, etc., that is, equally depressed in mood, however; it is their dysfunctional attitudes which will be most revealing. A person experiencing a mild disturbance in his feelings or behavior may not be aware of his depressogenic schemas or attitudes - even

though they are accessible to consciousness. In such cases, the attitudes do not attract his attention, although they can exert an influence on how he feels and acts. By concentrating on these thoughts, however, he can easily recognize them. This phenomenon can be observed in people who have recovered from the acute phase of a psychological disturbance or who are only mildly disturbed (Beck, 1976).

Despite the present usefulness of the instrument as developed, a number of possible improvements could be made. Additional items should be gathered and analyzed to furnish a larger item pool. Not only may weaker items be replaced, but both forms of the scale may be lengthened slightly. Work should also be done to improve the instructions so as to eliminate confusion in responding. Many individuals cannot separate how they "think" (which is what the directions to the DAS state) from how they "feel" and this affects their results. According to Beck (1976), it is important for the individual to be able to make the distinction between "I believe" (an opinion that is subject to validation) and "I know" (an "irrefutable" fact). The ability to make this distinction is of critical importance in modifying the patient's reactions that are subject to distortion.

In short, in spite of the psychometric properties of DAS-A and DAS-B which were presented, like any development it should continue to be improved for maximum utility.

Questions Raised by the Data

Dysfunctional Attitudes and Gender

Both the pre-scores and post-scores on the DAS showed a mild relationship with sex; i.e., males tended to get higher scores on the tests than females, a finding which was not expected. Although these differences were quite small, one possible explanation could be that the sample of males (only 27% of the total) was not equivalent to the sample of females. One other reason for this result is possibly that DAS-A and DAS-B may be testing dysfunctional attitudes which are sex related; i.e., success-oriented items versus interpersonal ones. Prior research (Beck, 1967; 1976) has supported the notion that females are far more sensitive to interpersonal situations, i.e., needing to be loved, while males are more sensitive to failure, and items related to work situations. A detailed content analysis should be performed and the mean scores for males and females compared (according to content) to see if this explanation is valid. This analysis could be combined with the detailed factor-analytic study proposed in Chapter 2.

Discriminative Validity

More detailed studies must be performed to determine the power of the DAS to discriminate among various psychiatric groups. It is important to know that not only does the DAS discriminate among normals at varying levels of depression (shown in this study) but that the instrument is also sensitive enough to discriminate among

depressed psychiatric outpatients, nondepressed psychiatric outpatients and nondepressed or depressed nonpsychiatric outpatients. If, as Beck's theory predicts, people with psychiatric disorders will have more dysfunctional attitudes than those without psychiatric disorders, it is important to test whether the DAS is sensitive enough to reflect this.

In addition, a specific test of whether dysfunctional attitudes can be identified in a normal population and subsequently correlated with psychopathological symptomatic expression in individuals endorsing dysfunctional attitudes has not yet been undertaken. In order to conduct such a study, it would be necessary to identify a large subject population having the capacity to follow prospectively and measure repeatedly both their attitudes and their psychopathological symptoms. Furthermore, it would be important to identify specific life-stresses for the subject population in question. A study should be conducted to test the hypothesis that dysfunctional attitudes in normal subjects will be predictive of subsequent psychopathological symptomatology. Based on data reported in this study, it would be hypothesized that the greater the degree of endorsement of dysfunctional attitudes, the more frequent and/or the more severe the psychopathological symptomatology to be expected. Also, that specific life-stresses will interact with previously endorsed dysfunctional attitudes to result in psychopathological symptomatology.

Relationship Between Depression and Distortion

Additional research is required to demonstrate the nature of the relationship between depression and schemas, or, more generally between affect and depressogenic attitudes. The cognitive theory of emotional disorders (Beck, 1976) specifies the nature and degree of cognitive distortions in the specific psychopathological states. The theory suggests that cognitive changes precede the development of symptoms and the relief of symptoms. According to Beck (1976):

"In formulating his approach to depression, it is important for the therapist to distinguish among symptom, technique, and underlying attitudes. For example, the symptom may be affective, such as crying spells, sadness, loss of gratification, loss of sense of humor, apathy. The therapeutic approach may be behavioral, for example, mobilizing the patient into more activity and positively reinforcing certain types of activity. The underlying attitude, however, is the component that needs to be changed ultimately if the totality of the depression is to be influenced. Thus, the goal is cognitive modification." (pp. 267-268)

Data from this study did not fully support this view, primarily because of a number of methodological problems: (1) I was unable to control events in this study, i.e., schemas may or may not have been activated, and this affected my correlations and therefore, the "quasi-causal" conclusions; (2) The DAS was such a stable measure that the cross-correlations took on similar values and predicted differences in correlations has little opportunity to appear; (3) The interval of remeasurement may have been larger or

smaller than the causal interval; (4) There is the possibility that other factors are affecting one's level of depression. Since Beck's (1967; 1976) theory is stating that the affect comes directly from the cognition (which is a result of the depressogenic attitude), it may be this factor which has an intermediate effect; and, (5) the cognitive view of emotions may not fully explain the etiology of depression.

Additional research on this issue is required, especially that which employs some behavioral indices, rather than exclusively self-reports, on depressogenic schemas and their consequences. This multimodal approach to research is most likely the best way to facilitate one's understanding of dysfunctional attitudes.

Implications for Beck's Position

To the extent this study was structured to do so, the results show confirmation of Beck's theoretical system and position. His theory of dysfunctional attitudes in depressives was shown to be accurate in that they are functionally distinct constructs measurable in a normal, college population. Although causal relationships were not fully confirmed, the existence of highly significant functional relationships as hypothesized between dysfunctional attitudes (as measured by the DAS) and other indices of psychopathological symptomatology leaves strong implications of validity for Beck's approach.

Data must now be collected from a psychiatric population to see if one's dysfunctional attitudes can be changed in therapy and to get a better estimate of a remeasurement interval. The DAS has been shown to be a valid and reliable measure of dysfunctional attitudes in a population of normal college students, the next test is in a psychiatric population. The goal of cognitive-behavioral therapy is not simply to modify emotional behavior, percepts, and thoughts, but to help the individual to discover the operation of his cognitive unconscious so that he may learn how to learn, to truly develop, and thus to develop beyond therapy. The process of therapy is therefore a cognitive one which attempts to bring the patient closer to reality by rational methods even though it deals much of the time with the irrationalities of the patient.

Potential Value of the DAS

A psychotherapy change measure such as the DAS has a number of important uses:

- (1) Assess how various types of psychotherapies influence attitudes.
- (2) Identify effective ingredients in psychotherapy; i.e., to identify the techniques in various psychotherapy treatment packages which produce significant cognitive change and/or symptomatic relief. A measure of dysfunctional attitudes is essential to determine whether many of the techniques which espouse to change faulty beliefs do in fact perform as hypothesized.

(3) Identify subtypes of depressive syndromes which may be more or less responsive to cognitive-behavioral therapy.

(4) Identify patients at risk for relapse from depression. Recent evidence (Hauri, 1976) suggests that remitted neurotic depressives continued to evidence cognitive distortions (based on dream content studies). Beck (1976) suggests that relapsing patients continue to hold hypervalent schemas and therefore evidence cognitive distortions even when not symptomatic. If the DAS were used to identify these patients, additional treatment could be given to them.

(5) Identify persons who are at particular risk for developing depressive states before they are symptomatic (i.e., those with specific depressogenic attitudes). If these people could be identified, prevention techniques could be developed to preclude the onset of these kinds of disorders.

CHAPTER VI

Summary

The development and validation of an instrument to identify the common assumptions underlying the typical dysfunctional attitudes in depression was described. The questionnaire, called the Dysfunctional Attitude Scale (DAS), arose from the need to operationalize and evaluate Beck's (1967; 1976) hypotheses regarding the role of negativistic schemas in the origin and maintenance of depression.

Two parallel forms of the scale, each consisting of 40 items, elicit information on an individual's dysfunctional attitudes which act as schemas by which he construes his world. The validation of these two forms was made in a sample of 355 subjects, with the following results:

(1) Homogeneity reliability for the DAS-A and DAS-B ranged from .89 to .92. Stability based on eight-week test-retest correlations of scores was .84.

