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FACTORS OF DEPRESSION IN THE ELDERLY: ASSESSMENT  
AND IMPLICATIONS FOR DIAGNOSIS

DISSERTATION

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Nancy Kunsak, M.S.

Denton, Texas

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The problem of assessment and diagnosis of depression in the elderly begins with the definition of depression being indefinite. In this study, the theory of learned helplessness was chosen because of its value in organizing research within a learning theory framework. The Beck Depression Inventory, measures of fluid and crystallized intellectual ability, locus of control, and attribution of success and failure were chosen as variables for an exploratory factor analysis.

The purpose of selecting these variables was to assess the cognitive, motivational, and affective components of learned helplessness as they affected the responses of elderly subjects to depression items. Self report measures of income, education, and health, were included to assess the relationship of these variables to depression. A somatic factor was predicted to correlate with an affective factor of depression.

Elderly individuals, ranging in age from 60 to 90, were recruited from metropolitan Dallas-Fort Worth and its

suburbs, rural areas, and small towns through newspaper articles, flyers through the mail, and community meetings. The sample was equal with regard to number of men and women, with the total number of subjects being 400. Level of education and rating of health for subjects were comparable to that of the national average of the elderly living in the United States. The sample was positively biased for yearly income.

Two hypotheses were tested: 1) elderly depression is described by four factors: somatic, affective, motivational, and cognitive; 2) measures of fluid and crystallized intellectual ability and active and passive memory will load on each of the four factors. The results of the factor analysis did not support the hypotheses. Selection of a sample with a low incidence of depression was suggested as one explanation for the absence of a factor including sad affect. The Scree Test applied to the data resulted in five factors, including Ability, Negative Self-Evaluation, Effort-Difficulty, Locus of Control, and Luck Attribution.

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## CHAPTER I

### INTRODUCTION

Depression in the elderly is a phenomenon that is not well-defined, well-understood nor well-diagnosed despite its prevalence among older persons. Consequently, current research investigating the nature of depression in the elderly presents conflicting findings. Part of the difficulty stems from there being no single theoretical model of depression that has broad support in the field of psychology (Gallagher & Thompson, 1983). One definition for depression has grown out of observations of symptoms in patients suffering from depression. Depression, in current diagnostic thinking, is a "final common pathway" reflecting simultaneous disturbance in a number of domains: biological, sociological, and psychological (Gallagher & Thompson, 1983). When these diverse disturbances can be easily observed or inferred via the impairment of an individual's functioning or because of his or her own identification of his or her state as depressed, a diagnosis can be made. In the absence of obvious symptoms, assessment techniques must be used to elicit the information necessary to make an accurate diagnosis.

### Diagnosis of Depression in the Elderly

The diagnosing of depression in an elderly individual is a task which is often performed inaccurately (Wells, 1979). Moreover, symptom clusters indicate depression in younger individuals are misleading if they are the standard used to assess the elderly. For example, it is typical for a clinician to question a client as to mood state in the course of an assessment of the client's adjustment. A young to middle-aged adult might be willing to describe his or her depression as a "blue mood" or simply as depression. However, elderly adults tend to be less willing to admit to psychological problems. They may describe themselves as having a pessimistic outlook or as feeling helpless, but seldom as depressed (Gallagher & Thompson, 1983). Although diagnostic significance of such descriptions of mood would not be elusive in a psychiatric interview performed by a clinician experienced in working with elderly patients, however, in a self-report inventory, such evasiveness on the part of the patient may result in a misdiagnosis. Moreover, self-report inventories are also often difficult for some elderly persons to understand. They misunderstand the meaning and intent of questions designed to probe their personal history (Gallagher and Thompson, 1983). As a result they may provide vague or incorrect responses. A false negative evaluation could be the result of such an



evaluation, and the individual would be deprived of the resources available to treat his or her depression.

Standard self-report measures may not provide an accurate assessment of all of the factors involved in elderly depression. The Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1965), a widely used clinical and research diagnostic tool, is accurate in distinguishing major depressive disorders from the absence of depression. However, it is not sensitive enough to assess the mild to moderate range of depression (Gallagher, Breckenridge, Steinmetz, & Thompson, 1983). Such tools may not detect factors that are prominent in elderly depression, as it has been established that the aged may not admit to the more obvious symptoms of depression.

#### Factor Analysis of Self-Report Depression Inventories

The factor analytic studies performed on the BDI have primarily involved using college student samples. One of the earliest of these analyses was performed by Weckowicz, Muir, and Cropley (1967). The factor named "Affective" or "Guilty Depression" accounted for the greatest amount of variance. The factor named "Retarded Depression" accounted for the next greatest amount of variance. The Beck items labeled Work Inhibition, Fatigue, Lack of Satisfaction, Depressed Mood, Somatic Preoccupation and Indecisiveness loaded on the factor named "Retarded Depression." The

factor named "Somatic Disturbance" included items from the inventory related to weight loss, loss of appetite, and sleep disturbance. A possible fourth factor including items concerning loss of libido, body image, crying spells and tearful depression suggested a component of depression with hysterical features. Later factor analyses seemed to include these factors and others that could possibly be seen as related to the first three factors. For example, Gould's (1982) five factors are: negative sense of self; physical symptoms; physical symptoms; tiredness, and guilt. Kammer (1982) found four factors of depression in her factor analysis of the BDI results of German college students: guilt, self-punitiveness, somatic disturbance, and sadness, but did not delineate a factor that was comparable to Weckowicz's "Retarded Depression." Faravelli's analysis (1982) resulted in six factors: nuclear depression, self-blame, anxiety, insomnia, weight loss, and diurnal variations.

A factor analysis of the Depression Scale of the Minnesota Multiphasic Personality Inventory administered to a group of individuals 60 years of age and older, a group 40-59 years old, and a group 20-39 years old indicated significant differences in the expression of depression (Dye, Bohm, Anderten, & Cho, 1983). A central core of items that accounted for approximately half the variance in all

three groups was found, indicating some commonality across age groups in the nature of the depressive syndrome. A significant qualitative difference in the elderly group was the absence of concern over declining physical well-being as part of the central core of elderly depression. Such results are important considerations when evaluating the factors of depression found in young adults in comparison to those of elderly depression.

Some commonality in the depressive syndrome between young adult and old age groups does exist, particularly in severe, major depressive disorders (Dessonville, Gallagher, Thompson, Finnell, & Lewinsohn, 1982). However, differences may exist in elderly depression as a function of more complex relationships between factors such as somatic disturbance and the process of normal aging. This somatic component of elderly depression suggests the need to carefully assess the factors of elderly depression and to avoid making assumptions based on a one-to-one correspondence between depression in college students and the elderly.

#### Cognitive Impairment and Depression

Cognitive dysfunctioning has been identified as an effect of depression. The bulk of research, to date, focuses on performance deficits in college students. On a set of interpersonal and academic tasks, mildly depressed

college students responded less competently than did nondepressed (Fisher-Beckfield & McCall, 1982). Depression has a detrimental effect on the problem-solving performance of college students (Hasher & Zacks, 1979; Kennelly, Crawford, Waid, & Rahaim, 1980) and the elderly (Kennelly, Hayslip, & Richardson, 1985). When considering cognitive deficits in the depressed elderly, however, it is important to first carefully consider the effects of normal aging on short-term memory capacity. Research findings suggest that attentional resources available to younger adults are impaired among aged persons (Botwinick & Storandt, 1980; Craik, 1977; Hayslip & Kennelly, 1982; Plude, Hoyer, & Lazar, 1982; Schonfield & Robertson, 1966; Storandt, 1980). Hayslip and Kennelly (1982) suggest that passive memory span, which is an automatic cognitive process requiring minimal effort, can be isolated from effortful short-term memory. Examples of both types of short-term memory are the forward WAIS digit span task and the backward WAIS digit span task, respectively (Wechsler, 1955). Both passive and effortful short-term memory are vulnerable to the decline in attentional capacity that comes as a part of normal aging. However, the effects of depression are differential in respect to the two types of short-term memory. Forward digit span is vulnerable to mild depression, while backward digit span may be vulnerable to more severe levels of

depression (Kennelly et al., 1985). It is conceivable that impairment of passive memory functioning may be an indicator of depression in the cognitive functioning of the elderly.

Fluid intellectual abilities (Gf), including the capacity for perceiving relationships in the environment, inductive reasoning, and short term memory, exhibit a gradual decline due to the process of aging. Fluid abilities, in general, may exhibit differential effects of depression, in addition to the decline that is associated with aging. Kennelly et al. (1985) found that measures requiring short term memory capacity and fluid intellectual ability were found to be sensitive to depression and helplessness effects in an elderly research sample.

Crystallized ability (Gc), which is developed through experience and education, represents highly practiced processing abilities that are less vulnerable to both age-related and depression related deficits. Gc abilities do make use of similar processes of reasoning and abstracting as Gf, but, because of the practice over time of Gc abilities, they tend to increase or stabilize through adulthood (Hayslip & Sterns, 1979). Gc is associated with the level of education of an individual, with higher levels of education being associated with more developed Gc capabilities. Gf is independent of both life experience and education, although training in problem-solving can enhance

an individual's use of his Gf abilities (Bliezner, Willis, & Baltes, 1981; Plemons, Willis, & Baltes, 1978). The conceptualization of intelligence as two types of abilities, Gc and Gf, is a useful distinction in understanding the cognitive deficits that may occur in an individual who is experiencing depression as well as the effects of aging. For example, an explanation of the behavior of an elderly individual who displays a problem with recalling events in the immediate situation, but who displays intact memory for information from education he or she has received forty years in the past can be explained by considering the differential effects of aging on different mental abilities. Short term memory is a Gf ability and is negatively affected by depression and the effects of aging. Memory for information from educational experience draws on Gc intellectual ability, which is more resistant to depression and the effects of aging.

#### Differential Diagnosis of Depression and Dementia

Disturbances in cognitive functioning in the elderly resulting from the effects of depression can be mistaken for dementia. Dan Blazer (1982) states, "Clinicians who work with older persons often notice the unique symptom presentation of late life depression, for example, the frequent association of apparent cognitive impairment, i.e.,

pseudodementia, in older persons suffering major depressive disorders" (p. 132).

In his work, Wells (1979) emphasizes the need for the clinician to look at the whole clinical picture before identifying as the causal factor in cognitive dysfunction. Late life depression often has an abrupt onset and exacerbates the dependency of the elderly individual beset by it, and significantly disrupting social skills (Gallagher & Thompson, 1983). Abrupt loss of the ability to function appropriately in daily decision-making and in social exchanges is often present in dementia, sometimes making differential diagnosis difficult. Gurland (1983) commented on the relationship that often exists between depression and social skills deficits in the elderly,

Underlying the capacity to carry out social functions successfully is the general ability to solve problems. Depressed elderly people may be impaired in their problem solving ability. One way in which this is manifest is the poor performance on psychological tests obtained by many depressed elderly persons, which may result in a false impression of intellectual decline. (p. 142)

For these reasons, an accurate appraisal of the cognitive factor of depression may be the most urgent priority of the assessing clinician.

The effects of depression on the cognitive abilities of problem-solving and memory and the symptoms of organic brain syndrome display some similarities, but differ in the extent or the intensity of the symptoms. Salzman and Shader (1979) offer 12 characteristics of depression that distinguish it from organic brain syndrome. These are: depressed mood, sleep and appetite disturbance, suicidal ideation, emotional lability, anxiety, hostility, confusion, disorientation, short-term memory loss, mental alertness, unsociability, and uncooperativeness. The symptomatology of organic brain syndrome is heavily weighted on the characteristics of emotional lability, confusion, disorientation, short-term memory loss, mental alertness, unsociability, uncooperativeness and hostility. In contrast, clinical depression is weighted on sad affect, disrupted sleep and appetite, and suicidal ideation.

#### Cognitive Theories of Depression

There is a considerable foundation of empirical findings underlying the assumption of depression as an entity differentiable from the effects of the normal process of aging and organic brain syndrome. As previously discussed, the effect of depression on the sufferer may be observed in measuring problem-solving performance. However, a number of theories have been developed which describe



depression as interfering with the normal process of cognition (Beck, Rush, Shaw & Emery, 1979).

Cognitive Behavior Theory treats depression as a cluster of symptoms, but does not provide a theoretical explanation for its nature and origin. In contrast, Learned Helplessness Theory (Seligman, 1975) provides a conceptualization of depression from the empirical foundation of learning theory. Kennelly (1980) defines his conception of learned helplessness,

Individuals subjected to uncontrollable outcomes during problem solving, processing, or learning efforts demonstrate behavioral deficits on later tasks compared to individuals subjected to controllable outcomes or not subjected to these outcomes at all. . . . These behavioral deficits have been labeled learned helplessness. . . a theoretical account of this phenomenon (which) emphasizes that exposure to uncontrollable outcomes produces an expectation of uncontrollability which, in turn causes the behavioral deficits observed on later tasks: (1) failure to initiate voluntary responses; (2) failure to recognize response-outcome contingencies; (3) negative affective reactions. Seligman's theory emphasizes, then, that the expectation of uncontrollability mediates between

the experience of uncontrollable outcomes and the observed behavioral deficits (p. 2).

Gielis (1982) found a parallel between learned helplessness and depression in terms of symptomatology, etiology, prevention, and therapy. His research suggests that learned helplessness is a viable analogue for depression. He contended that the subject's expectation of outcomes being uncontrollable is the central etiological factor of learned helplessness and that the nature of the causal attributes of success and failure determine the form and type of helplessness. The inclusion of causal attribution as part of depression or helplessness is the result of a theory-based as opposed to symptom-based construct of depression.