(2) Within this group of relatively normal college students, depressed students have higher DAS scores than nondepressed students. Support for this is based on the positive relationship between depressive affect (measured by the BDI or the POMS D-Scale) and dysfunctional attitudes (measured by the DAS). Individuals who had a tendency to think more negatively were likely to feel more depressed.

(3) Depressogenic attitudes were found to be more persistent over time than depressed mood, i.e., the test-retest data for the DAS was significantly higher than the results for either the BDI or the POMS D-Scale.

(4) The presence of depressogenic attitudes was more associated with depressed mood than with other mood disturbances.

(5) In the total populations employed there was no strong evidence to support the notion of depressogenic attitudes causing depressive affect. However, this aspect of the study was affected by a number of methodological problems and needs further controlled research.

(6) Differences in DAS scores among college students with varying levels of depression were investigated and found to be highly significant.

(7) The relationship of age, sex, race, and educational level to dysfunctional attitudes as measured by the DAS was also investigated. Both sex and educational level were related to DAS scores.

DAS-A and DAS-B are sufficiently reliable and valid as a measure of dysfunctional attitudes in a normal college student population. The next step is to determine the scale's psychometric properties in a psychiatric population as well as its utility for research and its effectiveness as a therapeutic screening device.

Additional suggestions for refinement of the DAS were made. Beck's theoretical position concerning the concept of depressogenic schemas was substantially confirmed. Further controlled investigations are needed to determine causal aspects of the relationship between dysfunctional attitudes and affect.



APPENDIX A

BIOGRAPHIC AND BACKGROUND

INFORMATION FORMS

DEMOGRAPHIC INFORMATION

Subject Code: _____ (First 4 letters of your mother's maiden name, then the first initial of her first name. Example: GROS B)

Sex:	_____ Male	Last Grade Completed:
	_____ Female	_____ Less than 7 years school
		_____ Junior High School (Grades 7,8,9)
Race:	_____ Black	_____ Partial High School (Grades 10,11)
	_____ Caucasian	_____ High School Graduate
	_____ Latin American	_____ Partial College Training
	_____ Other (_____)	_____ College Graduate
		_____ Graduate Professional Training

Age (in years): _____

Occupation:

Marital Status:

_____ Single	_____ Housewife
_____ Married	_____ Student
_____ Cohabitation	_____ Unskilled Blue Collar (manual laborer, waitress, etc.)
_____ Widowed	_____ Skilled Blue Collar (mechanic carpenter, policeman, etc.)
_____ Sep/living apart	_____ Clerk, secretary, office worker
_____ Divorced	_____ Teacher
	_____ Executive or owns business
	_____ Professional
	_____ None

Religion:

- Atheist
- Agnostic
- Protestant
- Catholic
- Jewish
- Other (_____)

Employment: (Do NOT answer if
housewife or student)

- Employed in a regular job
- Employed, but in a part-time
job
- Marginally employed (lawn
cutting, babysitting)
- Unemployed
- Retired

If you are presently enrolled in any courses, what is your grade point
average equal to? _____

BACKGROUND INFORMATION

1. Have you had any contact with a helping professional (Therapist, Physician, Social Worker, or Probation Officer) within the last month?
 YES
 NO

2. Have you had prior inpatient psychiatric treatment?
 None
 One inpatient experience (How long ago? _____)
 More than one (How long ago? _____)

3. If you had prior inpatient treatment, do you feel it was successful?
 YES
 NO
 NOT APPLICABLE

4. Have you ever had prior outpatient therapy?
 None
 Single evaluation session only (How long ago? _____)
 One therapy experience (How long ago? _____)
 More than one (How long ago? _____)

5. Was the outpatient therapy successful?
 YES
 NO
 NOT APPLICABLE

6. Are you presently involved in therapy?
 YES (What type? _____)
 NO

7. How has your life been during the past month? Has anything stressful occurred to cause you to become very sad? Has anything exciting occurred to cause you to become very happy? Explain these events in detail in the space below.

APPENDIX B

BECK DEPRESSION INVENTORY
(BDI)

BECK INVENTORY

Name _____ Date _____

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. 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.

- 1 0 I do not feel sad.
 1 I feel sad.
 2 I am sad all the time and I can't snap out of it.
 3 I am so sad or unhappy that I can't stand it.

- 2 0 I am not particularly discouraged about the future.
 1 I feel discouraged about the future.
 2 I feel I have nothing to look forward to.
 3 I feel that the future is hopeless and that things cannot improve.

- 3 0 I do not feel like a failure.
 1 I feel I have failed more than the average person.
 2 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.

- 4 0 I get as much satisfaction out of things as I used to.
 1 I don't enjoy things the way I used to.
 2 I don't get real satisfaction out of anything anymore.
 3 I am dissatisfied or bored with everything.

- 5 0 I don't feel particularly guilty.
 1 I feel guilty a good part of the time.
 2 I feel quite guilty most of the time.
 3 I feel guilty all of the time.

- 6 0 I don't feel I am being punished.
 1 I feel I may be punished.
 2 I expect to be punished.
 3 I feel I am being punished.

- 7 0 I don't feel disappointed in myself.
 1 I am disappointed in myself.
 2 I am disgusted with myself.
 3 I hate myself.

- 8 0 I don't feel I am any worse than anybody else.
 1 I am critical of myself for my weaknesses or mistakes.
 2 I blame myself all the time for my faults.
 3 I blame myself for everything bad that happens.

- 9 0 I don't have any thoughts of killing myself.
 1 I have thoughts of killing myself, but I would not carry them out.
 2 I would like to kill myself.
 3 I would kill myself if I had the chance.
- 10 0 I Don't cry anymore than usual.
 1 I cry more now than I used to.
 2 I cry all the time now.
 3 I used to be able to cry, but now I can't cry even though I want to.
- 11 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 now.
 3 I don't get irritated at all by the things that used to irritate me.
- 12 0 I have not lost interest in other people.
 1 I am less interested in other people than I used to be.
 2 I have lost most of my interest in other people.
 3 I have lost all of my interest in other people.
- 13 0 I make decisions about as well as I ever could.
 1 I put off making decisions more than I used to.
 2 I have greater difficulty in making decisions than before.
 3 I can't make decisions at all anymore.
- 14 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 that make me look unattractive.
 3 I believe that I look ugly.
- 15 0 I can work about as well as before.
 1 It takes an extra effort to get started at doing something.
 2 I have to push myself very hard to do anything.
 3 I can't do any work at all.
- 16 0 I can sleep as well as usual.
 1 I don't sleep 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 several hours earlier than I used to and cannot get back to sleep.
- 17 0 I don't get more tired than usual.
 1 I get tired more easily than I used to.
 2 I get tired from doing almost anything.
 3 I am too tired to do anything.

- 18 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.

- 19 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.

I am purposely trying to lose weight by eating less.
Yes _____ No _____

- 20 0 I am no more worried about my health than usual.
1 I am worried about physical problems such as aches and pains;
or upset stomach; or constipation.
2 I am very worried about physical problems and it's hard to
think of much else.
3 I am so worried about my physical problems, that I cannot
think about anything else.

- 21 0 I have not noticed any recent change 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 C

PROFILE OF MOOD STATES
(POMS)

The Profile of Mood States:

Permission was not granted to reproduce the Profile of Mood States (POMS) within this manuscript because of copyright procedures followed by the Educational and Industrial Testing Service.

Psychometric information on this scale, as well as copies for future use may be obtained by writing:

Educational and Industrial Testing Service
(EDITS)
San Diego, California 92107

APPENDIX D

STORY COMPLETION TEST
(SCT)

Story Completion Test

Peggy had joined a particular organization a couple of years ago because she was very committed to its goals and practices. She knew most of the members by now, and a few had even become fairly close friends. Peggy had never considered herself the "leader" type. Earlier in school she had been fairly active but had never really stood out. Several friends in her current group thought that her ideas were sound and they began to urge her to run for president of the organization in the upcoming election. Peggy was very reluctant at first, feeling she was unqualified, but finally she decided to run because she thought she did have energy and ideas to contribute. No woman had ever held the position before, but her friends thought she had a good chance to win. When elections were held, Peggy ran for presidency but she lost.

Put yourself in Peggy's place, trying as vividly as you can to imagine what she probably thought and felt.

1. When you first heard you'd lost, you immediately:
 - a. feel bad and imagine I've lost by a landslide.
 - b. shrug it off as unimportant.
 - c. feel sad and wonder what the total counts were.
 - d. shrug it off, feeling I've tried as hard as I could.

2. After the election, you conclude.
 - a. I feel really depressed about losing, but I'll continue to work for my goals once I get my enthusiasm back.
 - b. It's okay that I lost, since it's a useful illustration of the inevitable prejudice against female leadership.
 - c. I'm not a winner at anything. I never should have let myself be talked into running.
 - d. The campaign was a good experience even though I didn't win.

3. When you compare the winner's "platform" to yours, you think:
 - a. Mine was good for a first attempt, and was vastly better than my opponents.
 - b. Despite what my friends said, mine wasn't good at all.
 - c. I feel badly that I didn't do a better job on it, but I'll know next time.
 - d. Mine showed some inexperience but was pretty good for a first attempt.

Fred had started working in the main office last week. It felt like it had taken forever to find this job after he moved to L.A. He had grown up in a small town some distance away, and since he moved had met few people. The others who worked in the same office seemed friendly, although most of them were considerably older than he. One woman, Carolyn, was about his age, sort of pretty, but she worked down the hall and he saw her only occasionally. Taking his coffee break in the snack bar one afternoon, she came over and sat with him. They talked for awhile. He found her fun and pleasant, and they seemed to enjoy each other. The break ended and he had to get back to his office. He found himself thinking about her that afternoon - fantasizing about going out with her, wondering what she's like. He looked forward to seeing her the next day. At lunch the next afternoon, he sat alone in the snack bar and saw her come in. She saw him, smiled and waved, but she took her lunch to another empty table on the far side of the room.

Put yourself in Fred's place and try to imagine as vividly as you can what he might think and feel.

1. Your first reaction was to think:
 - a. I might consider being a little assertive and pursue her.
 - b. I'm unhappy that she prefers to eat alone this afternoon.
 - c. She dislikes me and wants me to get the message.
 - d. She's playing hard to get.
2. Seeing her makes you think of your romantic prospects in L.A., you imagine:
 - a. I get really discouraged about how hard it is to meet good people, but almost everyone has problems with it, too.
 - b. I feel like I'll never meet anyone who is interested in me.
 - c. I can't expect the first woman to come along to be the Big Romance.
 - d. Women in L.A. are awfully conceited.
3. Thinking back on your conversation with Carolyn, your judgment is:
 - a. I know she really was excited by me and I'm mystified about why she's avoiding me.
 - b. I'm afraid it wasn't as interesting as I first thought.
 - c. The conversation was pleasant; that probably had nothing to do with whether she's interested in me or not.
 - d. I must have failed at making a good impression.
4. Reflecting on your life here in L.A., you think:
 - a. I'll just have to wait and see what the future will bring; it's too soon to tell.
 - b. I have just about everything I want and I know I'll be a big hit in this town.
 - c. Loneliness is a big problem for me, but then I suppose it's also a problem for all newcomers.
 - d. No one in L.A. will ever really care about me, but at least I have a job.

Lisa and Jason have been dating for the past few months. Lisa is neither pretty nor ugly and has a pleasant personality. Jason is usually fun to be with and often takes her to nice restaurants and theaters. Tonight she seemed to be somewhat unhappy despite his attempts to start light-hearted conversations. He asked her if anything was wrong. She replied that she was having some problems at work that she didn't want to talk about, but was grateful for his concern. She seemed a little more cheerful after that.

Put yourself in Jason's place, trying to imagine as vividly as you can what he probably thought and felt.

1. You think about the future of this relationship and you imagine:
 - a. It's a pretty good relationship, and we're getting to know each other better as time goes on.
 - b. It's a pretty good relationship and I'm generally satisfied although I think the relationship has a few problems.
 - c. I would probably have a hard time finding someone else who would care about me, so I want to make this relationship work out.
 - d. It is not what I really want it to be, and that makes me sad, so I will leave myself open to contacts with other women.
2. You wonder why Lisa hasn't called for several days.
 - a. I decide I don't really know why and figure I should ask her.
 - b. All I can think of is that she must not care about me.
 - c. I imagine that she thinks so highly of me that she sometimes is afraid of risking rejection or pushing me too hard.
 - d. I feel unhappy about it but figure that things sometimes do not happen exactly the way one would like.
3. Why do you think her mood changed after you asked her if there was a problem?
 - a. I feel pleased and imagine I can be very therapeutic for her and most others.
 - b. I don't know why since it may have been due to any number of things, but I am happy that her mood changed.
 - c. I just don't understand her moods, which worries and upsets me even though I know it's very hard to really understand another person.
 - d. I wish I could believe that I had something to do with it, but I rarely have the ability to cheer anyone up.
4. You wonder why she got in the bad mood, and imagine that:
 - a. I feel badly that I don't understand her, but it's really difficult to understand everything about somebody else.
 - b. Like most people, she has a few problems that bother her.
 - c. It's because she's extremely immature and moody; but I, on the other hand, am calm and happy.
 - d. It's because she's dating the most bleak, plain man in the city.

Janice is a senior at a large university. She dislikes the lack of faculty-student contact, so she usually makes an effort to talk to her teachers outside the classroom. So after she received an average score on a midterm, she went to the professor, Dr. Smith, to talk over the test. Dr. Smith pointed out the correct answers and the reasons for them on the questions she missed. He also gave her some helpful tips on studying. After about 45 minutes, Dr. Smith said he was quite busy and hoped she would excuse him. He then walked her to the door and said it was nice talking to her.

Put yourself in Janice's place, trying to imagine as vividly as you can what she probably thought and felt.

1. Are you satisfied with your meeting with Dr. Smith?
 - a. Yes, because he was quite pleased with my visit and will probably give me a good grade in the course.
 - b. Although it's upsetting for me to realize it, I probably needed tips on studying.
 - c. Yes, he answered all my questions and I made a good contact.
 - d. No, he probably thinks I'm dumb, which is why he gave me tips on study habits.

2. Looking over the questions you missed, you decide:
 - a. It's not my fault, the teacher should make a better test.
 - b. Unfortunately, my performance on this test is indicative of my true ability. I'm a mediocre student.
 - c. I feel bad that I missed those questions.
 - d. Now that you've talked to the teacher, you hope you'll do better on the final.

3. You thought Dr. Smith was rather nice in walking you to the door. Your reaction to his gesture was:
 - a. Embarrassment. He was trying to hurry me out.
 - b. Appreciation that he realized that it was worth his time to help me.
 - c. Appreciation. He seemed interested and concerned.
 - d. Sort of sad and let down that the meeting had to end.

4. How did your meeting with the professor change your view of the large, impersonal university?
 - a. Dr. Smith helped to make the university seem less impersonal.
 - b. You realize that the faculty is always happy to talk with students.
 - c. Although Dr. Smith was willing to talk to me, I still feel lost and a little lonely at the large impersonal university.
 - d. Even though the professor was polite, I still felt that he resented my taking up so much of his time, and that made me feel bad.

Ellen was a graduate student, and she aspired to be a good teacher. It was very important to her to communicate well with others, and she liked the idea of turning students on to particular viewpoints that they may never have considered before. Her father had been a professor in a small college and although their relationship was strained at times, she had always respected her father and thought that being a professor was a good life. Ellen was a sensitive person - perceptive and insightful - and she was aware that part of her motivation stemmed from the role of being an "expert" and having people be impressed by her knowledge.

An opportunity to test her teaching skills arrived in the form of a class presentation that all the students in one of her seminars were required to make. Ellen probably put in a bit more than average preparation on her topic. When the day came for her presentation, she seemed calm and poised (although rather nervous on the inside). During her talk, students commented and asked questions; no one yawned or dozed. One question had been rather hard to answer. No one said anything to her afterwards since it was late in the day, everyone left immediately afterward.

Put yourself in Ellen's place and try to imagine as vividly as you can what she probably thought and felt.

1. You try to judge how well your talk went. You decide:
 - a. I clearly did the best job of anyone.
 - b. According to my own standards, I think it went okay.
 - c. I'm disappointed that no one complimented me.
 - d. I hoped someone would tell me it went well, but since no one said anything, I'm afraid it wasn't very good.