Learned helplessness theory applications to late life depression and the presence of cognitive deficits in problem-solving abilities suggest that there are three distinct facets of elderly depressive response that leads to cognitive decline: (1) a motivational component, (2) a perceptual component, and (3) an affective component. Because of the expectation of no control over the outcomes in the problem-solving situations of everyday life, the elderly individual then misperceives how his or her efforts relate to such outcomes. The accompanying affect is depressed, and, as a result, active engagement in problem-

solving drops off. The more intellectually demanding the task is, the more impaired performance becomes.

As noted above, learned helplessness has provided a theoretical framework for researching the effects of depression on cognitive functioning. Alloy and Abramson (1979) whose depressed college-aged subjects performed differently on a task that involved estimating the relationship between their effort on a given task and the degree of reinforcement they received, explain the depressed person's tendency to underestimate his or her control of the outcome of problem-solving as resulting in a motivational deficit. From their study, a revision of Seligman's conceptualization hypothesizes that depressed individuals often perform poorly on instrumental problem-solving tasks because they fail to generate responses that would increase the probability of a successful outcome. Depressives expect not to have control over the outcome of the problem-solving situation, therefore, they are not motivated to initiate such responses. This is a key point in the conceptualization of the cognitive deficits of the elderly in problem-solving. If a factor in depression which results in poor problem-solving is the lack of motivation to problem-solve based on perceived lack of control, it would dictate the necessity of assessing the motivational and the

response contingency components of depression as well as the affective components.

#### Learned Helplessness and Depression

In studies of depression, Berndt, Berndt, and Byers (1983) have researched the reliability of the Multiscore Depression Inventory, which includes learned helplessness as one of the factors in depression. However, depression and helplessness have not been established as synonymous. Depression has been considered only a parallel process to learned helplessness (Seligman, 1975). The differences between learned helplessness and depression may exist mainly because of a definition of depression which largely confines it to being characterized as an affective response only and by the limitation of the definition of learned helplessness to a state that is induced by a particular type of learning history. The cognitive and motivational components of learned helplessness can provide a bridge between depression and learned helplessness. If it can be shown that depression consists of motivational and cognitive factors, as well as affective and somatic factors, it may be possible, at some point, to integrate learned helplessness and depression in the elderly.

#### Locus of Control and Motivation

The concept of locus of control has been viewed as a process similar to learned helplessness (Hiroto, 1974).

Locus of control appears to be related to the motivational component of learned helplessness and positively correlates with depression (Botwinick, 1970, 1973; Hamrick, 1976). The attribution of success and failure has been related to the need for achievement (Okun & Siegler, 1977), and is a central feature of the reformulated theory of learned helplessness (Abramson, Seligman, & Teasdale, 1978). The attribution of success and failure to unstable factors in a problem-solving situation (such as effort) as opposed to stable factors (such as ability) is associated with less chronic, generalized helplessness effects. Assessing depressed affect, locus of control and attribution together would not only provide a means by which to assess learned helplessness, but away to elicit information on the nature and form that learned helplessness takes (Gielis, 1982). Self-report measures that have been well-established as reliable instruments in measuring depressed affect, locus of control and attribution in conjunction, could be used to elicit information that would be useful for treatment planning as well as diagnosis.

The learned helplessness conceptualization of depression, when applied to the elderly, provides a framework within which to gather data concerning the affective and somatic responses, factors that, while important, play less of a role in elderly depression than in

the depression of the young, but an important role, nevertheless. Consequently, assessing locus of control and attribution style permits a more precise evaluation of the nature of an elderly person's depression. Looking for a "profile" of depression rather than a score on one self-report inventory (that is biased towards reporting somatic and affective response) is a valid diagnostic alternative to current self-report assessment.

The proposed study investigates other components of depression in the aged using learned helplessness as an analogue for depression. The general assumptions upon which the study rests are: (1) depression in an elder inhibits performance on tasks of fluid intellectual ability and both active and passive short-term memory (Kennelly et al., 1985); (2) external locus of control and stable attributions can be related to performance deficits in fluid ability and active and passive short-term memory tasks because depression can be correlated with both external locus of control and stable causal attributions (Benson & Kennelly, 1976; Caster & Parsons, 1977); and (3) measures of locus of control and measures of the attribution of success and failure can assess the motivational component of learned helplessness (Rahaim, 1980). (This motivational component of learned helplessness can also be considered a component of depression in the elderly.)

The research questions to be explored in this study are: (1) If the nature of depression in the elderly is multidimensional, are the three components of learned helplessness (affective, motivational, and cognitive) and a somatic component descriptive of elderly depression? and (2) Will scores on scales measuring fluid intellectual ability and active and passive short-term memory (which have been determined to be lowered by the effects of depression) load on all four factors of depression in a factor analysis?

## CHAPTER REFERENCES

- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology, 87, 49-74.
- Alloy, L. B. & Abramson, L. Y. (1979). Judgment of contingency in depressed and nondepressed students: Sadder but wiser? Journal of Experimental Psychology: General, 108(4), 441-485.
- Beck, A., Rush, A., Shaw, B., & Emery, G. (1979). Cognitive therapy of depression. New York: Guilford Press.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J. R., & Erbaugen, J. (1965). An inventory for measuring depression. Archives of General Psychiatry, 4, 561-571.
- Benson, J., & Kennelly, K. (1976). Learned helplessness: The results of uncontrollable reinforcement or uncontrollable aversive stimuli? Journal of Personality and Social Psychology, 31(4), 138-145.
- Berndt, S. M., Berndt, D. J., & Byers, W. D. (1983). A multi-institutional study of depression in family practice. Journal of Family Practice, 16(1), 83-87.



- Blazer, D. (1982). The epidemiology of late life depression. American Geriatric Society Journal 30 (9), 587-592.
- Bliezner, R., Willis, S. L., & Baltes, P. B. (1981). Training research in aging on the fluid ability of inductive reasoning. Journal of Applied Developmental Psychology, 2, 247-265.
- Botwinick, J. (1970). Geropsychology. Annual Review of Psychology, 21, 239-253.
- Botwinick, J. (1973). Aging and behavior: A comprehensive integration of research findings. New York: Springer Publishing Co.
- Botwinick, J., & Storandt, M. (1980). Recall and recognition of old information in relation to age and sex. Journal of Gerontology, 35, 70-76.
- Caster, C., & Parsons, O. A. (1977). Relationship of depression, sociopathy, and locus of control to treatment outcome in alcoholics. Journal of Consulting and Clinical Psychology, 45, 751-756.
- Craik, F. I. M. (1977). Age differences in human memory. In J. E. Birren and K. W. Schaie (Eds.), Handbook of psychology of aging (pp. 384-420). New York: Van Nostrand Reinhold.

- Dessonville, C., Gallagher, D., Thompson, L. W., Finnell, K., & Lewinsohn, P. M. (1982). Relation of age and health status of depressive symptoms in normal and depressed older adults. Essence, 5(2), 99-115.
- Dye, C. J., Bohm, K., Anderten, P., & Cho, D. W. (1983). Age group differences in depression on the MMPI D Scale. Journal of Clinical Psychology, 39(21), 227-234.
- Faravelli, C. (1982). Validation of a new rating scale for the assessment of depressive symptoms. Rivisti di Psichiatria, 17(1), 101-120.
- Fisher-Beckfield, D., & McCall, R. M. (1982). Development of a competence inventory for college men and evaluation of relationships between competence and depression. Journal of Consulting and Clinical Psychology, 50(5), 697-705.
- Gallagher, D., Breckenridge, J., Steinmetz, J., & Thompson, L. (1983, October). The Beck Depression Inventory and research diagnostic criteria: Congruence in an older population. Journal of Consulting and Clinical Psychology, 51(9), 933-939.
- Gallagher, D., & Thompson, L. W. (1983). Assessment and treatment of depression in the elderly: A review. In P. M. Lewinsohn & L. Teri (Eds.), Coping and adaptation in the elderly (pp. 111-123). New York: Pergamon Press.

- Giellis, A. (1982). Learned helplessness as a model for depression: A literature review. Gedragstherapie, 15(1), 3-31.
- Gould, J. (1982). A psychometric investigation of the standard and short form of the Beck Depression Inventory. Psychological Reports, 5(3, pt. 2), 1167-1170.
- Gurland, B. J., Dean, L. L., & Cross, P. S. (1983). The effects of depression on individual social functioning. In L. D. Breslau & M. R. Hugh (Eds.), Depression and aging: Causes, care, and consequences (pp. 72-86). New York: Springer Publishing Co.
- Hamrick, N. D. (1976). Learned helplessness and internal-external locus of control in the elderly. Unpublished doctoral dissertation, North Texas State University.
- Hasher, L., & Zacks, R. T. (1979). Automatic and effortful processes in memory. Journal of Experimental Psychology: General, 108(3), 356-388.
- Hayslip, B., & Kennelly, K. J. (1982). Short-term memory and crystallized-fluid intelligence in adulthood. Research on Aging, 4(3), 314-332.
- Hayslip, B., & Sterns, H. L. (1979). Age differences in relationships between crystallized and fluid intelligences and problem-solving. Journal of Gerontology, 34(3), 404-414.

- Hiroto, D. S. (1974). Locus of control and learned helplessness. Journal of Experimental Psychology, 102(2), 187-193.
- Kammer, D. (1983). A study of the psychometric properties of the German Beck Depression Inventory (BDI). Diagnostica, 29(1), 48-60.
- Kennelly, K. J., Crawford, D., Waid, L. W., & Rahaim, S. (1980). Partial reinforcement immunizes against helplessness induced short-term memory deficits. Catalogue of Selected Documents in Psychology, 10(59) (Manuscript No. 2091).
- Kennelly, K. J., Hayslip, B., & Richardson, S. K. (1985). Depression and helplessness-induced cognitive deficits in the aged. Experimental Aging Research, 11(3-4), 169-173.
- Okun, M. A., & Siegler, I. C. (1977). The perception of outcome-effort covariation in younger and older men. Educational Gerontology: An International Quarterly, 2, 27-32.
- Plemons, J. K., Willis, S. L., & Baltes, P. B. (1978). Modifiability of fluid intelligence in aging: A short term longitudinal training approach. Journal of Gerontology, 33(2), 99-102.

- Plude, D. J., Hoyer, W. J., & Lazar, J. (1982). Age, response complexity, and target consistency in visual search. Experimental Aging Research, 8 (2), 99-102.
- Rahaim, S. (1980). Learned helplessness and attentional focus. Unpublished doctoral dissertation, North Texas State University.
- Salzman, D., & Shader, R. (1979). Clinical evaluation of depression in the elderly. In A. Raskin & L. Jurvik (Eds.), Psychiatric symptoms and cognitive loss in the elderly (pp. 192-214). Washington, DC: Hemisphere.
- Schonfield, D., & Robertson, B. A. (1966). Memory storage and aging. Canadian Journal of Psychology, 20, 220-236.
- Seligman, M. E. P. (1975). Helplessness. San Francisco: W. H. Freeman.
- Wechsler, D. (1955). Manual for the Wechsler Adult Intelligence Scale. New York: Psychological Corporation.
- Weckowicz, T., Muir, W., & Cropley, A. (1967). A factor analysis of the Beck inventory of depression. Journal of Consulting Psychology, 31, 23-28.
- Wells, C. E. (1979). Pseudodementia. American Journal of Psychiatry, 136, 895-900.

## CHAPTER II

### METHOD

#### Subjects

Elderly individuals from retirement centers and living in private homes in the community were recruited through newspaper articles, flyers sent through the mail, and meetings held in their communities. The sample surveyed was drawn from metropolitan Dallas-Fort Worth, its outlying suburban area, and neighboring rural small towns. The age range for these individuals was 60 to 90 ( $M = 74.8$ ). An equal number of male and female participants were recruited, total number equaling 400. The self-rated health of the subjects ranged from fair to excellent, while level of education ranged from eight years to some courses in graduate education. The sample appeared to be positively biased in terms of annual income, however, in terms of range of health and education, they appeared to be comparable to other elderly people in the country and in the Southwest (U.S. Census Data, 1984). Each subject was administered a battery of tests individually and were permitted to work at their own speed. The order in which tests were administered was the same for each subject. Each subject was told that

he or she was participating in a research project to study problem-solving skills in the elderly and would be compensated for his/her time.

### Materials

#### Measure of Income

A list of seven items pertaining to sources of income were provided from which each subject could choose to report. The items are (a) wages and salary, (b) social security, (c) pension/retirement plans, (d) members of your family, (e) rent or income on property you own, (f) interest/dividends from investments or savings, and (g) other sources. Eleven items describing income brackets were provided for subjects to choose the one that represents their income for the past year. The items are (a) under \$3,000, (b) \$3,000-3,999, (c) \$4,000- 4,999, (d) \$5,000-5,999, (e) \$6,000-6,999, (f) \$7,000-7,999, (g) \$8,000-9,999, (h) \$10,000-14,999, (i) \$15,000-19,999, (j) \$20,000-24,999, and (k) \$25,000 and above (see Appendix B).

#### Highest Level of School Completed

A list of ten descriptive statements were provided from which each subject could choose to report his or her level of education: (a) none or some grade school (specify last grade completed), (b) completed grade school (grade 8), (c) some high school, (specify last grade completed), (d) completed high school, (e) some college, didn't graduate,

(f) graduated from college, (g) some work toward master's degree, (h) completed master's degree, (i) some work toward doctorate or professional degree, and (j) completed doctorate or professional degree. Each level, a through j, was assigned numerical values of one through ten for purposes of analysis (see Appendix B).

#### Health Self-Rating

Each subject was asked to rate his or her health relative to others of a similar age. Four categories were provided, each with a numerical value for purposes of statistical analysis (Excellent = 4; Good = 3; Fair = 2; Poor = 1) (see Appendix B).

#### The Gf-Gc Sampler

#### Multiple Choice Vocabulary

Each subject was asked to find a word from a group of five words that most nearly had the same meaning as the target or first word and circle the word they choose or N/A, (no answer) for 15 items. The test-retest reliability for this measure exceeds +.80 (Hayslip & Sterns, 1979; Horn, 1975), with scores ranging from 0 through 15 (see Appendix B).