2. When you thought about it afterwards, the thing that mostly comes to mind is:
 - a. I feel good; relieved that the whole thing is over.
 - b. I feel disappointed that I didn't get feedback about how I'd done.
 - c. I feel bad about that one question I couldn't answer. I think it made me look ridiculous.
 - d. I feel good because now the teacher will see my genius.

3. You're wondering what grade you might be given for the presentation by the instructor.
 - a. I feel that because of that one question that stumped me, he'll conclude that I didn't really prepare well enough to earn an A.
 - b. I saw him nod once or twice, so he was really impressed and I'll get an A.
 - c. I'm quite worried about the grade but I don't know how he'll grade.
 - d. I think I'll get an A because it's a graduate seminar and because I clearly did as much as anyone else and an A is usual under these circumstances.

4. With respect to your future career as a college teacher, you conclude:
 - a. I'm afraid I won't make it because I know the competition for jobs is stiff.
 - b. I'm optimistic because I've always been lucky.
 - c. Since my seminar presentation didn't go very well, I feel pretty pessimistic about my chances.
 - d. I'm optimistic since my grades are good.

Lou is a sophomore, living in one of the dorms. He's moderately good looking, friendly, a bit on the quiet side, an A student. He frequently admires men of his age who appear to be outgoing, although he's aware of the disadvantages of that personality as well. One of his concerns is making friends. In his freshman year he kept busy with school work and maintained relationships he'd had in high school. But this year he has become more aware that he wants to meet people and make friends on campus. He's uncertain quite how to go about it.

Tonight is Friday night, and Lou can't deny to himself that he feels lonely. Most of the men on his floor are out for the evening or gone for the weekend. At the far end of the hall the men in two or three rooms are in tonight as well. While he's in the shower, he hears one of them mention plans for going out later for pizza to a place where they know some women are going to be.

Put yourself in Lou's place and try to imagine as vividly as you can how he might think and feel.

1. Your first reaction when you hear that they are going out is:
 - a. Unhappiness. They probably would have asked me to come if they liked me more.
 - b. Unhappiness and increased loneliness. Sounds like I'll be practically alone on the floor.
 - c. To wonder if they'd mind if I'd come along.
 - d. Relief. They seem unfriendly for not asking me, so I'm happy since I don't have to be with them.

2. Being alone on a Friday night:
 - a. doesn't bother me because I figure I'll have a date next weekend for sure.
 - b. upsets me and makes me feel lonely.
 - c. upsets me and makes me start to imagine endless days and nights by myself.
 - d. I can handle it because one Friday night alone isn't that important; probably everybody has spent one night alone.

3. You sit at your desk trying to get some reading done. Your mind keeps flashing on:
 - a. pleasant memories of a recent date I've had.
 - b. an upcoming blind date which I expect will go very well.
 - c. I'm lonely and down but everybody is lonely once in awhile.
 - d. the feeling that not having a date tonight is one of the most painful things I can imagine.

4. People have always told you that you have a nice smile. You're thinking about your looks now and feel:
 - a. it's unimportant what people think about my looks or anyone else's looks.
 - b. fairly satisfied about my looks.
 - c. really ugly and undesirable. When someone compliments my looks I think they're just being polite.
 - d. unhappy because even though I feel fairly good looking it didn't seem to be an asset in getting a date tonight.

APPENDIX E

DYSFUNCTIONAL ATTITUDE SCALE - FORM A
(DAS-A)

This inventory lists different attitudes or beliefs which people sometimes hold. Read EACH statement carefully and decide how much you agree or disagree with the statement.

For each of the attitudes, show your answer by placing a checkmark (✓) under the column that BEST DESCRIBES HOW YOU THINK. Be sure to choose only one answer for each attitude. Because people are different, there is no right answer or wrong answer to these statements.

To decide whether a given attitude is typical of your way of looking at things, simply keep in mind what you are like MOST OF THE TIME.

EXAMPLE:

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
1. Most people are O.K. once you get to know them.			✓				

Look at the example above. To show how much a sentence describes your attitude, you can check any point from totally agree to totally disagree. In the above example, the checkmark at "agree slightly" indicates that this statement is somewhat typical of the attitudes held by the person completing the inventory.

Remember that your answer should describe the way you think MOST OF THE TIME.

NOW TURN THE PAGE AND BEGIN

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
1. It is difficult to be happy unless one is good looking, intelligent, rich and creative.							
2. Happiness is more a matter of my attitude towards myself than the way other people feel about me.							
3. People will probably think less of me if I make a mistake.							
4. If I do not do well all the time, people will not respect me.							
5. Taking even a small risk is foolish because the loss is likely to be a disaster.							
6. It is possible to gain another person's respect without being especially talented at anything.							
7. I cannot be happy unless most people I know admire me.							
8. If a person asks for help, it is a sign of weakness.							

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
9. If I do not do as well as other people, it means I am an inferior human being.							
10. If I fail at my work, then I am a failure as a person.							
11. If you cannot do something well, there is little point in doing it at all.							
12. Making mistakes is fine because I can learn from them.							
13. If someone disagrees with me, it probably indicates he does not like me.							
14. If I fail partly, it is as bad as being a complete failure.							
15. If other people know what you are really like, they will think less of you.							
16. I am nothing if a person I love doesn't love me.							

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
17. One can get pleasure from an activity regardless of the end result.							
18. People should have a reasonable likelihood of success before undertaking anything.							
19. My value as a person depends greatly on what others think of me.							
20. If I don't set the highest standards for myself, I am likely to end up a second-rate person.							
21. If I am to be a worthwhile person, I must be truly outstanding in a least one major respect.							
22. People who have good ideas are more worthy than those who do not.							
23. I should be upset if I make a mistake.							
24. My own opinions of myself are more important than other's opinions of me.							

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
25. To be a good, moral, worthwhile person, I must help everyone who needs it.							
26. If I ask a question, it makes me look inferior.							
27. It is awful to be disapproved of by people important to you.							
28. If you don't have other people to lean on, you are bound to be sad.							
29. I can reach important goals without slave driving myself.							
30. It is possible for a person to be scolded and not get upset.							
31. I cannot trust other people because they might be cruel to me.							
32. If others dislike you, you cannot be happy.							
33. It is best to give up your own interests in order to please other people.							

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
34. My happiness depends more on other people than it does on me.							
35. I do not need the approval of other people in order to be happy.							
36. If a person avoids problems, the problems tend to go away.							
37. I can be happy even if I miss out on many of the good things in life.							
38. What other people think about me is very important.							
39. Being isolated from others is bound to lead to unhappiness.							
40. I can find happiness without being loved by another person.							

APPENDIX F

DYSFUNCTIONAL ATTITUDE SCALE - FORM B
(DAS-B)

This inventory lists different attitudes or beliefs which people sometimes hold. Read EACH statement carefully and decide how much you agree or disagree with the statement.

For each of the attitudes, show your answer by placing a checkmark (✓) under the column that BEST DESCRIBES HOW YOU THINK. Be sure to choose only one answer for each attitude. Because people are different, there is no right answer or wrong answer to these statements.

To decide whether a given attitude is typical of your way of looking at things, simply keep in mind what you are like MOST OF THE TIME.

EXAMPLE:

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
1. Most people are O.K. once you get to know them.			✓				

Look at the example above. To show how much a sentence describes your attitude, you can check any point from totally agree to totally disagree. In the above example, the checkmark at "agree slightly" indicates that this statement is somewhat typical of the attitudes held by the person completing the inventory.

Remember that your answer should describe the way you think MOST OF THE TIME.

NOW TURN THE PAGE AND BEGIN

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
1. You can be a happy person without going out of your way in order to please other people.							
2. I have to impress new acquaintances with my charm, intelligence, or wit or they won't like me.							
3. If I put other peoples' needs before my own, they should help me when I want them to do something for me.							
4. It is shameful for a person to display his weaknesses.							
5. People will like me even if I am not successful.							
6. People who have the marks of success (good looks, fame, wealth) are bound to be happier than people who do not.							
7. I should try to impress other people if I want them to like me.							

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
8. If a person I love does not love me, it means I am unloveable.							
9. I ought to be able to solve my problems quickly and without a great deal of effort.							
10. If a person is indifferent to me, it means he does not like me.							
11. I should be able to please everybody.							
12. Others can care for me even if they know all my weaknesses.							
13. If people whom I care about do not care for me, it is awful.							
14. Criticism need not upset the person who receives the criticism.							
15. My life is wasted unless I am a success.							
16. People should prepare for the worst or they will be disappointed.							

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
17. I must be a useful, productive, creative person or life has no purpose.							
18. A person should think less of himself if other people do not accept him.							
19. I do not need other people's approval for me to be happy.							
20. I can enjoy myself even when others do not like me.							
21. My value as a person depends greatly on what others think of me.							
22. If I make a foolish statement, it means I am a foolish person.							
23. If a person has to be alone for a long period of time, it follows that he has to feel lonely.							
24. A person should be able to control what happens to him.							

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
25. If a person is not a success, then his life is meaningless.							
26. A person doesn't need to be well liked in order to be happy.							
27. If someone performs a selfish act, this means he is a selfish person.							
28. I should always have complete control over my feelings.							
29. I should be happy all the time.							
30. If people consider me unattractive it need not upset me.							
31. Whenever I take a chance or risk I am only looking for trouble.							
32. A person cannot change his emotional reactions even if he knows they are harmful to him.							
33. I may be able to influence other people's behavior but I cannot control it.							

ATTITUDES	TOTALLY AGREE	AGREE VERY MUCH	AGREE SLIGHTLY	NEUTRAL	DISAGREE SLIGHTLY	DISAGREE VERY MUCH	TOTALLY DISAGREE
REMEMBER, ANSWER EACH STATEMENT ACCORDING TO THE WAY YOU THINK <u>MOST OF THE TIME</u> .							
34. People will reject you if they know your weaknesses.							
35. People should be criticized for their mistakes.							
36. One should look for a practical solution to problems rather than a perfect solution.							
37. If I do well, it probably is due to chance; if I do badly, it is probably my own fault.							
38. The way to get people to like you is to impress them with your personality.							
39. Turning to someone else for advice or help is an admission of weaknesses.							
40. A person should do well at everything he undertakes.							

INDEX

- Accommodation, 4
- Affect, 4, 7, 13, 15, 16, 17, 18, 19, 22, 27, 34, 47, 77, 95, 96, 98,
113, 125, 139
and cognition, 4, 13, 17, 19, 33, 36, 96, 139
depressive, 13, 17, 113, 139
and schemas, 23-29, 45, 113, 125, 139
- Age and DAS, 104, 144
- Attitude (see Schema)
social psychological definition, 7
- Background variables, correlations of, with DAS scores, 90, 101-106,
118, 144
- Beck Depression Inventory, 51, 73, 85
description, 74-75
descriptive statistics, 101-103
and DAS, 112, 115, 117, 118, 120-121, 122-128, 129, 131
factor analysis data, 77
and POMS, 112, 118, 123, 125
reliability, 76
and SCT, 112
statistics, 102, 105
used with medical patients, 76, 77
used with psychiatric patients, 76
validity, 76
- Behavior, anticipations influencing, 6, 17
- Beliefs, see Schemas
- Bryne's Repression-Sensitization Scale, 82
- Cognition
and affect, 4, 13, 17, 19, 33, 36, 96
arbitrary inference, 21, 28, 53
assumptions underlying, 2, 18, 45
automatic, 19
dichotomous reasoning, 29, 53
distortions of reality, 2, 13, 19, 21, 22, 28, 33, 45
and emotions, 3-9, 19, 24, 33, 34, 36
exaggeration, 21, 29
idiosyncratic, 2, 18, 22, 51
involuntary quality of depressive, 19
linguistic labelling, 34
minimization, 29, 53
overgeneralization, 21, 29, 53
personalization, 29
and psychopathology, 2, 13, 17, 36, 51, 138
and schemas, 23
selective abstraction, 29, 53
- Cognitive Behavioral Therapy, 32, 141

- Cognitive distortions,
 - affects related to, 51-52
 - characteristics of, 51
 - in depression, 45, 51, 52, 55, 62
- Cognitive learning approach, 3
- Cognitive modification, 15
- Cognitive psychotherapies, 37
- Cognitive structures, see Schemas
- Cognitive Triad, 1, 20-21
- Cross-lagged panel design, 90, 96-97, 99, 122-127

- Depression
 - cognitive model, 1, 12, 15, 17, 22, 36, 81, 82, 123, 134, 139, 140-141
 - concept of, 9-15
 - definition, 16-17
 - historical review of, 9-15
 - learning theory approaches, 13-14
 - psychoanalytic orientation, 11, 15, 22
 - and reinforcement, 13, 31-32
 - role of ego, 12, 30
 - and schemas, 139-140, 142
 - schematic classification of, 11
 - signs and symptoms, 10, 14, 15
 - therapy, 2, 22, 33, 36
 - thought disorders, 12, 18
- Depressogenic beliefs, see Schemas
- Depressogenic schemas, see Schemas
- Design of research, 85, 89, 91
- Dysfunctional Attitude Scale (DAS),
 - administration of, 83, 85
 - and BDI, 112, 115, 117, 118, 120-121, 122-128, 129, 131
 - congruent validity of, 111
 - construct validity of, 94-98, 115, 143
 - construction of, 50-55
 - content validity, 94
 - description of, 48, 83, 143
 - dimensionality of, 55, 83
 - discriminative ability, 128-132, 137-139, 144
 - evaluation of, 134-137
 - external criterion, 73
 - and extraneous variables, 90, 101-106, 118, 144
 - face validity, 54, 94
 - and factor analysis, 57-61, 95
 - hypotheses tested, 95-98
 - improvements, 136
 - item statistics of 108, 109
 - linear scaling, 93, 100-101
 - methodological problems, 139-140, 144

Dysfunctional Attitude Scale (continued)

parallel forms of, 62, 65-72
 and POMS, 112, 113-114, 116, 118, 122-128, 130, 133
 processing of data, 89-90
 rationale for, 2, 45, 48, 134, 143
 refinement of, 56-64
 reliability of, 62, 92-93, 106-107, 110-111, 118, 143,
 and SCT, 112, 113, 114
 subjects, 83-85
 test format, 48-50
 validity of, 93-95, 111-133, 143-144
 value of, 141, 142

Educational level and DAS, 104, 106, 144

Ellis Scale, 41Emotions,

assessment view of, 24
 behavioral view of, 8
 and cognitions, 19, 24, 33, 34, 36
 cognitive view of, 3-9
 and feelings, 7
 and perceptions, 6, 7
 theories of, 5-9
 and thinking, 6, 18, 22

Enchiridion, The

Errors in thinking, see Cognitions

Experimental studies of depression, 29-37

Gender and the DAS, 103, 137, 144

Guide to Rational Living, 41Hamilton Rating Scale of Depression, 51

Hostility and depression, 11

Insight therapy, 23

Irrational Belief Test , 38-39

Learned helplessness, 14

Likert scaling, 49, 83

Mania, 10

Melancholia, 10

Minnesota Multiphasic Personality Inventory (MMPI), 42Mood,

and reinforcement, 31

stability of, 118

Mourning and Melancholia, 11

Perception and emotions, 5, 6

Personal Belief Inventory (PBI), 39-40

Physiological arousal, and cognitive evaluation, 34, 35

Profile of Mood States (POMS), 73

description, 77-78

factor analysis data, 78, 79

norms, 79

relationship to BDI, 112, 118, 123, 125

relationship to DAS, 112, 113-114, 116, 118, 122-128, 130, 133

relationship to SCT, 112

reliability, 79

statistics, 102, 105, 114

used with normal college students, 79, 80

validity, 79

Race and DAS, 104, 144

Rules, see Schemas

Schemas,

assessment of, 46, 82, 114, 115

and cognitions, 23, 24, 45

definition of, 23, 45, 52, 73

depressogenic, 23-29, 43, 45, 46, 47, 50, 52, 73, 82, 96, 113, 114
115-118, 119, 127, 139-140

distortions of reality, 26

idiosyncratic, 25, 26, 28, 113

irrational, 8, 18

prepotent during depression, 19

and psychopathological symptomatology, 119, 138

relationship to behavior, 23, 48

stability of, 44, 47, 55

and thinking, 2, 25

Self Rating Scale for Rationality, 40-41Standards for Educational and Psychological Tests, 94