#### Common Analogies

Each subject was presented with 12 items to solve. Each item presents a pair of words that are related to each other and a third word which has no mate. The subject was



told to choose one word from a group of five which, when combined with the target (or third word) would be related to the target in the same type of relationship as the initial pair of words, with a N/A (no answer) option for each task item. Common analogies is used as a marker of fluid ability and a test in the Gf-Gc Sampler (Horn, 1975). Its test-retest reliability exceeds +.80 (Horn, 1975), with score ranges from 0 through 12 (see Appendix B).

#### Abstruse Analogies

This test is a marker of Gc in the Gf-Gc Sampler, and consists of 13 items. Each item presents a pair of words which are related to one another and a third or target word which is related in the same way to one of a group of five words presented to the subject. The subject must circle a word or the N/A (no answer). Test-retest reliability exceeds +.80 (Horn, 1975), and the ranges of scores for the elderly is 0 through 13 (see Appendix B).

#### Letter Series

In these items, the subject must write the letter that comes next in a series of letters. A series is from 5 to 15 letters long, and the test has 15 items to be completed, with an N/A (no answer) option. Such letter series testing is a marker of Gf and is a task in the Gf-Gc Sampler. Test-retest reliability exceeds +.80 (Horn, 1975), with a range of scores for the elderly from 0 through 15 (see Appendix B).

### Matrices

Horn matrices have been added to the figural relations subtest that appears in the Gf-Gc Sampler (Hayslip & Sterns, 1979). Fifteen items are included. Each item consists of three columns of three pictures per column, except the lower, right-hand corner segment, which remains blank. Each subject must deduce which picture has been deleted by finding the progression in the pictures and choosing the suitable picture from six pictures and a "no answer" alternative. The test-retest reliability of the Horn matrices exceeds +.80 (Horn, 1975). Ranges of scores are 0 through 9. Matrices are a marker of Gf (see Appendix B).

### Letter Sets

Thurstone (1962) letter grouping measures inductive ability and also is a marker for Gf. Each problem in this scale has five groups of letters with four letters in each group. Four of the groups of letters are alike in some way, while the fifth is not. The subject must deduce the rule of commonality among the four groups and draw an "X" through the fifth group, which does not "fit" the rule. Ten items constitute the scale, which is a marker of Gf. Test-retest reliability exceeds +.80 (Horn, 1975). Ranges of scores for the elderly are 0 through 10 (see Appendix B).

### Anagrams

This task is a concrete task and emphasizes the role of pre-experimental association (Hayslip & Sterns, 1979). The subject must unscramble 20 five-letter sets to make single five letter words. Ranges of scores are 0 through 20 (see Appendix B).

### Spatial Memory

This task requires the subject to attend to the experimenter pointing to checkers fastened to a board. The subject must remember and repeat the same pattern of pointing to checkers for forward spatial memory. There are 14 trials of increasing length of span, three to nine checkers. Criterion for discontinuing administration is two consecutive failures on both trials of the same length span of checkers. Spatial backward requires the subject to remember the pointing pattern and then produce it in reverse. There are 14 potential trials, beginning with a two checker span extending to eight checkers. Discontinuation is two consecutive failures of the same span length (Milner, 1971) (see Appendix B).

### Digit Span

Forward Digit Span is a marker of Gf and is also identified as an automatic or passive primary memory task. The subject is required to listen and retain a series of numbers, so that he/she can repeat them to the experimenter

in the order they were given. The length of the series ranges from 3 to 8 digits, increasing by one digit in every successive level. Each level consists of two trials of the same length. When two consecutive trials of the same length are repeated incorrectly, criterion for discontinuation is met (Wechsler, 1955) (see Appendix B).

#### Poisoned Foods Task

The "poisoned foods" problem consists of a concept which is the poisoned food to be identified. The subject is presented with "instances" in the form of meals made up of three attributes (meat, beverage, vegetable), each of which has three values (lamb, steak, veal; milk, tea, coffee; beans, peas, corn), respectively. The experimenter initially presents the first instance and the subject then designates the instance as negative (whoever might eat the meal would live) or positive (whoever might eat the meal would die) and then is given feedback as to the correctness of his or her response by the experimenter. The instances are administered to the subject until he/she meets the criterion. The dependent variables are (1) trials to criterion, and (2) errors (incorrect identifications) prior to criterion. If the criterion of the ten correct identifications was reached or if the problem was not solved within 108 trials, testing was terminated. Each subject was then asked what he/she believed the poisoned food to be and

how he/she solved the problem. The subject has formed few pre-experimental associations and begins with overt trial and error behavior to test various responses in the poisoned foods task. The subject then serially considers each response alternative, one of which is correct and will eventually be the response that meets criterion (Hayslip & Sterns, 1979) (see Appendix B).

#### Cattell Matrices

Nine items are included. Each item consists of a set of symbols in columns and rows that are ordered in a progressive pattern in each item; the lower, right-hand segment remains blank. Five alternative symbols are provided for the subject to choose from. The test-retest reliability of the Cattell Matrices is +.65 (Hayslip & Sterns, 1979). Ranges of scores are 0 through 9 (see Appendix B).

#### The Beck Depression Inventory

The Beck Depression Inventory (BDI) (Beck, et al., 1965) is a clinical and a research assessment tool that has been used in diagnosing depression in the elderly. Gallagher et al. (1983) cite the BDI as agreeing with the Research Diagnostic Criteria, as measured by the Schedule for Affective Disorders and Schizophrenia, to the extent that the false negative rate for major depressives was 8.8 percent and 18.5 percent for the nondepressed. The

accuracy for detecting minor depressives was less, demonstrating a 38.9 percent false negative rate. Gallagher, Nies and Thompson (1982) suggested from findings of a reliability study of the BDI with the elderly that it is a potentially useful clinical screening instrument. They found respectable internal consistency and stability with older adults in research and as a clinical screening instrument. A study published in the same year by Kearns, Cruikshank, McGuigan, Riley, Shaw, and Snaith (1982), using psychiatric in-patients, criticized the BDI at the point where Gallagher et al. (1982) cited its strength; in distinguishing severe and moderate grades of depression. In the Kearns et al. (1982) study, the results of the BDI, along with other patient-rated and interviewer-rated scales, were compared to ratings of patients according to an 11-point criterion scale made independently by one of two of the authors and a member of the senior nursing staff. They found that the BDI was weak in distinguishing moderate to severe grades of depression. These findings suggest a need to examine the BDI more closely as to its usefulness in accurately measuring depression.

The BDI has numerous items that refer to somatic disturbances, items which can be misleading when administered to the elderly. The inventory also asks for a pointed self-evaluation of negative affective response,

something that may threaten an elderly individual who is hesitant to admit to psychological problems. The EDI alone does not appear to comprehend the qualities of elderly depression (see Appendix B).

#### The Levenson Locus of Control Scale

The Levenson Locus of Control Scale (Levenson, 1973) is divided into three subscales: Internal, Chance, and Powerful Others. Each subscale represents a source of influence affecting the successes and failures in a person's life. The Internal scale assesses the extent to which people perceive having control over their own lives. The Chance scale measures the extent to which people perceive their life experiences and situation outcomes as unpredictable. The Powerful Others scale assesses the influence other people are perceived as having over the subject's life. A Likert type scale is provided for each test item. Scores can range from 0 to 48. High scores on each subscale indicate a high expectation of control by the source represented by the scale. Low scores display a tendency not to believe in that source of control as being influential. Levenson (1976) reported the following norms for the elderly: Internal scale-- $39.86 \pm 6.89$ ; Powerful Others scale-- $29.28 \pm 8.69$ ; Chance scale-- $31.18 \pm 9.08$ . For the scales, a profile of the Internal scale score being

higher than the Powerful Others scale and the Chance scale is considered adaptive (see Appendix B).

Molinari (1979) found internality significantly, negatively related to depression, using Zung's scale. Caster and Parsons (1977) found a significant correlation between depression as measured by the BDI and the Powerful Others scale. The locus of control scale as developed by Levenson was used to assess the motivational component of depression.

#### Paired Associates

A list of ten pairs are presented to the subject, one pair at a time. Then the subject's memory is tested by presenting the first word of the pair and asking the subject to produce the second word, or mate. The first words are presented in a random order. Two lists constitute the task, the first consisting of logical associations, the second of more arbitrary pairings (Botwinick & Storandt, 1974) (see Appendix B).

#### Long-Term Memory

Eight questions were presented to the subject from the WAIS Information subtest (Botwinick & Storandt, 1974) that draw from prior learning of information. This is a measure of Gc intellectual ability (see Appendix B).



### Inventive Remote Associations

This measure requires the subjects to find a word that is associated with three key words. There are eight items. The subject must rely on pre-existing associations to relate the key words to a fourth word (Horn, 1975) (see Appendix B).

### Survey of Attribution of Success/Failure

Okun and Siegler (1977), in their research investigating the perception of the relationship between outcome and effort in younger and older men, found that older men do not generally attribute failure and success to effort. They perceive a weak covariation between task outcome and effort, implying that older men perceive external sources such as chance or powerful others, as influencing outcome. The consequences of attributing outcome to these sources are ". . .they cannot anticipate future success after failure by planning to work harder. . . .they may be prone to giving up on learning contexts where initial failure experiences are likely" (p. 31). In a survey of attribution, four causal sources are evaluated by the subject that could potentially influence his/her success or failure: luck, task difficulty, ability, or effort. Under certain conditions, attribution to unstable and/or external factors, such as effort, luck, or task difficulty, permits hope for success in the future, in that those situations could change. One may exert more

effort to solve the problem next time, the individual's luck may change, the task on which he or she is working might be easier the next time. On the other hand, in different situations, stable attributions, such as lack of ability could close off the hope of success for the future, as ability is something that can be "fine-tuned," but not substantially improved. Weiner, Heckhausen, Meyer, & Cook (1972), in analyzing the relationship between locus of control and causal attribution, associates unstable attribution with internality. Such attributions, if they co-exist with depression, may suggest a less pervasive depression (Abramson, Seligman, & Teasdale, 1978). From such information, it may be possible to make inferences about locus of control, attribution, and depression (see Appendix B).

#### Statistical Analysis

Using the correlation matrix and/or variance and covariance matrix based on pre-test data collected from 400 elderly subjects 60 to 90 years old, exploratory factor analyses were performed on measures of self-rated health, level of education, and 18 scales measuring depression, locus of control, attribution, fluid and crystallized intellectual ability, abstract and concrete problem solving and active and passive short-term memory. Four hypothesized factors defining depression were to be

identified: (1) somatic distress, (2) motivation, (3) affective, and (4) cognitive processes. It was predicted that the above variables would load (see also Appendix A) in specific ways on these four factors.

1. Income self-report would load positively on the cognitive factor and motivational factor.

2. Health self-report would load positively on somatic complaints and affective.

3. Educational self-report would load positively on motivation and cognitive factors.

4. The BDI items would load on the following factors in this manner: somatic distress--items P, Q, R, S, T (positive loading; motivational--items C, G, H, M, O (positive loading); affective--items A, B, D, E, F, G, I, J, K, L, M, N, O, U (positive loading); and cognitive processes--items C, M (negative loading).

5. The Levenson Locus of Control Scales of Power and Chance would have no loading on the somatic factor, but would load negatively on the motivational and cognitive processes factors, and positively on the affective factor. The Internal scale would not load on the somatic factor, but would have positive loadings on the motivational and cognitive processes factors, and a negative loading on the affective factor.

6. The items from the Attribution Survey would not load on the somatic factor, but stable attribution (ability and task difficulty) would load positively on the affective factors. The unstable attribution items (luck and effort) would load negatively on affective and positively on motivational and cognitive factors.

7. The common analogies task would not load on somatic but would load negatively on the affective factor and positively on the cognitive factor and motivation.

8. Letter sets (Gf) would not load on the somatic factor, but would load negatively on the affective factor and would load positively on the cognitive factor and the motivational factor.

9. The matrices task (Gf) would not load on the somatic factor, but would load positively on the motivation and cognitive factors and would load negatively on the affective factor.

10. Abstruse analogies (Gc) would not load on the somatic, motivational or affective factors, but would load positively on the cognitive factor.

11. Multiple choice vocabulary (Gc) would not load on somatic, motivation, and affective factors, but would positively load on the cognitive factor.

12. Letter series (Gf) would load positively on the cognitive and motivational factors, would load negatively

on the affective factor, and would not load on the somatic factor.

13. The anagram test would not load on somatic, motivational, or affective factors, but would load positively on the cognitive factor.

14. The poisoned foods task, which is represented by two scores in the factor analysis (number of errors and number of trials until criterion) would load on the factors in the following way: number of errors would load positively on the affective factor and negatively on the cognitive factor. The number of trials would load negatively on the motivational and cognitive factors, and positively on the affective factors.

15. Backward digit span would not load on the somatic factor, would load positively on the motivational and cognitive factors, and negatively on the affective factor.

16. Forward digit span would not load on the somatic factor, would load positively on the motivational and cognitive factors and negatively on the affective factor.

17. Backward spatial memory would load positively on the motivational and cognitive factors and negatively on the affective factor.

18. Forward spatial memory would load positively on the motivational and cognitive factors and negatively on the affective factor.

19. Tertiary memory would load positively on the cognitive factor.

20. Paired associates would load positively on the motivational and cognitive factors and negatively on the affective factor.

21. Inventive remote associates would load positively on the cognitive factor.

22. The factors themselves would relate to each other in the following way: the somatic factor would be negatively related to the motivational and cognitive factors and positively related to the affective factor. The motivational factor would be negatively related to the somatic and affective factors and positively to the cognitive factor. The affective factor would be positively related to the somatic factor and negatively related to the motivational and cognitive factors. The cognitive factor would be negatively related to the somatic and affective factors and positively related to the motivational factor.