State versus trait measures, 44

Story Completion Test (SCT), 73, 85

description, 80-81

rationale, 80

relationship to BDI, 82, 112

relationship to DAS, 112, 113, 114

relationship to POMS, 112

reliability, 82

statistics, 101-103, 105

validity, 82

Technical Recommendations for Psychological Tests and Diagnostic Techniques, 111

Thinking,

distortions in, 19, 118, 119

dysfunctional attitudes, 2

and emotions, 6, 18, 22

Thinking (continued),
errors in, 2, 28, 36, 52
and feelings, 136
irrational assessment of, 37-43
processes and mood, 135
and schemas, 25
self evaluative thoughts, 6
Two Factor Index of Social Position, 84

References

- Abraham, K. Notes on the psychoanalytic investigation and treatment of manic-depressive insanity and allied conditions. Selected papers on psychoanalysis. New York: Basic Books, 1953. (Originally published, 1911).
- Adler, A. Social interest: a challenge to mankind. New York: Capricorn, 1964.
- American Psychological Association. Technical recommendations for psychological tests and diagnostic techniques. Psychological Bulletin, 1954, 51, 13-28.
- American Psychological Association. Standards for Educational and Psychological Tests. Washington, D.C.: 1974.
- Angoff, W. H. Basic equations in scaling and equating. In S. S. Wilks (Ed.), Scaling and equating College Board tests. Princeton, N.J.: Educational Testing Service, 1961.
- Argabrite, A. H. & Nidorf, L. J. Fifteen questions for rating reason. Rational Living, 1968, 3, 9-11.
- Arieti, S. The present status of psychiatric theory. American Journal of Psychiatry, 1968, 124, 1630-1639.
- Arnold, M. Emotion and personality. New York: Columbia University Press, 1960.
- Arnold, M. The nature of emotion. Baltimore, Md.: Penguin Books, 1968.
- Baisden, H. E. Assessment of irrational beliefs and irrational thinking. Paper presented at the First National Conference on Rational Psychotherapy, Chicago, 1975.

- Bandura, A. Principles of behavior modification. New York: Holt, Rinehart, & Winston, 1969.
- Bandura, A. Behavior theory and the models of man. American Psychologist, 1974, 29, 859-869.
- Bard, J. A. A self-rating scale for rationality. Rational Living, 1973, 8, 19(a).
- Bard, J. A. Rational proselytizing. Rational Living, 1973, 8, 24-26(b).
- Beck, A. T. A systematic investigation of depression. Comprehensive Psychiatry, 1961, 2, 162-170.
- Beck, A. T. Thinking and depression: 1. Idiosyncratic content and cognitive distortions. Archives of General Psychiatry, 1963, 9, 324-333.
- Beck, A. T. Thinking and depression: 2. Theory and therapy. Archives of General Psychiatry, 1964, 10, 561-571.
- Beck, A. T. Depression: Clinical, experimental, and theoretical aspects. New York: Harper and Row, 1967.
- Beck, A. T. Cognitive therapy: Nature and relation to behavior therapy. Behavior Therapy, 1970, 1, 184-200.
- Beck, A. T. Cognition, affect, and psychopathology. Archives of General Psychiatry, 1971, 24, 495-500.
- Beck, A. T. Depression: Causes and treatment. Philadelphia: University of Pennsylvania Press, 1972.
- Beck, A. T. The development of depression: A cognitive model. In R. Friedman & M. Katz (Eds.), Psychology of depression: Contemporary theory and research. Washington, D.C.: Winston-Wiley, 1974.

- Beck, A. T. Cognitive therapy and the emotional disorders. New York: International Universities Press, Inc., 1976.
- Beck, A. T., & Beamesderfer, A. Assessment of depression: The Depression Inventory. In P. Pichot (Ed.), Psychological Measurements in Psychopharmacology, (Modern Problems of Pharmacopsychiatry, Vol. 7). Basel, Switzerland: S. Karger, 1974.
- Beck, A. T., & Hurvich, M.S. Psychological correlates of depression. I. Frequency of "masochistic" dream content in a private practice sample. Psychosomatic Medicine, 1959, 21, 50-55.
- Beck, A. T., & Ward, C. H. Dreams of depressed patients: Characteristic themes in manifest content. Archives of General Psychiatry, 1961, 5, 462-467.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. An inventory for measuring depression. Archives of General Psychiatry, 1961, 4, 561-571.
- Becker, J. Depression: Theory and research. Washington, D.C.: V. H. Winstons and Sons, Inc., 1974.
- Bergin, A. E. Cognitive therapy and behavior therapy: Foci for a multidimensional approach to treatment. Behavior Therapy, 1970, 1, 205-212.
- Bessai, J. A factorial assessment of irrational beliefs. Unpublished master's thesis, The Cleveland State University, 1976.
- Bibring, E. The mechanism of depression. In P. Greenacre (Ed.), Affective disorders. New York: International Universities Press, 1953.
- Bibring, E. The mechanism of depression. In W. Gaylin (Ed.), The meaning of despair. New York: Science House, 1968.

- Bowlby, J. Grief and mourning in infancy and early childhood. The Psychoanalytic Study of the Child, 1960, 15, 9-52.
- Brewer, W. F. There is no convincing evidence for operant or classical conditioning in adult humans. In W. B. Weimer & D. W. Palermo (Eds.), Cognition and the symbolic process. New York: Halsted Press, 1974.
- Burnett, A., & Thompson, G. Anxiety Scale ratings in educable retardates. Paper presented at the American Association of Mental Deficiency Regional Conference. October, 1963.
- Byrne, D. Repression - sensitization as a dimension of personality. In B. A. Maher (Ed.), Progress in experimental personality research (Vol. 1). New York: Academic Press, 1964.
- Campbell, D. T. From description to experimentation: Interpreting trends as quasi-experiments. In C. W. Harris (Ed.), Problems in measuring change. Madison: University of Wisconsin Press, 1963.
- Campbell, D. T., & Stanley, J. C. Experimental and quasi-experimental designs for research and teaching. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand McNally, 1963.
- Castaneda, C. A separate reality: Further conversations with Don Juan. New York: Pocket Books, 1972.
- Cattell, R. B., & Scheier, I. H. The meaning and measurement of neuroticism and anxiety. New York: Ronald, 1961.
- Crano, W. D. Causal analyses of the effects of socioeconomic status and initial intellectual endowment on patterns of cognitive development and academic achievement. In D. R. Green (Ed.), The aptitude-achievement distinction. New York: McGraw-Hill, 1973.

- Crano, W. D., & Brewer, M. B. Principles of research in social psychology. New York: McGraw-Hill, Inc., 1973.
- Crano, W. D., Kenny, D. A., & Campbell, D. T. Does intelligence cause achievement? A cross-lagged panel analysis. Journal of Educational Psychology, 1972, 63, 258-275.
- Cronbach, L. J. Coefficient alpha and the internal structure of tests. Psychometrika, 1951, 16, 297-334.
- Cronbach, L. J. Test Validation. In R. L. Thorndike (Ed.), Educational Measurement (2d ed.). Washington, D.C.: American Council on Education, 1971.
- Cronbach, L. J., & Meehl, P. F. Construct validity in psychological tests. Psychological Bulletin, 1955, 52, 281-302.
- Dahlstrom, W. G., & Welsh, G. S. An MMPI handbook. Minneapolis: University of Minnesota Press, 1962.
- Delay, J., Pichot, P., Lemperiere, T., & Mircuze, R. La nosologie des etats depressifs. Rapports entre l'etiologie et la semiologie. II. Resultats du questionnaire de Beck. Encephale, 1963, 52, 497-505.
- Dempsey, P. The dimensionality of the MMPI clinical scales among normal subjects. Journal of Consulting Psychology, 1963, 27, 492-497.
- Dempsey, P. A unidimensional depression scale for the MMPI. Journal of Consulting Psychology, 1964, 28, 364-371.
- Duff, F. Item subtlety in personality inventory scales. Journal of Consulting Psychology, 1965, 29, 565-570.
- D'Zurilla, I. J., & Goldfried, M. R. Problem solving and behavior modification. Journal of Abnormal Psychology, 1971, 78, 107-126.

- Edwards, A. L. Techniques of attitude scale construction. New York: Appleton-Century Crofts, Inc., 1957.
- Ellis, A. Reason and emotion in psychotherapy. New York: Lyle Stuart, 1962.
- Ellis, A., & Harper, R. A. A new guide to rational living. Englewood Cliffs, N.J.: Prentice-Hall, and Hollywood: Wilshire Books, 1975.
- Epictetus. Discourses of Epictetus. (G. Long, trans.). London: George Bell and Sons, 1888.
- Estes, W. K. Reward in human learning: Theoretical issues and strategic choice points. In R. Glaser (Ed.), The nature of reinforcement. New York: Academic Press, 1971.
- Ferster, C. Classification of behavioral pathology. In L. Krasner & L. Ullman (Eds.), Research in behavior modification. New York: Holt, Rinehart, and Winston, Inc., 1965.
- Fieve, R. A. Depression in the 70's. Princeton, N.J.: Excerpta Medica, 1971.
- Fishbein, M. Attitude and the prediction of behavior. In M. Fishbein (Ed.), Readings in attitude theory and measurement. New York: Wiley, 1967, 477-492.
- Freud, S. Mourning and melancholia. In Collected Papers (Vol. 4). New York: Basic Books, 1959. (Originally published, 1917.)
- Friedman, A. S. Minimal effects of severe depression on cognitive functioning. Journal of Abnormal Psychology, 1964, 69, 237-243.

- Friedman, R. J. The psychology of depression: An overview. In R. Friedman & M. Katz (Eds.), The psychology of depression: Contemporary theory and research. Washington, D.C.: Winston-Wiley, 1974.
- Goldberg, L. R., & Slovic, P. Importance of test item content: An analysis of a corollary of the deviation hypothesis. Journal of Counseling Psychology, 1967, 14, 462-472.
- Goldfried, M. R., Decentecce, E. T., & Weinberg, L. Systematic rational restructuring as a self control technique. Behavior Therapy, 1974, 5, 247-254.
- Gulliksen, H. Theory of mental tests. New York: John Wiley and Sons, 1950.
- Hamilton, M. A rating scale for depression. Journal of Neurology, Neurosurgery and Psychiatry, 1960, 23, 56-62.
- Hammen, C. L., & Glass, D. R. Depression, activity, and evaluation of reinforcement. Journal of Abnormal Psychology, 1975, 84, 718-721.
- Hammen, C. L., & Krantz, S. Effect of success and failure on depressive cognitions. Journal of Abnormal Psychology, 1976, 85, 577-586.
- Hammen, C. L. & Peters, S. D. Interpersonal consequences of depression: Responses to men and women enacting a depressed role. Journal of Abnormal Psychology, 1978, in press.
- Hartman, B. J. Sixty revealing questions for 20 minutes. Rational Living, 1968, 3, 7-8.
- Haskell, D. E., Pugatch, D., & McNair, D. M. Time-limited psychotherapy for whom? Archives of General Psychiatry, 1969, 21, 546-552.

- Hathaway, S. R., & McKinley, J. C. A multiphasic personality schedule (Minnesota: III. The measurement of symptomatic depression). Journal of Psychology, 1942, 14, 73-84.
- Hauri, P. Dreams in patients remitted from reactive depression. Journal of Abnormal Psychology, 1976, 85, 1-10.
- Henryssen, S. Gathering, analyzing, and using data on test items. In R. L. Thorndike (Ed.), Educational Measurement (2d ed.). Washington, D.C.: American Council on Education, 1971.
- Hevner, K. An empirical study of three psychophysical methods. Journal of General Psychology, 1930, 4, 191-212.
- Hollingshead, A. B. Two-factor index of social position. Unpublished manuscript, 1957. (Available from A. B. Hollingshead, 1965 Yale Station, New Haven, Conn.)
- Horst, P. Personality: Measurement of dimensions. San Francisco: Jossey-Bass, Inc., 1968.
- Izard, C. E. The face of emotion. New York: Appleton-Century-Crofts, 1971.
- Izard, C. E. Human emotions. New York: Plenum Press, 1977.
- James, W. What is emotion? Mind, 1884, 19, 188-205.
- Jones, R. G. A factored measure of Ellis' irrational belief system with personality and maladjustment correlates. Unpublished doctoral dissertation, Texas Technological College, 1968.
- Katz, D., & Stotland, E. A preliminary statement to a theory of attitude structure and change. In S. Koch (Ed.), Psychology: A study of science (Vol. 3). New York: McGraw-Hill, 1959.
- Kelly, G. A. The psychology of personal constructs. New York: Norton, 1955.

- Kenny, D. A. Cross-lagged panel correlation: A test for spuriousness. Psychological Bulletin, 1975, 82, 887-903.
- Kerlinger, F. N., & Pedhazur, E. J. Multiple regression in behavior research. New York: Holt, Rinehart, and Winston, Inc., 1973.
- Klein, M. Oedipus complex in the light of early anxieties. In Contributions to psychoanalysis: 1921-1945. London: Hogarth Press, 1948. (Originally published, 1945.)
- Kovacs, M. & Beck, A. T. Maladaptive cognitive structures in depression. American Journal of Psychiatry, 1978, 135, 525.
- Kraepelin, E. Manic-depressive insanity and paranoia. In R. M. Barclay (Trans.), Textbook of Psychiatry. Edinburgh: Livingstone, 1913.
- Krantz, S., & Hammen, C. L. The assessment of cognitive bias in depression. Manuscript submitted for publication, 1978.
- Lane, S. H., Bessai, J. L., & Bard, J. A. Irrational beliefs assessment. Paper presented at the First National Conference on Rational Psychotherapy, Chicago, June 1975.
- Lazarus, A. A. In support of technical eclecticism. Psychological Reports, 1967, 21, 415-416.
- Lazarus, A. A. Learning theory and the treatment of depression. Behavioral Research and Therapy, 1968, 6, 83-89.
- Lazarus, A. A. Behavior therapy and beyond. New York: McGraw-Hill, 1971.
- Lazarus, A. A. Multimodal behavior therapy. New York: Springer, 1976.
- Lazarus, R. S. Psychological stress and the coping process. New York: McGraw-Hill, 1966.

- Lazarus, R. S., Averill, J. R., & Upton, E. M. Toward a cognitive theory of emotion. In M. Arnold (Ed.), Feelings and emotions. New York: Academic Press, 1970.
- Lewinsohn, P. A behavioral approach to depression. In R. Friedman & M. Katz (Eds.), Psychology of depression: Contemporary theory and research. Washington, D.C.: Winston-Wiley, 1974.
- Lewinsohn, P., & Graf, M. Pleasant activities and depression. Journal of Consulting and Clinical Psychology, 1973, 41, 261-268.
- Lewinsohn, P., & Libet, J. Pleasant events, activity schedules, and depression. Journal of Abnormal Psychology, 1972, 79, 291-295.
- Likert, R. A technique for the measurement of attitudes. Archives of Psychology, 1932, 140, 1-55.
- Loeb, A., Beck, A. T., & Diggory, J. Differential effects of success and failure on depressed and nondepressed patients. The Journal of Nervous and Mental Disease, 1971, 152, 106-114.
- Loeb, A., Feshbach, S., Beck, A. T., & Wolf, A. Some effects of reward upon the social perception and motivation of psychiatric patients varying in depression. Journal of Abnormal and Social Psychology, 1964, 68, 609-616.
- Lord, F. M. Notes on comparable scales for test scores. Educational Testing Service. Research Bulletin, 1950, No. 48.
- Lorr, M., Daston, P., & Smith, I. R. An analysis of mood states. Education and Psychological Measurement, 1967, 27, 89-96.
- Lorr, M., & McNair, D. M. Correlates of length of psychotherapy. Journal of clinical psychology, 1964, 20, 497-504.