## CHAPTER REFERENCES

- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology, 87, 49-74.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J. R., & Erbaugh, J. (1965). An inventory for measuring depression. Archives of General Psychiatry, 4, 561-571.
- Botwinick, J., & Storandt, M. (1974). Memory related functions and age. Springfield, MO: C. C. Thomas.
- Caster, C., & Parsons, O. A. (1977). Relationship of depression, sociopathy, and locus of control to treatment outcome in alcoholics. Journal of Consulting and Clinical Psychology, 45, 751-756.
- Gallagher, D., Breckenridge, J., Steinmetz, J., & Thompson, L. (1983). The Beck Depression Inventory and research diagnostic criteria: Congruence in an older population. Journal of Consulting and Clinical Psychology, 45, 751-756.
- Hayslip, B., & Sterns, H. L. (1979). Age differences in relationships between crystallized and fluid intelligences and problem-solving. Journal of Gerontology, 34(3), 404-414.

- Horn, J. L. & Cattell, R. B. (1967). Age differences in fluid and crystallized intelligence. Acta Psychologica, 26, 107-129.
- Kearns, N. P., Cruikshank, C. A., McGuigan, K. J., Riley, S. A., Shaw, S. P., & Snaith, R. P. (1982). A comparison of depression rating scales. British Journal of Psychiatry, 141, 45-49.
- Levenson, H. & Miller, (1976). Multidimensional locus of control in psychiatric patients. Journal of Consulting and Clinical Psychology, 41(3), 397-404.
- Milner, B. (1971). Interhemispheric differences in the localization of psychological processes in man. British Medical Bulletin, 27, 272-277.
- Molinari, V. (1979). Locus of control. Unpublished doctoral dissertation, Ohio State University.
- Okun, M. A., & Siegler, I. C. (1977). The perception of outcome-effort covariation in younger and older men. Educational Gerontology: An International Quarterly, 2, 27-32.
- Thurstone, T. G. (1962). Primary mental abilities, Grades 9-12. Chicago, IL: Science Research Association.
- United States Census Data. (1984). A Profile of Older Americans, 1985. (Pamphlet). Washington, D.C.: American Association for Retired Persons.



- Wechsler, D. (1955). Manual for the Wechsler Adult Intelligence Scale. New York: Psychological Corporation.
- Weiner, B., Heckhausen, H., Meyer, W., & Cook, R. (1972). Causal ascription and achievement motivation: A conceptual analysis of effort and a reanalysis of locus of control. Journal of Personality and Social Psychology, 21, 239-248.
- Zung, W. W. K. & Wonnacott, T. H. (1970). Treatment prediction of depression using a self rating scale. Biological Psychiatry, 2(4), 321-329.

## CHAPTER III

### RESULTS

#### Initial Factor Analyses of the Data

The statistical analysis originally proposed in this study provided for a factor analysis of 54 variables. Included were self-report measures of health, education, and income; the 21 items of the Beck Depression Inventory; the Levenson Locus of Control Scales of Internal, Powerful Others, and Chance; an inventory measuring state attribution of success and failure, including the stable conditions of ability and luck and the unstable conditions of effort and task difficulty; an inventory measuring trait attribution of success and failure in both stable and unstable conditions; and 14 measures of fluid and crystallized intellectual ability and problem solving/memory which included concrete and abstruse analogies tasks, a letter series task, Horn and Cattell Matrices, a multiple choice vocabulary task, an anagrams task, the Poisoned Foods task, a remote associations task, forward and backward digit span, forward and backward spatial memory span, a tertiary memory task, and a paired associates memory task.

After the descriptive data from the sample had been compiled, it was found that nine of the measures that were

to be used in the proposed analysis displayed a very small range of scores among subjects and therefore did not appear to be useful in investigating proposed differences in performance on cognitive tasks related to depression. The measures that were deleted were: the paired associates task scores, forward and backward digit span, forward and backward spatial memory, the Poisoned Foods task, the tertiary memory task, and the anagrams task. Table 1 illustrates means, standard deviations and ranges of the measures administered to the subjects.

#### Initial Factor Analysis

An exploratory factor analysis was then performed on the resulting 43 variables, which included: self-rated measures of health, education, and income; 21 items measuring depression, three locus of control subscales, state and trait attribution, and eight measures of fluid and crystallized intelligence, including multiple choice vocabulary task, concrete and abstruse analogies, letter series, letter sets, Cattell and Horn Matrices, and remote association. Table 2 (Appendix C) illustrates the correlation matrix of the 43 variables. The results of this analysis yielded fourteen factors which accounted for 61.5 percent of the common variance. A varimax (orthogonal) rotation and an oblimin (oblique) rotation were used to clarify and simplify the factor structure.

Table 1

Means, Standard Deviations, and Ranges for Elderly  
Subjects on Three Demographic Indices, Eight Indices of  
Intellectual Performance and Thirty-Two Indices of  
Depression, Attribution, and Locus of Control

Measures	Mean	Standard Deviation	Range
Health	3.21	.71	2.49 - 3.92
Education	5.24	1.92	3.32 - 7.17
Income	2.97	1.60	1.37 - 4.58
A. Depressed Mood	.04	.20	0 - .25
B. Pessimism	.07	.34	0 - .41
C. Sense of Failure	.06	.23	0 - .28
D. Lack of Satisfaction	.25	.43	0 - .68
E. Guilt Feelings	.10	.30	0 - .40
F. Sense of Punishment	.13	.53	0 - .66
G. Self Hate	.18	.42	0 - .60
H. Self Accusation	.36	.48	0 - .85
I. Self Punitive Wishes	.08	.27	0 - .35
J. Crying Spells	.24	.73	0 - 1.11
K. Irritable Mood	.56	.90	0 - 1.46
L. Social Interest	.11	.35	0 - .47
M. Indecisiveness	.25	.43	0 - .68

N. Body Image	.13	.43	0 - .55
Internal	36.32	6.40	29.92 -42.72
Powerful Others	23.58	8.06	15.52 -31.64
Chance	22.97	7.63	15.34 -30.60
State Attribution-Luck	2.45	1.17	1.29 - 3.62
State Attribution-Ability	4.03	.84	3.19 - 4.87
State Attribution-Effort	4.26	.80	3.47 - 5.06
State Attribution-Task	3.84	.78	3.06 - 4.62
Trait Attribution-Luck	2.43	1.18	1.25 - 3.61
Trait Attribution-Ability	4.15	.82	3.33 - 4.97
Trait Attribution-Effort	4.31	.79	3.52 - 5.09
Trait Attribution-Task	3.81	.89	2.91 - 4.70
Vocabulary	12.04	2.45	9.59 -14.49
Concrete Analogies	7.17	2.43	4.75 - 9.60
Abstruse Analogies	7.92	2.76	5.16 -10.68
Letter Series	5.65	3.46	2.19 - 9.10
Letter Sets	2.94	2.18	.75 - 5.12
Cattell Matrices	6.01	2.06	3.95 - 8.07
Horn Matrices	4.71	3.02	1.69 - 7.73
Remote Association	3.06	1.91	1.15 - 4.97
O. Work Inhibition	.48	.50	0 - .98
P. Sleep Disturbance	.43	.60	0 - 1.03
Q. Fatigue	.77	.45	.32 - 1.22
R. Loss of Appetite	.13	.33	0 - .46

S. Weight Loss	.29	.73	0 - 1.03
T. Somatic	.16	.37	0 - .53
U. Loss of Libido	.65	.94	0 - 1.60

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The 14 factors, with the loadings of the 43 variables are presented in Table 3 (Appendix C).

These factors were labeled as: (1) an ability factor, (2) self/situation attribution factor, (3) a pessimism factor, (4) a locus of control factor, (5) a luck attribution factor, (6) a sad affect factor, (7) a hopelessness factor, (8) a competence factor, (9) a self-destructive factor, (10) a health factor, (11) a social interest factor, (12) an initiative factor, (13) a trait attribution factor, (14) and a motivation factor. This factor structure appeared to be very complex and comparison and contrast to the proposed four factor model proved to be difficult. A factor analysis of the Beck items was performed to provide essential information on the factor structure of depression in the sample.

#### Factor Analysis of the BDI

The factor analysis of the Beck Depression Inventory provided an understanding of the factors of depression which may have influenced the performance of the sample on the other psychometric instruments. Further analyses could then be performed on measures of cognitive performance,

self-report measures of health, education, and income, measures of locus of control, and of attribution to determine if similar factors influenced performance on these tasks as well. The analysis of the BDI resulted in eight factors extracted. These were labeled as: (1) Negative Self Evaluation, (2) Low Energy, (3) Pessimism, (4) Nondepression I, (5) Low Social Interest, (6) Sad Affect, (7) Lability, and (8) Nondepression II. Table 4 illustrates the variables loading on the eight factors of the BDI. These eight factors accounted for 56.1 percent of the total common variance in the data. Factor 1, Negative Self-Evaluation, accounted for 14.7 percent of the common variance, Low Energy (Factor 2)--7.9 percent, Pessimism (Factor 3)--6.6 percent, Nondepression I (Factor 4)--5.9 percent, Low Social Interest (Factor 5)--5.7 percent, Sad Affect (Factor 6)--5.2 percent, Lability (Factor 7)--5.1 percent, and Nondepression II (Factor 8)--4.9 percent. Eigenvalues for each of the factors were as follows: Negative Self-Evaluation (3.09), Low Energy (1.67), Pessimism (13.9), Nondepression I (1.24), Low Social Interest (1.19), Sad Affect (1.10), Lability (1.10), and Nondepression II (1.03). Table 2 provides information about the loadings of each BDI item on the eight factors.

Relationships between the factors of the BDI revealed that the factors were essentially orthogonal, with

correlations which did exist between factors being generally fairly small. The Sadness factor was positively correlated with Low Social Interest (.20) and negatively related to Nondepression II (-.22). The Low Energy factor was negatively related to Nondepression I (-.28). Nondepression I and Nondepression II were positively related (.22).

#### Secondary Factor Analysis

The next step was to reintroduce measures of locus of control, attribution of success and failure, self-report questionnaires of education and health, and measures of cognitive ability into the analysis in concert with the above BDI items to determine the factors that influenced the performance of the sample. Thirty-four variables were retained from the original factor analysis. These included the BDI scales, the three locus of control scales: Internal, Powerful Others, and Chance; state and trait attributions of success and failure in stable and unstable conditions, and eight measures of cognitive performance, including multiple choice vocabulary, concrete analogies, abstruse analogies, letter sets, letter series, Cattell and Horn Matrices, and remote associations. Nine variables had been deleted from this analyses: the self report measures of income, the BDI items of Crying, Irritability, Low Social Interest, Low Self-Esteem, Appetite, Weight Loss,



Somatic Complaints, and Sexual Interest. These nine variables had low factor loadings on 14 factors in the initial factor analysis of 43 variables (including measures of depression, locus of control, attribution, cognitive functioning, and self-report measures of health, education, and income). The nine variables which were deleted did not contribute significantly to the 14 factors influencing the performance of the sample in the analysis.

The analyses of the 34 variables yielded eleven factors which were labeled as: Factor 1--Ability, Factor 2--Negative Self-Evaluation, Factor 3--Effort/Difficulty of Task Attribution, Factor 4--Locus of Control, Factor 5--Luck Attribution, Factor 6--Low Energy, Factor 7--Paranoia-Gc, Factor 8--Optimism, Factor 9--Trait-Self-Attribution, Factor 10--Self-Punishment, and Factor 11--Self-Attribution/Poor Sleep. These 11 factors accounted for 62.5 percent of the common variance. Table 5 (Appendix C) illustrates the factors and the common variance accounted for by each factor.

The Scree Test (Cattell, 1966), a short method, based on an inspection of the slopes of eigenvalues associated with each successive factor used to draw out significant factors, was applied to the results of the secondary factor analysis. The results of the Scree analyses yielded five factors: (1) Ability, (2) Negative Self-Evaluation, (3)

Effort-Difficulty, (4) Locus of Control, and (5) Luck Attribution. These factors, which cumulatively accounted for 41.4 percent of the variance, represent the most salient, influential factors in the responding of the subjects to the measures administered. A factor correlation matrix is presented in Table 6 (Appendix C), indicating the relationships between factors.

Relationships between factors were as follows: the Ability factor related negatively to Luck Attribution (-.33) and Low Esteem/Performance (-.46). Ability was positively related to Trait Self-Attribution (.22). A positive relationship between Negative Self-Evaluation and Low Energy (.21) was also found. In addition, Negative Self-Evaluation had an inverse relationship to Optimism, and the Effort/Difficulty Attribution factor was positively related to the Trait Self-Attribution factor. Locus of Control was a fairly isolated factor with a low correlation with the other factors in the analysis. Luck Attribution was inversely related to Trait Self-Attribution. Optimism and the Self-Punishment factors were also inversely related (see Table 6, Appendix C).

The factors that were hypothesized were not present in the data in the form that was anticipated. Consequently, intercorrelations of the proposed factors bore no comparison to the actual factor correlation matrix, when

these relationships were reconsidered at the secondary (inter-factor) level.

## CHAPTER REFERENCE

Cattell, R. B. (1966). The Scree test for the number of factors. Multivariate Behavioral Research, 1(2), 245-276.

## CHAPTER IV

### DISCUSSION

The results of the exploratory factor analysis of the BDI scales plus measures of attribution, locus of control, cognitive performance, and self-report measures of health and education suggested that the proposed four factors of motivation, cognitive ability, affect, and somatic complaints were not represented in the data. The factor analysis which included the items of the BDI, as well as measures of cognitive functioning, health, education, locus of control and attribution, resulted in a more complex factor structure than that which an analysis of the BDI alone produced. The eight factors of the BDI analysis included: Negative Self-Evaluation, Low Energy, Pessimism, Nondepression I, Low Social Interest, Sad Affect, Lability, and Nondepression II. The 11 factors of the BDI plus the additional measures were labeled as: Ability, Negative Self-Evaluation, Effort/Difficulty of Task Attribution, Locus of Control, Luck Attribution, Low Energy, Low Esteem/Performance on tasks, Optimism, Trait-Self-Attribution, Self Punishment, and Self-Attribution/Poor Sleep. Finally, the analysis of the BDI plus additional measures resulted in eight factors not present in the

analysis of the BDI scales only. These factors were labeled as: an ability factor, an effort/task difficulty factor, a luck attribution factor, a low esteem/performance factor, a trait self-attribution factor, a self-punishment factor, and a self-attribution/poor sleep factor. The presence of these factors suggest that the addition of variables of attribution, locus of control, and cognitive functioning provide an opportunity for a broader assessment of the influence on the performance of the elderly on various tasks.

Two factors present in the analysis of the BDI items were also present in the analysis of the BDI plus additional measures of locus of control, attribution, self-report of health and education, and measures of cognitive performance. These factors were those labeled Negative Self-Evaluation and Low Energy.

The Negative Self-Evaluation factor from the BDI analysis appeared to be similar to that of the Negative Self-Evaluation factor in the analysis of the BDI plus the additional measures. Variables or BDI items that are in common are: Item E--Guilt, Item F--Punishment, Item G--Self-Hate, and Item H--Self-Blame. The Low Energy factors of both analyses are also similar and have the following similar factor loadings: Item D--Lack of Satisfaction, Item O--Work Inhibition, and Item Q--Fatigue. Two factors

that were extracted from the final analysis, Negative Self-Evaluation and Low Energy, appear to be descriptive of elderly depression, as the structure of these factors were similar to those of two factors in the factor structure of the BDI when BDI items were analyzed separately. Foelker, Shewchuk and Niederehe (1986) performed a confirmatory factor analysis of BDI short-form data from two samples of elderly and supported a three factor model of elderly depression, which included the factors of Negative Self-Evaluation, Anergy (similar to low energy), and Dysphoria. The factors of Negative Self-Evaluation and Anergy in the Foelker, et al. (1986) study were similar to the factors of Negative Self-Evaluation and Low Energy in both the BDI analysis and the analysis over the 34 variables, with the greater similarity being to the factors from the analysis over the 34 variables. Foelker, et al.'s Factor I, or Negative Self-Evaluation, had the following items loading on this factor: Failure, Self-Dislike, Guilt, Self-Image, and Suicide. The Negative Self-Evaluation factor from the analysis over 34 variables included the BDI items Failure, Satisfaction, Guilt, Punishment (same as Self-Dislike in Foelker, et al.), Self-Hate (same as Self-Image in Foelker, et al.), and Self-Blame. Factor II (Anergy) of the Foelker, et al. study had four BDI items with factor loadings, three of which were the same as the Low Energy

factor: Indecisiveness, Low Work Capacity (Foelker et al. refers to it as Work Difficulty), and Tiredness (Foelker et al.'s label is Fatigue).

The most obvious difference between the subjects' responses to the measures administered in the Foelker et al. (1986) study and the data under consideration is the absence of a dysphoria or sad affect factor in the latter. An explanation for these results is that the experience of depression among subjects in the latter study was less disruptive of mood, but disruptive of self-esteem and energy level. Subjects in the latter study were volunteers for what they assumed would be rigorous research. It may be argued that the task demand of taking initiative and volunteering for a research study might eliminate those experiencing the dysphoric symptoms of a moderate to severe depression.

The five factors isolated by the Scree test: (1) Ability, (2) Negative Self-Evaluation, (3) Effort-Difficulty, (4) Locus of Control, (5) Luck Attribution, are all orthogonal and fairly independent aspects of the set of the subjects responding to the measures administered to them. Ability, accounting for the most variance in the analysis, suggested that intelligence was the prominent factor in the success of the elders in solving problems. The negative correlation between luck Attribution and



Ability seems inherently reasonable; individuals of substantial ability depend on their problem-solving skills and not luck in a problem-solving situation, Individuals of lesser ability may rely on luck to interpret the reason behind success or failure, in order to preserve self-esteem. No other significant intercorrelations occurred between the five factors.

It is important to note that the Scree test resulted in identifying three factors that are related to the constructs of motivation: Effort-Difficulty, Locus of Control, and Luck Attribution. Subjects' responses were influenced by the way in which they perceived their command over the tasks, the testing situation, and the control they exercised over their lives as they were by actual mental ability and their own opinions of themselves. The five factor model may suggest that, while dysphoria is largely absent as a factor disrupting problem-solving behavior in the elderly, the effect of locus of control and attribution of success and failure may be more evident.

#### The Cognitive Factor in Depression

The cognitive component of elderly depression in this study was proposed to consist of measures of cognitive ability or performance. Other researchers have conceptualized the cognitive component of elderly depression as a cognitive distortion, characterized by

rigidity of personality, overgeneralization, magnification and pessimism about the future, all of which could potentially interfere with the acquisition of new learning (Weinstein & Khanna, 1986). The proposed cognitive component of elderly depression, as it was originally conceptualized, was not a factor in the analysis of the BDI scales plus measures of locus of control attribution, cognitive functioning and self report of health and education in this study. However, the factor of negative self-evaluation might be considered as a factor which concerns the aforementioned cognitive distortion, with depression in the elder taking the form of pessimism, magnification of personal faults, and overgeneralization. The BDI items that load on the factor of Negative Self-Evaluation would appear to fit this description. Ideally, these variables would be accompanied by cognitive performance measures with negative factor loadings. One incidence of a factor approaching this description is Paranoia-Gc (Factor 7), which includes one BDI item, Self Punishment, and negative loadings on the factor from the variables Vocabulary and Abstruse Analogies. An interpretation of the loading of the single BDI scale on this factor must be considered with caution, as the loading of this one item may reflect item specific variance only. One performance measure, Concrete Analogies, had a positive

loading on this factor, suggesting that easier tasks may possibly be much less affected by a depression which results in paranoid ideation.

Many of the variables proposed in the original exploratory factor analysis for this study were deleted primarily because of low factor loadings. Of the variables remaining, which were measures of cognitive ability, six had significant and positive loading on a Cognitive Ability factor, which had accounted for the most variance. This Ability factor also exhibited an inverse relationship with Luck Attribution and the Paranoia factor. This suggests that an unstable, external attribution cognitive set may not be compatible with competent performance of cognitive tasks. In the same way, low self-esteem appears to be inversely related to performance on measures of cognitive ability. Trait Self-Attribution (Factor 9) and Ability were positively related, suggesting that internal, stable causal attribution may be related to good performance on cognitive tasks.

The predicted relationships between a cognitive factor and a somatic, affective, and motivational factor are difficult to discuss, as they did not appear in the analysis as they had been conceptualized. The positive relationship between Ability and Trait Self-Attribution appears to lend support to the proposed positive

relationship between a cognitive factor and a motivational factor, in that self attribution represents an internal causal attribution. Internality is often associated with higher performance rates of behavior (Weinstein & Khanna, 1986) in the theoretical framework of locus of control theory and, by implication, should have a direct positive effect on level of motivation.

#### Somatic Complaints and Depression

The proposed somatic factor was not found in the factor analysis of the BDI plus the additional measures of attribution, locus of control, self-report of health and education, and cognitive functioning, suggesting that somatization of depressed affect is not prominent in elderly depression. Dye, et al. (1983) proposed that the central core of elderly depression may not include concern over declining health and therefore, may not be represented by a somatic component in elderly depression. The sample of elderly interviewed in this study did not appear to admit to somatic complaints as being one of the factors affecting their performance or well-being. Another possibility is that the subjects in the sample were influenced by only mild levels of depression. Somatization frequently occurs in severe levels of depression (Dessonville, et al., 1982) for both young and elderly.

The results of the factor analysis of the BDI plus additional measures of cognitive performance, locus of control, attribution and self-report of health and education included two factors with a somatic complaint variable loading on them: Self-Attribution/Poor Sleep, and Low Energy. This finding suggests the presence of somatic complaints as an influence on the performance of the sample, but in conjunction with a mental state pertaining to attribution and motivation.

#### The Affective Component of Depression

Elderly depression, as represented by the performance of this sample, does not appear to be characterized by sad affect or low mood, but rather a factor of Negative Self-Evaluation and a factor of Self-Punishment. Self Punishment (Factor 10) may come closest to such a proposed affective factor with positive loadings from variables Guilt, Punishment, and Suicide and a negative loading from State/Effort. This suggests a factor consisting of affective elements and inversely related to unstable, self-attributions. Self-Punishment (Factor 10) has an inverse relationship with Optimism (Factor 8), which also lends some support to the identification of Self-Punishment as an affective-type factor. The possibility of the sample experiencing only mild levels of depression may account for less prominence of sad affect as influential in the

subjects' performance. Low levels of depression, coupled with elders' tendency to avoid the usage of depressive terminology (Gallagher & Thompson, 1983) also aids in accounting for the absence of an affective component as proposed initially.

#### Motivation as a Factor of Depression

A unitary motivational factor was also not found in the data. However, four separate factors of attribution and one locus of control factor suggest the presence of the elements of motivational state in the analysis: the Effort/Difficulty factor, Luck Attribution, Self-Attribution/Poor Sleep and Trait Self-Attribution. Instead, Failure, Self-Hate, Self-Accusation, Indecisiveness, and Work inhibition emerged as factors tapping some aspect of motivation. The Luck Attribution factor included Chance (locus of control) as a variable constituting its structure, as had been predicted. The Effort/Difficulty factor included both state and trait attribution conditions for Effort and Difficulty of Task causal attributions. This is interesting, in that it incorporates both an internal unstable causal attribution and an external stable causal attribution in the same factor. The explanation for this condition is not clear. Trait Self-Attribution reflects a similar situation, however, both causal attributions of Ability and Effort

incorporate an internal causal attributions which may serve as the underlying construct. Self Attribution/ Poor Sleep combines a BDI item (sleep) which loads on this factor, with state causal attributions of ability and effort, again a combination of stable and unstable causal statements. The relationship between these factors are also unclear. Effort/Difficulty is positively related to Trait Self-Attribution, with the variable both factors have in common being the effort causal attribution in the "trait" attributional situation. Trait Self-Attribution also has an inverse relationship with Luck Attribution, as might be expected.

Locus of control is an isolated factor with a low correlation with the other factors in the analysis. It may act independently in elderly depression to exert its influence on performance. It appears that the constructs of causal attribution and locus of control are complex and difficult to clearly describe from these data.

Predictions made for factor loadings in this study from the variables survey were dependent upon the emergence of four factors of depression that were unitary and orthogonal. However, this was not present in the final factor analysis performed. Two factors not hypothesized emerged in the factor analysis of the BDI items, Nondepression I and Nondepression II. An Optimism factor

was also part of the final analysis. Interpretation of these factors is difficult, as the negative loadings on the depression scales could indicate a consistent denial of depression affecting the performance of the subjects. However, the sample tested was not from a clinical population, and these individuals may not have been experiencing depression to the degree which would allow depression to have a significant effect on performance. Optimism had an inverse relationship with Negative Self-Evaluation and Self-Punishment, suggesting that it is a factor which varies in relationship to the level of negative affect in the sample. Another explanation may be the tendency of elders to admit to low self-esteem or negative self-evaluation more readily than sad affect in describing depression (Gallagher & Thompson, 1983), which would serve to explain the absence of a sad affect factor in the data and might serve to explain items of the BDI associated with sad affect and pessimism to have been responded to by subjects consistently in a nonclinical direction. It may not be socially desirable for the elderly to admit to sad affect in describing affective state (Carnesten & Cone, 1983).

Although the four factor model of depression proposed did not hold up in the analyses, a few of the presuppositions underlying the model were supported.



Motivational components accounted for some variance, but not as a unitary factor, suggesting that motivation may be a more complex factor than originally proposed, requiring higher order factor analyses to determine its structure. Motivation, as a construct, however, may not be the best descriptor of this influence on performance in depressed elderly. A better conceptualization might be to propose separate factors of Locus of Control and Differential Attribution. This, of course, would also require additional analysis. These findings of this study are impetus to study the Beck Depression Inventory in conjunction with measures of attribution and locus of control to provide a clearer picture of elderly depression.

Gallagher and Thompson (1983) have developed the idea of depression as a "final common pathway" reflecting disturbance in a number of domains of functioning by applying this conceptualization to depression in the elderly. Depression, then, can be considered a complex category for a number of diverse symptoms which may or may not be inherently related to one another. The results of the factor analysis of measures of depression, locus of control, attribution, and intellectual ability revealed a complex factor structure accounting for the variance in performance of elderly subjects. This factor structure included some of the factors associated with a learned

helplessness conceptualization of depression. Causal attribution and locus of control represent a motivational component of depression which is not treated with the weight it deserves by traditional assessment instruments of depression. The clinical interview which includes questions designed to elicit information from the elderly subject concerning attribution and locus of control appears to be the most reliable means available to aid the clinician in determining the presence of motivational deficits associated with depression.

Information from these measures could aid in detecting the effects of low levels of depression on elders' adjustment (see Levy, Derogatis, Gallagher, & Gatz, 1980) while providing specific information to use to structure interventions that would be geared to maximizing the client's perceived control and competency in the affairs of everyday life. Such an approach to counseling the elderly would aid in more efficient diagnosis and effective treatment planning. The concept of locus of control may also be met with less client resistance than discussing feelings of depression, aiding the process of building a therapeutic alliance between clinician and patient. Using test-retest data regarding locus of control measures as a measure of progress in therapy for both research and therapeutic purposes may be a promising means by which to

assess the effectiveness of therapy for emotional disturbance in later life.