- Lorr, M., McNair, D. M., & Weinstein, G. J. Early effects of chlor-diazepoxide (Librium) used with psychotherapy. Journal of Psychiatric Research, 1963, 1, 257-270.
- Lorr, M., McNair, D. M., Weinstein, G. J., Michaux, W. W., & Raskin, A. Meprobamate and chlorpromazine in psychotherapy. Archives of general psychiatry, 1961, 4, 381-389.
- Lott, A. Social psychology. In B. Wolman (Ed.), Handbook of general psychology. Englewood Cliffs, N.J.: Prentice-Hall, 1973.
- MacDonald, A. P., & Games, R. G. Ellis' irrational values. Rational Living. 1972, 7 (2), 25-28.
- Mahoney, M. J. Cognition and behavior modification. Cambridge, MA.: Ballinger Publishing Company, 1974.
- Mahoney, M. J. Reflections on the cognitive - learning trend in psychotherapy. American Psychologist, 1977, 32, 5-13.
- Mandler, G. Mind and emotion. New York: John Wiley and Sons, Inc., 1975.
- McNair, D. M., & Lorr, M. An analysis of mood in neurotics. Journal of abnormal and social psychology, 1964, 69, 620-627.
- McNair, D. M., Lorr, M., & Droppleman, L. F. Profile of mood states (POMS). San Diego, CA.: Educational and Industrial Testing Service, 1971.
- Mehrens, W. A., & Lehmann, I. J. Measurement and evaluation in education and psychology. New York: Holt, Rinehart, Winston, Inc., 1973.
- Meichenbaum, D. Ways of modifying what clients say to themselves: A marriage of behavior therapies and rational-emotive therapy. Rational Living, 1972, 7, 23-27.

- Meichenbaum, D. Cognitive - behavior modification. Morristown, N.J.: General Learning Press, 1974.
- Meichenbaum, D. Toward a cognitive theory of self-control. In G. Schwartz & D. Shapiro (Eds.), Consciousness and Self-Regulation: Advances in Research (Vol. 1). New York: Plenum, 1976.
- Mendels, J. Concept of depression. New York: John Wiley and Sons, Inc., 1970.
- Mendelson, M. Intrapersonal psychodynamics of depression. In F. F. Flach & S. C. Draghi (Eds.), The nature and treatment of depression. New York: John Wiley and Sons, 1975.
- Metcalf, M., & Goldman, E. Validation of an inventory for measuring depression. British Journal of Psychiatry, 1965, 111, 240-242.
- Mischel, W. Toward a cognitive social-learning reconceptualization of personality. Psychological Review, 1973, 80, 252-283.
- Norman, W. T. Relative importance of test item content. Journal of Consulting Psychology, 1963, 27, 166-174.
- Nussbaum, K., Wittig, B. A., Hanlon, T. E., & Kurland, A. A. Intravenous nialamide in the treatment of depressed female patients. Comprehensive Psychiatry, 1963, 4, 105-116.
- O'Connor, J. P., Stefic, E. C., & Gresock, C. J. Some patterns of depression. Journal of Clinical Psychology, 1957, 13, 122-125.
- Pehm, L. Assessment of depression. In M. Hersen & A. Bellach (Eds.), Behavioral assessment - A practical handbook. Oxford: Pergamon Press, 1976.
- Pelz, D. C. & Andrews, F. Detecting causal priorities in panel study data. American Sociological Review, 1964, 29, 836-848.

- Peters, C. C., & Van Voorhis, W. R. Statistical procedures and the mathematical bases. New York: McGraw-Hill, 1940.
- Piaget, J. The psychology of intelligence. London: Routledge and Kegan Paul, 1950. (Originally published, 1947.)
- Pichot, P., Piret, J., & Clyde, D. J. Analyse de la symptomatologie depressive subjective. Revue Psychologie Applique, 1966, 16, 103-115.
- Rensberger, B. Emotional disorders and mental illness: Psychiatrists debate cause-effect relationship. The New York Times, April 7, 1977, p. A21.
- Robertson, J., & Bowlby, J. Responses of young children to separation from their mothers. Courrier Centre Inter Enfance, 1952, 2, 131-142.
- Rotter, J. B., Chance, J. E., & Phares, E. J. (Eds.), Applications of a social learning theory of personality. New York: Holt, Rinehart, & Winston. 1972.
- Rozelle, R. M. & Campbell, D. T. More plausible rival hypotheses in the cross-lagged panel correlation technique. Psychological Bulletin, 1969, 71, 74-80.
- Schachter, S. The interaction of cognitive and physiological determinants of emotional states. In P. Leiderman & D. Schapiro (Eds.), Psychobiological approaches to social behavior. Stanford: Stanford University Press, 1964.
- Schachter, S. The interaction of cognitive and physiological determinants of emotional state. In C. D. Spielberger (Ed.), Anxiety and behavior. New York: Academic Press, 1966.

- Schachter, S. Emotion, obesity, and crime. New York: Academic Press, 1971.
- Schachter, S., & Singer, J. E. Cognitive, social and physiological determinants of emotional state. Psychological Review, 1962, 69, 379-399.
- Schwab, J. J., Bialow, M., Brown, J. M., & Holzer, C. E. Diagnosing depression in medical inpatients. Annals of Internal Medicine, 1967, 67, 695-707(a).
- Schwab, J. J., Bialow, M., & Holzer, C. E. A comparison of two rating scales for depression. Journal of Clinical Psychology, 1967, 23, 94-96(b).
- Seligman, M. E. P. Learned helplessness and depression. In R. Friedman & M. Katz (Eds.), Psychology of depression: Contemporary theory and research. Washington, D.C.: Winston-Wiley, 1974.
- Seligman, M. E. P., & Maier, S. F. Failure to escape traumatic shock. Journal of experimental psychology, 1967, 74, 1-9.
- Seligman, M. E. P., Maier, S. F., & Geer, J. The alleviation of learned helplessness in the dog. Journal of Abnormal and Social Psychology, 1968, 73, 256-262.
- Shibles, W. Emotion: The method of philosophical therapy. Whitewater, Wisconsin: The Language Press, 1974.
- Singer, J. L. The child's world of make-believe: Experimental studies of imaginative play. New York: Academic Press, 1973.
- Skinner, B. F. Science and human behavior. New York: Alfred A. Knopf, 1953.
- Skinner, B. F. Beyond freedom and dignity. New York: Knopf, 1971.

- Spielberger, C. D. The effects of anxiety on complex learning and academic achievement. In C. D. Spielberger (Ed.), Anxiety and behavior. New York: Academic Press, 1966.
- Spitz, R. Anaclitic depression: An inquiry into the genesis of psychiatric conditions in early childhood. The Psychoanalytic study of the child, 1942, 2, 313-342.
- Staats, A. W. Language behavior therapy: A derivative of social behaviorism. Behavior Therapy, 1972, 3, 165-192.
- Steiner, I. Perceived freedom. In L. Berkowitz (Ed.), Advances in experimental social psychology. New York: Academic Press, 1970.
- Taylor, C. P. Sex-linked personality factors in delinquents. Report to Boulder County Juvenile Court. Boulder, Colorado, 1966.
- Thorndike, R. L. Educational measurement for the Seventies. In R. L. Thorndike (Ed.), Educational Measurement (2d Ed.). Washington, D.C.: American Council on Education, 1971.
- Tomkins, S. S. Affect, imagery, consciousness. (Vol. I). The positive affects. New York: Springer, 1962.
- Velicer, W. F., & Stevenson, J. F. The relation between item format and the structure of the Eysenck Personality Inventory. Applied Psychological Measurement, 1978, 2(2), 293-304.
- Velten, E. A laboratory task for induction of mood states. Behavior Research and Therapy, 1968, 6, 473-482.
- Watson, J. B. Behavior, an introduction to comparative psychology. New York: Holt, Rinehart and Winston, 1914.

Weiner, M. L. The cognitive unconscious: A Piagetian approach to psychotherapy. New York: International Psychological Press, Inc., 1975.

Weintraub, M., Segal, R. M. & Beck, A. T. An investigation of cognition and affect in the depressive experiences of normal men. Journal of Consulting and Clinical Psychology, 1974, 42, 911.

Wheeler, E. E. Anxiety, mental ability, and reported views of self. School Counselor, October, 1965, 33-35.

Wiggins, J. S. Substantive dimensions of self-report in the MMPI item pool. Psychological Monographs, 1966, 80 (22, whole No. 630).