## CHAPTER REFERENCES

- Carstensen, L. L., & Cone, J. D. (1983). Social desirability and the measurement of psychological well-being in elderly persons. Journal of Gerontology, 38(6), 713-715.
- Dessonville, C., Gallagher, D., Thompson, L. W., Finnell, K., & Lewinsohn, P. M. (1982). Relation of age and health status of depressive symptoms in normal and depressed older adults. Essence, 5(2), 99-115.
- Dye, C. J., Bohm, K., Anderten, P., & Cho, D. W. (1983). Age group differences in depression on the MMPI D Scale. Journal of Clinical Psychology, 39(21), 227-234.
- Foelker, G. A., Shewchuk, R. M., & Niederehe, G. (1986, November). Confirmatory factor analysis of the short form Beck Depression Inventory on elderly community samples. Paper presented at the Annual Scientific Meeting of the Gerontological Society, New Orleans, La.
- Gallagher, D., & Thompson, L. W. (1983). Assessment and treatment of depression in the elderly: A review. In P. M. Lewinsohn and L. Teri (Eds.), Coping and adaptation in the elderly (pp 111-123). New York: Pergammon Press.

- Levy, S., Derogatis, L., Gallagher, D., & Gatz, M. (1980).  
Intervention with older adults and the evaluation  
outcome. In L. Poon (Ed.), Aging in the 80's:  
Psychological issues (pp. 86-97). Washington, D.C.:  
American Psychological Association.
- Weinstein, W. A., & Khanna, P. (1986). Depression in the  
elderly. New York: Philosophical Library, Inc.

APPENDIX A

Informed Consent

NORTH TEXAS STATE UNIVERSITY  
DENTON, TEXAS 76203-7438

CENTER FOR STUDIES IN AGING

INFORMED CONSENT FORM

TITLE OF STUDY: "FACILITATING OLDER PERSONS' PROBLEM SOLVING AND REASONING SKILLS"

PURPOSE OF THE STUDY: THE PURPOSE OF THE STUDY IS BOTH TO EXPLORE AND ENHANCE ADULTS' UNDERSTANDING OF CERTAIN PROBLEM-SOLVING TASKS. SINCE OLDER PERSONS HAVE HAD A WIDE VARIETY OF EXPERIENCES IN THEIR LIFETIME, IT IS EXPECTED THAT THEY WILL BE BETTER ABLE TO SOLVE SOME TASKS, DUE TO THESE EXPERIENCES. ON THE OTHER HAND, SOME SORTS OF PROBLEMS WILL SEEM QUITE DIFFICULT, PROBABLY BECAUSE THEY ARE UN-FAMILIAR.

PROCEDURE: MOST PARTICIPANTS WILL ATTEND SEVERAL SESSIONS IN WHICH THEY WILL BE GIVEN A SERIES OF PENCIL AND PAPER PROBLEM-SOLVING TASKS. THE FIVE MIDDLE SESSIONS, TO WHICH SOME WILL BE ASSIGNED, WILL INVOLVE PRACTICING PROBLEMS AND DISCUSSING HOW TO SOLVE THEM OR FOCUS ON CONFIDENCE-BUILDING TECHNIQUES. FIVE SESSIONS WILL BE ONE HOUR LONG; THE OTHERS WILL BE ABOUT TWO HOURS. AS MUCH AS POSSIBLE, THE TIMES AND LOCATIONS OF THE SESSIONS WILL BE ARRANGED AT THE CONVENIENCE OF THE PARTICIPANTS.

SAFEGUARDS: YOUR PERFORMANCE WILL BE KEPT COMPLETELY CONFIDENTIAL. ALL INDIVIDUAL ANSWER FORMS WILL BE IDENTIFIED BY A CODE NUMBER ASSIGNED AT THE TIME OF TESTING. WE ARE NOT INTERESTED IN COMPARING PERSONS, ONLY IN EXAMINING DIFFERENCES AMONG GROUPS.

PARTICIPATION IN THIS STUDY IS ENTIRELY VOLUNTARY, AND YOU MAY END YOUR PARTICIPATION AT ANY TIME YOU DESIRE. TO THE BEST OF OUR KNOWLEDGE, PARTICIPATION IN THIS STUDY WILL NOT CAUSE PHYSICAL OR PSYCHOLOGICAL HARM.

PAYMENT AT THE RATE OF \$4/HOUR WILL BE MADE TO EACH INDIVIDUAL AT THE CONCLUSION OF HIS/HER PARTICIPATION IN THE STUDY.

PARTICIPATION IN A STUDY SUCH AS THE PRESENT ONE PROVIDES A NEW EXPERIENCE FOR THE INDIVIDUAL. SUCH AN EXPERIENCE MAY OFFER POSSIBILITIES FOR CONTINUING GROWTH AND DEVELOPMENT, BOTH SOCIALLY AND MENTALLY.

IN ADDITION TO PERSONAL AND FINANCIAL BENEFITS, IT IS BELIEVED THAT FINDINGS OF STUDIES SUCH AS THE PRESENT ONE MAY BE INSTRUMENTAL IN CHANGING SOCIETY'S VIEWS ON INTELLECTUAL PERFORMANCE IN LATER ADULTHOOD. MANY PEOPLE UNCRITICALLY ACCEPT THE PESSIMISTIC VIEW OF OLDER ADULTS, WHICH FOCUSES ON THE DECLINES IN ABILITY. EVIDENCE WHICH WOULD INDICATE THAT OLDER ADULTS PERFORM AS WELL AS YOUNGER AGE GROUPS MAY SERVE TO ALTER SOCIETY'S POLICIES AND DECISIONS ABOUT OLDER CITIZENS.

NORTH TEXAS STATE UNIVERSITY  
DENTON, TEXAS 76203-3438

CENTER FOR STUDIES IN AGING

INFORMED CONSENT FORM

TITLE OF STUDY: "FACILITATING OLDER ADULTS' PROBLEM SOLVING  
AND REASONING SKILLS"  
INVESTIGATOR: BERT HAYSLIP, JR.

THIS IS TO CERTIFY THAT I, \_\_\_\_\_  
(PRINT)

HEREBY AGREE TO PARTICIPATE AS A VOLUNTEER IN A SCIENTIFIC STUDY AS AN AUTHORIZED PART OF THE EDUCATIONAL AND RESEARCH PROGRAM OF NORTH TEXAS STATE UNIVERSITY UNDER THE SUPERVISION OF BERT HAYSLIP, JR.

THE INVESTIGATION AND MY PART IN THE INVESTIGATION HAVE BEEN DEFINED AND FULLY EXPLAINED TO ME BY \_\_\_\_\_ AND I UNDERSTAND HER/HIS EXPLANATION. THE PROCEDURES OF THIS INVESTIGATION AND THEIR RISKS AND DISCOMFORTS HAVE BEEN DESCRIBED IN A SEPARATE STATEMENT AND HAVE BEEN DISCUSSED WITH ME IN DETAIL.

I HAVE BEEN GIVEN AN OPPORTUNITY TO ASK WHATEVER QUESTIONS I MAY HAVE HAD AND ALL SUCH QUESTIONS AND INQUIRIES HAVE BEEN ANSWERED TO MY SATISFACTION.

I UNDERSTAND THAT I AM ABLE TO REFUSE TO ANSWER ANY QUESTION IN INTERVIEWS OR QUESTIONNAIRES.

I UNDERSTAND THAT ANY DATA OR ANSWERS TO QUESTIONS WILL REMAIN CONFIDENTIAL WITH REGARD TO MY IDENTITY.

I FURTHER UNDERSTAND THAT I AM FREE TO WITHDRAW MY CONSENT AND TERMINATE MY PARTICIPATION AT ANY TIME.

\_\_\_\_\_  
(DATE)

\_\_\_\_\_  
(SUBJECT'S SIGNATURE)

Code No. \_\_\_\_\_

I, THE UNDERSIGNED, HAVE DEFINED AND FULLY EXPLAINED THE INVESTIGATION TO THE ABOVE SUBJECT.

\_\_\_\_\_  
(DATE)

\_\_\_\_\_  
(INVESTIGATOR'S SIGNATURE)



APPENDIX B

Battery of Tests Administered



## Source of Income:

\_\_\_\_\_ Wages and salaries  
\_\_\_\_\_ Social security  
\_\_\_\_\_ Pensions/retirement plans  
\_\_\_\_\_ Member of your family  
\_\_\_\_\_ Rent, or income on property that you own  
\_\_\_\_\_ Interest/dividends from investments or savings  
\_\_\_\_\_ Other sources (specify)

Counting what you and your spouse get from all sources, what was your total income last year?

\_\_\_\_\_ Under \$3,000  
\_\_\_\_\_ \$3,000 - 3,999  
\_\_\_\_\_ \$4,000 - 4,999  
\_\_\_\_\_ \$5,000 - 5,999  
\_\_\_\_\_ \$6,000 - 6,999  
\_\_\_\_\_ \$7,000 - 7,999  
\_\_\_\_\_ \$8,000 - 9,999  
\_\_\_\_\_ \$10,000 -14,999  
\_\_\_\_\_ \$15,000 -19,999  
\_\_\_\_\_ \$20,000 -24,999  
\_\_\_\_\_ \$25,000 or over

S \_\_\_\_\_  
T \_\_\_\_\_

ANSWER THE QUESTIONS ON THE FOLLOWING PAGES TO THE BEST OF YOUR ABILITY. YOU NEED NOT HURRY. YOU WILL BE GIVEN PLENTY OF TIME. BUT DO NOT DALLY, EITHER.

TRY TO GIVE AN ANSWER TO EVERY QUESTION. IF YOU FEEL THERE IS NO GOOD ANSWER TO A QUESTION, PUT A CIRCLE AROUND NA, MEANING NO ANSWER. GIVE AN ANSWER OR AN NA RESPONSE TO EVERY QUESTION. DO NOT LEAVE ANY QUESTION BLANK.

IF YOU DO NOT UNDERSTAND A QUESTION, MAKE YOUR BEST GUESS AS TO IT'S MEANING AND THEN PROVIDE EITHER AN ANSWER OR AN NA RESPONSE BASED UPON THIS MEANING. FEEL FREE TO WRITE IN THE MARGINS OF THE TEST TO SHOW YOUR MEANING OF A QUESTION.

DO YOUR BEST. THAT IS ALL THAT IS REQUESTED.

## MULTIPLE CHOICE VOCABULARY

S \_\_\_\_\_  
T \_\_\_\_\_

FIND THE WORD IN EACH LINE WHICH HAS MOST NEARLY THE SAME MEANING AS THE FIRST WORD, AND PUT A CIRCLE AROUND THIS WORD.

EXAMPLE:

FIRST WORD

LARGE      SMALL      QUICK      LAST      **BIG**      FAR      NA

BIG HAS MOST NEARLY THE SAME MEANING AS LARGE AND THEREFORE A CIRCLE HAS BEEN DRAWN AROUND BIG. ANSWER THE FOLLOWING QUESTIONS IN THE SAME WAY. IN EACH QUESTION, PUT A CIRCLE AROUND ONLY ONE OF THE CHOICES TO THE RIGHT.

FIRST WORD	CHOOSE THE WORD WHICH HAS MOST NEARLY THE SAME MEANING					
NEAR	NEAT	FRONT	COME	LOST	CLOSE	NA
WET	DAMP	COOL	FALL	GREEN	SKY	NA
DISTANT	LONG	DIM	FAR	STAR	QUIET	NA
SLENDER	FAST	STOUT	SLIM	WEAK	GIRL	NA
CEASE	ASSERT	STOP	RENT	FIRE	QUALITY	NA
INDOLENT	YELLOW	LAZY	OCEAN	NICE	TREE	NA
PORTION	FOOD	HARM	PIGMY	PART	ANSWER	NA
JOURNEY	COMMON	METHOD	TRIP	STREAM	PLACE	NA
LUMINOUS	BRIGHT	EXPERT	FRESH	SLIMY	TIMID	NA
PLACID	GREEN	CRASH	FAST	SPRY	CALM	NA
GUILE	TRICKERY	SENSE	FEELING	BLAME	HUMOR	NA
SIMIAN	BIZARRE	APELIKE	FRIENDLY	SONOROUS	NEAT	NA
DIFFIDENT	OBSOLETE	SHY	REVERIE	CERTAIN	NIMBUS	NA
FATUOUS	INANE	HEAVY	TORPOR	POWERFUL	MONISM	NA
BADINAGE	GENE	TEPID	NOTICE	RAILLERY	WOUND	NA

## COMMON ANALOGIES

S \_\_\_\_\_  
T \_\_\_\_\_

EXAMPLE:

LIGHT IS TO DARK AS HAPPY IS TO  
 GLAD                    **SAD**                    GAY                    EAGER                    DIM                    NA

NOTICE THAT DARK IS AN OPPOSITE OF LIGHT AND SAD IS AN OPPOSITE OF HAPPY. FOR THIS REASON SAD CAN BE ACCEPTED AS THE BEST ANSWER. THIS IS BECAUSE IT IS RELATED TO HAPPY IN THE SAME WAY AS DARK IS RELATED TO LIGHT. IN THIS NEXT EXAMPLE YOU CAN SEE THE SAME SORT OF THING AGAIN:

EXAMPLE:

AUNT IS TO WOMAN AS UNCLE IS TO  
 FATHER                    GIRL                    BOY                    SON                    **MAN**                    NA

THIS TIME, HOWEVER, THE PAIRS OF WORDS ARE NOT OPPOSITES. BUT AGAIN, MAN CAN BE ACCEPTED AS THE BEST ANSWER BECAUSE IT IS RELATED TO UNCLE IN THE SAME WAY AS WOMAN IS TO AUNT.

DO ALL THE FOLLOWING QUESTIONS IN THE SAME WAY. IN EACH QUESTION PUT A CIRCLE AROUND ONLY ONE OF THE CHOICES TO INDICATE YOUR ANSWER.

---

 PART I
 

---

FIRE IS TO HOT AS ICE IS TO  
 POLE                    WHITE                    COLD                    CREAM                    BURN                    NA

SURPRISE IS TO STRANGE AS FEAR IS TO  
 ANXIOUS                    WEAK                    QUICK                    TERRIBLE                    BRAVE                    NA

GROUND IS TO FOOT AS RAIL IS TO  
 WHEEL                    TRAIN                    AUTO                    IRON                    STATION                    NA

STATUE IS TO SHAPE AS SONG IS TO  
 BEAUTY                    COLOR                    PIANO                    NOTE                    TUNE                    NA

PIPE IS TO TOBACCO AS STOVE IS TO  
 COAL                    SMOKE                    FIREPLACE                    CHIMNEY                    FIRE                    NA

THERE IS TO HERE AS THEN IS TO  
 BEFORE                    FOREVER                    PLACE                    NOW                    WHEN                    NA

LOVE IS TO HATE AS FRIEND IS TO  
 LOVER                    FEELING                    PAL                    ENEMY                    OBEY                    NA

FLAME IS TO HEAT AS ROSE IS TO  
 SCENT                    LEAVES                    PETALS                    THORN                    WOOD                    NA

S \_\_\_\_\_  
T \_\_\_\_\_

WIN IS TO JOY AS LOSE IS TO						
	SADNESS	SUCCESS	FAIL	DREAM	FUN	NA
SPACE IS TO POINT AS TIME IS TO						
	CLOCK	STANDARD	ETERNAL	PORTION	MOMENT	NA
RAIN IS TO HAIL AS DEW IS TO						
	SNOW	FROST	WATER	CLOUD	SEA	NA
BETTER IS TO WORST AS SLOWER IS TO						
	FAST	RAPID	BEST	QUICKEST	LEAST	NA

ABSTRUSE ANALOGIESPART 2

CAT IS TO FELINE AS HORSE IS TO						
	CARNIVORE	EQUINE	QUADRUPED	CANINE	VULPINE	NA
SCISSORS IS TO CLOTH AS SCYTHE IS TO						
	WOOD	STEEL	GRASS	HAIR	NAILS	NA
FORE IS TO AFT AS BOW IS TO						
	DECK	STARBOARD	STERN	BOAT	ARROW	NA
CONSTELLATION IS TO STAR AS ARCHIPELAGO IS TO						
	ISLAND	PENINSULA	CONTINENT	NATIVE	COUNTRY	NA
WOOL IS TO SHEEP AS MOHAIR IS TO						
	CAMEL	GOAT	RABBIT	BISON	LAMB	NA
GOOSE IS TO GANDER AS HOG IS TO						
	COW	ROOT	SOW	CORN	PIG	NA
LENORE IS TO POE AS ALICE IS TO						
	HOUSMAN	WHITMAN	CARROLL	BYRON	FROST	NA
GUSTATORY IS TO TASTE AS OLFATORY IS TO						
	SMELL	TOUCH	FEEL	HEAR	BALANCE	NA
HOMICIDE IS TO LAW AS EDEMA IS TO						
	PEDAGOGY	THEOLOGY	ACTING	DRAFTING	MEDICINE	NA
ARMADILLO IS TO ANIMAL AS CHARD IS TO						
	VEGETABLE	DRINK	SNAKE	FISH	LIZARD	NA
THREE IS TO TRIANGE AS FIVE IS TO						
	HEXAGON	TRAPAZOID	SCHISM	CIRCLE	PENTAGON	NA
GRAIN IS TO MAIZE AS GRASS IS TO						
	AZTEC	CORN	TIMOTHY	JERSEY	TREE	NA
SNOCKER IS TO BALLS AS EUCHRE IS TO						
	CARDS	PINS	RACKETS	DICE	CLUBS	NA

## LETTER SERIES

S \_\_\_\_\_  
T \_\_\_\_\_

## TEST 3

IN THESE QUESTIONS, WRITE THE LETTER THAT COMES NEXT IN A SERIES OF LETTERS.

EXAMPLE:

A B C D E F G \_\_\_\_\_ NA

THE NEXT LETTER IN THIS SERIES IS H. TRY ANOTHER EXAMPLE.

EXAMPLE:

A B B C C C D D D D E E E E \_\_\_\_\_ NA

THIS TIME THE NEXT LETTER IS E. YOU CAN SEE THAT A OCCURS ONCE, B TWICE, C THREE TIMES, D FOUR TIMES AND SO E SHOULD OCCUR FIVE TIMES. BUT THERE ARE ONLY FOUR E'S LISTED. THEREFORE, THE NEXT LETTER IN THE SERIES SHOULD BE E.

HERE ARE SOME EXAMPLES WITH THE RIGHT ANSWER GIVEN. STUDY THESE EXAMPLES TO MAKE SURE YOU UNDERSTAND THIS KIND OF QUESTION.

EXAMPLE:

G F E D C B A Z \_\_\_\_\_ Y NA

IN THIS SERIES THE ALPHABET IS WRITTEN BACKWARDS. WHEN THE SERIES COMES TO A, IT GOES TO THE END OF THE ALPHABET TO THE LETTER Z, AND CONTINUES ON BACKWARDS, SO Y IS NEXT IN THE SERIES.

EXAMPLE:

R S R T R U R V R \_\_\_\_\_ W NA

HERE THE LETTERS IN THE SERIES S T U V ARE SEPARATED BY AN R. THE LAST LETTER TO APPEAR IS ONE OF THESE R'S, SO THE NEXT LETTER IS V.

EXAMPLE:

Z Q S S A B D C \_\_\_\_\_ (NA)

THERE SEEMS TO BE NO ORDER IN THIS SET OF LETTERS. THUS THERE MAY BE NO SATISFACTORY ANSWER FOR THIS QUESTION. IF YOU COME TO A QUESTION OF THIS KIND, PUT A CIRCLE AROUND NA TO INDICATE "NO GOOD ANSWER."



S \_\_\_\_\_

T \_\_\_\_\_

EXAMPLE:

U V W X . Y Z

  A   NA

IN THIS SERIES THE LETTERS ARE THE USUAL ORDER OF SAYING THE ALPHABET. WHEN THE END OF THE ALPHABET IS REACHED, THE SERIES CONTINUES BY BEGINNING AT THE FRONT OF THE ALPHABET, WITH THE LETTER A. THUS THE LETTER A IS NEXT IN THIS SERIES.

DO NOT LEAVE A PROBLEM WITHOUT RECORDING A SOLUTION OR AN NA RESPONSE. ATTEMPT THE PROBLEMS IN THE ORDER THEY APPEAR.

C C Z C C Y C C X C C \_\_\_\_\_ NA

R C R S C S T C T U C \_\_\_\_\_ NA

B C C D E E F G \_\_\_\_\_ NA

A B C R S T D E F Q R S G H I \_\_\_\_\_ NA

T R A T R B T R C T R \_\_\_\_\_ NA

L O M P N \_\_\_\_\_ NA

C E B D A C Z B \_\_\_\_\_ NA

Q K P O L M N M L N O P \_\_\_\_\_ NA

A D G B E H C F \_\_\_\_\_ NA

X F H Z J L B N P \_\_\_\_\_ NA

C W V D E F U T S R G H I J K \_\_\_\_\_ NA

A X A Y B X B Y C X C Y \_\_\_\_\_ NA

O P Q O P Q R S T R S T U \_\_\_\_\_ NA

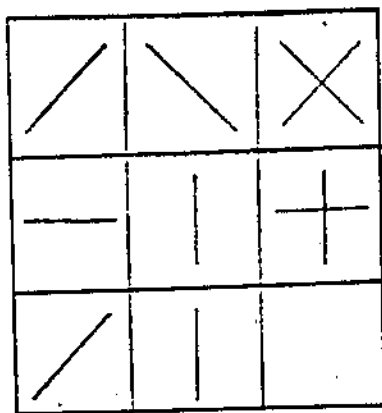
A M B C M D E F M G H I J \_\_\_\_\_ NA

Z A X Z Z X Z Y X Z X X Z \_\_\_\_\_ NA

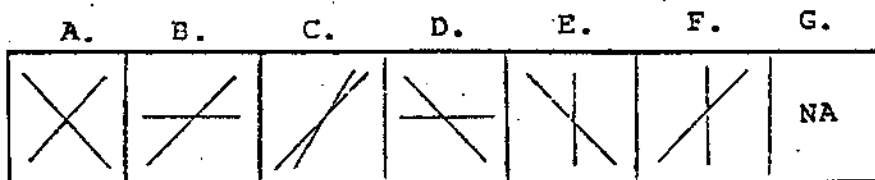
HORN MATRICES  
TEST 4

S \_\_\_\_\_  
T \_\_\_\_\_

FIND THE PICTURE ON THE RIGHT WHICH SHOULD BE IN THE EMPTY SQUARE ON THE LEFT. WRITE THE LETTER THAT CORRESPONDS WITH THE CORRECT ANSWER IN THE SPACE TO THE FAR RIGHT NEXT TO THE PROBLEM NUMBER, EXAMPLE:

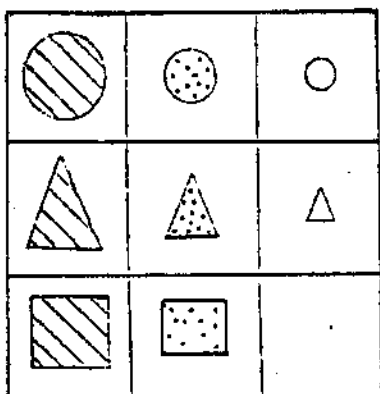


    F     1.

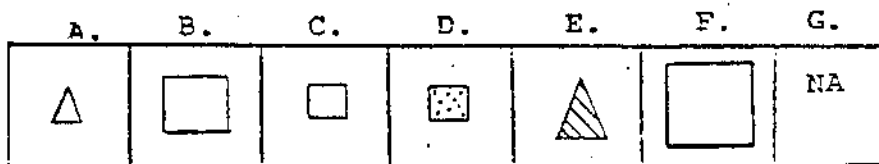


THE CORRECT ANSWER - F. - HAS BEEN WRITTEN IN THE ANSWER SPACE, MAKE SURE YOU UNDERSTAND WHY THIS IS THE CORRECT ANSWER, HERE IS ANOTHER EXAMPLE FOR YOU TO TRY:

EXAMPLE:



    C     2.

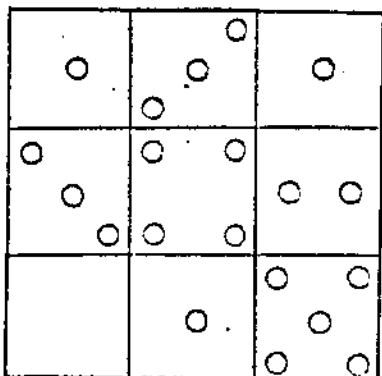


AGAIN THE ANSWER IS WRITTEN IN THE ANSWER SPACE, HERE IS AN EXAMPLE IN WHICH THERE MAY BE NO REALLY CORRECT ANSWER.

S \_\_\_\_\_

T \_\_\_\_\_

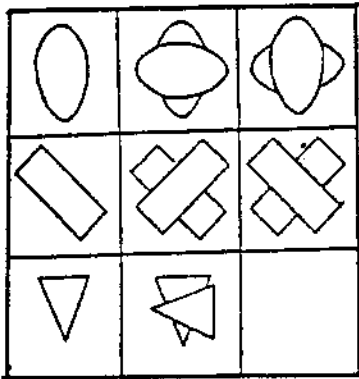
EXAMPLE:

6 3.

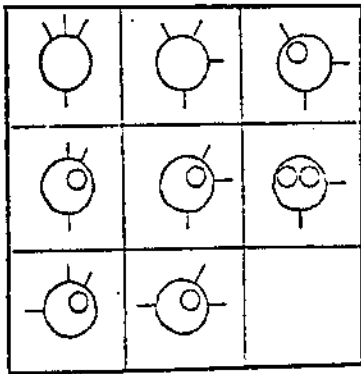
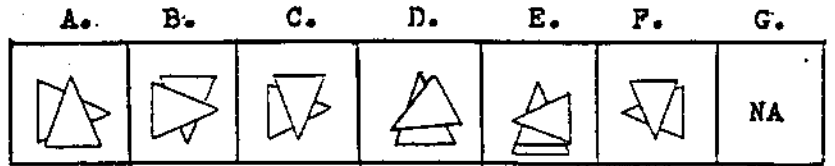
A.	B.	C.	D.	E.	F.	G.
						NA

IF YOU COME TO AN ITEM OF THIS KIND, WRITE IN ANSWER G. - MEANING  
"NO GOOD ANSWER".

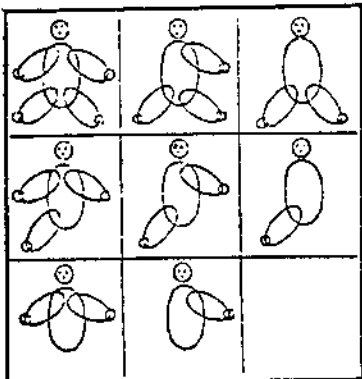
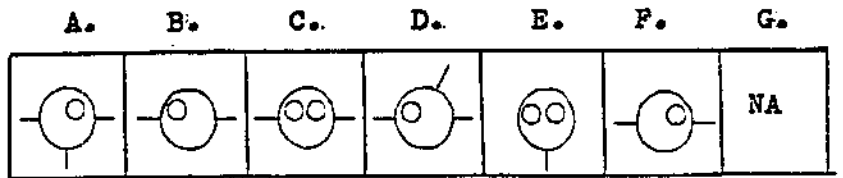




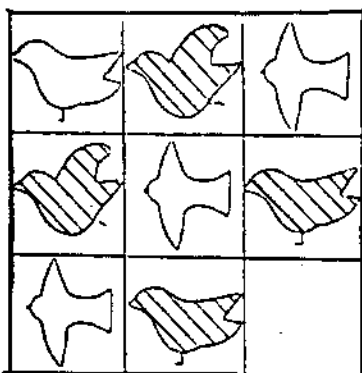
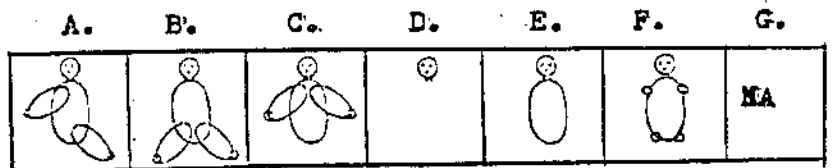
\_\_\_\_\_ 5.



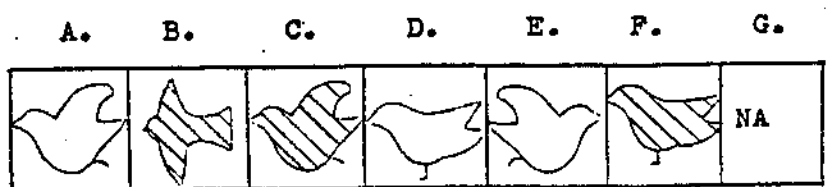
\_\_\_\_\_ 6.

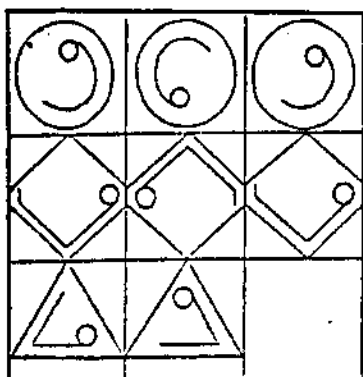


\_\_\_\_\_ 7.

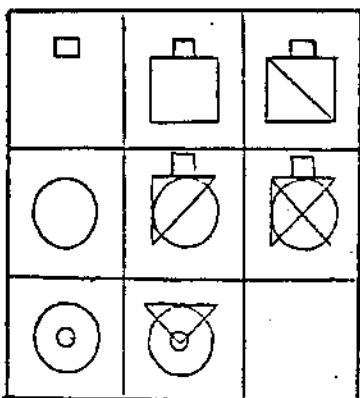
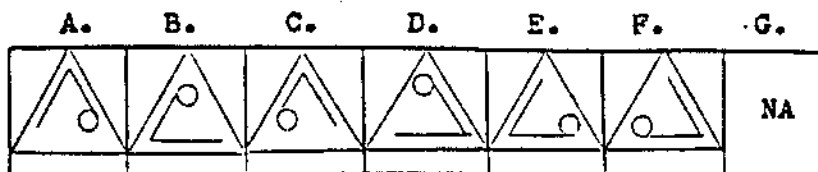


\_\_\_\_\_ 8.

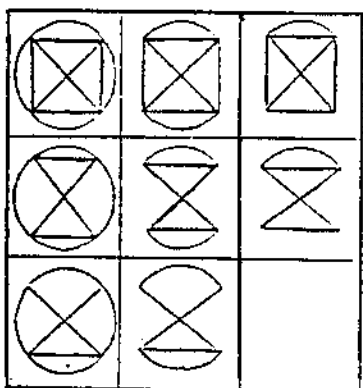
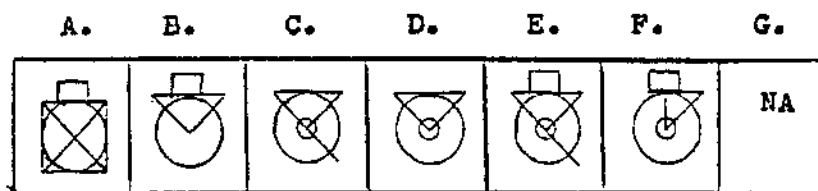




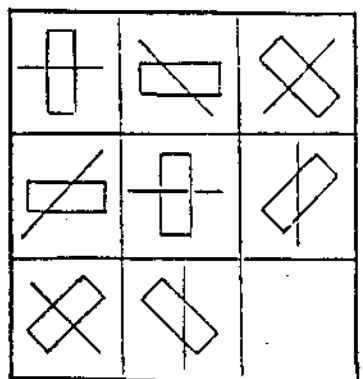
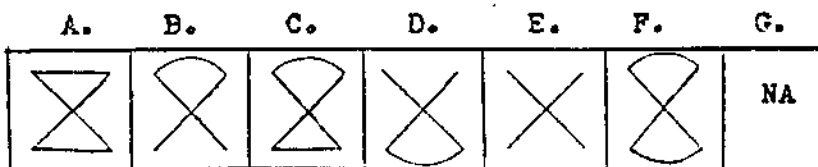
\_\_\_\_\_ 9.



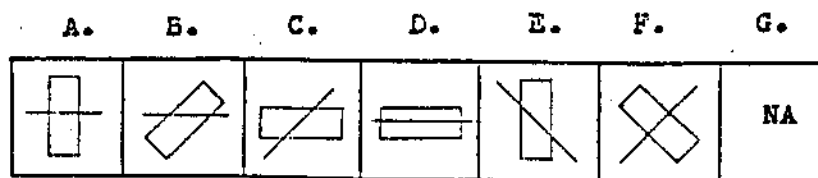
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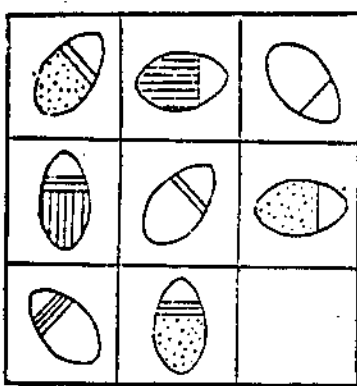


\_\_\_\_\_ 11.

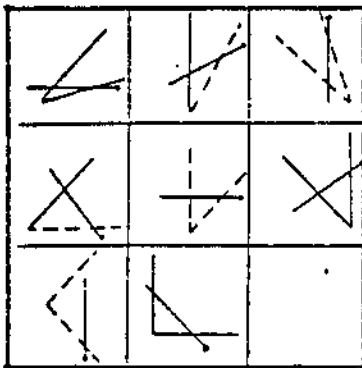
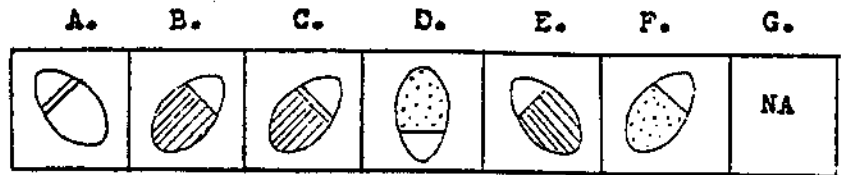


\_\_\_\_\_ 12.

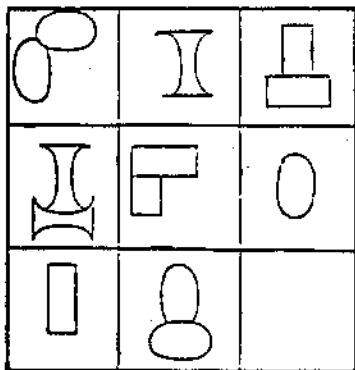
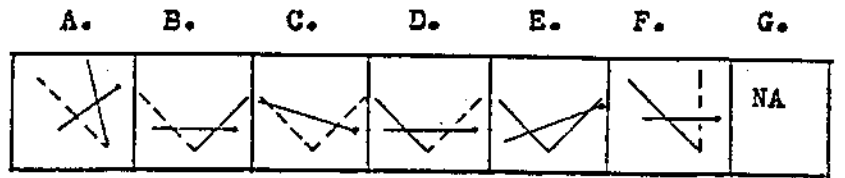




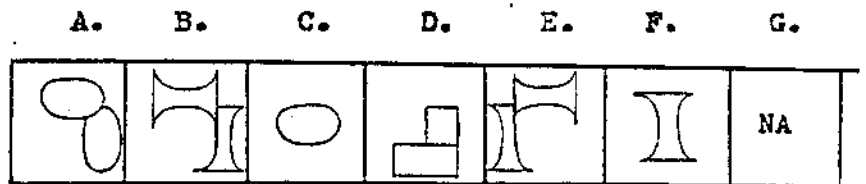
\_\_\_\_\_13.



\_\_\_\_\_14.



\_\_\_\_\_15.



S \_\_\_\_\_

T \_\_\_\_\_

## LETTER SETS

EACH PROBLEM IN THIS SECTION HAS FIVE GROUPS OF LETTERS WITH FOUR LETTERS IN EACH GROUP. FOUR OF THE GROUPS OF LETTERS ARE ALIKE IN SOME WAY. YOU ARE TO FIND THE RULE THAT MAKES THESE FOUR GROUPS ALIKE. THE FIFTH GROUP IS DIFFERENT FROM THEM AND WILL NOT FIT THIS RULE. DRAW AN X THROUGH THE GROUP OF LETTERS THAT IS DIFFERENT.

NOTE: THE RULES WILL NOT BE BASED ON THE SOUNDS OF GROUPS OF LETTERS, THE SHAPES OF LETTERS, OR WHETHER LETTER COMBINATIONS FOR A WORD OR PARTS OF WORDS.

EXAMPLES:

A. NOPO    ~~DEEL~~    ABCD    HIJK    UVWX

B. NLIR    PLIK    QLIK    ~~TIK~~    VLIK

IN EXAMPLE A, FOUR OF THE GROUPS HAVE LETTERS IN ALPHABETICAL ORDER. AN X HAS THEREFORE BEEN DRAWN THROUGH ~~DEEL~~. IN EXAMPLE B, FOUR OF THE GROUPS CONTAIN THE LETTER L. THEREFORE, AN X HAS BEEN DRAWN THROUGH ~~TIK~~.

YOUR SCORE ON THIS SECTION WILL BE THE NUMBER OF PROBLEMS MARKED CORRECTLY MINUS A FRACTION OF THE NUMBER MARKED INCORRECT. THEREFORE, IT WILL NOT BE TO YOUR ADVANTAGE TO GUESS UNLESS YOU ARE ABLE TO ELIMINATE ONE OR MORE OF THE LETTER GROUPS.



S \_\_\_\_\_

T \_\_\_\_\_

## LETTER SETS - CONTINUED

WORK QUICKLY, BUT AT YOUR OWN PACE: DO NOT SPEND AN EXCESSIVE AMOUNT OF TIME ON ANY SINGLE ITEM. YOU WILL HAVE PLENTY OF TIME IN WHICH TO COMPLETE THESE PROBLEMS.

DO NOT TURN THIS PAGE UNTIL ASKED TO DO SO.

S \_\_\_\_\_  
T \_\_\_\_\_

## LETTER SETS - CONTINUED

1.	BCEF	FGIJ	STWX	CDFG	PQST
2.	BEPW	HJTX	KNRZ	KOSV	WRPM
3.	RRBR	QQAR	FTEF	JXIJ	SSCS
4.	AQUI	CTZR	JHTN	PBRL	RTVH
5.	WOGD	BFOP	GHUZ	XSIH	POLF
6.	CERT	KMTV	FHXZ	BODQ	HJPR
7.	CFCR	JCVC	CGCS	CLXC	KCWC
8.	PXCC	EEQX	RXGG	IISX	TXLL
9.	VEBT	XGDV	ZIFX	KXVH	MZXJ
10.	AFBG	EJFK	GKHM	PSQT	RWSX

## ANAGRAMS

S \_\_\_\_  
T \_\_\_\_

AN ANAGRAM IS A SCRAMBLED WORD. SOME ANAGRAMS ARE MORE DIFFICULT TO UNSCRAMBLE THAN ARE OTHERS. IN THE LIST OF ANAGRAMS TO FOLLOW, TRY TO UNSCRAMBLE EACH ITEM. WORK AT A COMFORTABLE PACE, BUT DON'T SPEND A LOT OF TIME ON ANY ONE ITEM, AS SOME ANAGRAMS ARE MORE DIFFICULT THAN OTHERS. YOU ARE ASKED NOT TO USE NOTES TO REACH SOLUTION FOR EACH ITEM. PLEASE ATTEMPT TO SOLVE EACH ITEM, AND TRY TO DO YOUR BEST. YOUR HELP IS MUCH APPRECIATED. HERE ARE A FEW PRACTICE PROBLEMS AND THEIR ANSWERS THAT YOU CAN STUDY BEFORE BEGINNING. ARE THERE ANY QUESTIONS?

ANAGRAMSOLUTION

E L C O S

CLOSE

E U O H S

HOUSE

N R D K I

DRINK



S \_\_\_\_

T \_\_\_\_

## INSTRUCTIONS FOR SPATIAL TASK

SPATIAL FORWARD: I AM GOING TO POINT TO SOME CHECKERS. WATCH CAREFULLY, AND WHEN I AM THROUGH POINT TO THE CHECKERS RIGHT AFTER ME.

SPATIAL BACKWARD: NOW I AM GOING TO POINT TO SOME MORE CHECKERS, BUT THIS TIME WHEN I STOP, I WANT YOU TO POINT TO THE CHECKERS BACKWARDS. FOR EXAMPLE, IF I POINT TO "7-1-9", WHERE WOULD YOU POINT?

1. IF THE SUBJECT RESPONDS CORRECTLY, SAY "HERE ARE SOME OTHERS" AND START WITH TRIAL 1 OF THE 3-DIGIT SERIES.
2. IF THE SUBJECT'S REPLY IS INCORRECT: GIVE THE RIGHT ANSWER AND SAY "REMEMBER YOU ARE TO POINT THEM BACKWARDS: POINT TO "3-4-8".
  - (1) IF THE SUBJECT IS CORRECT, START WITH TRIAL 1 OF THE 3-DIGIT SERIES.
  - (2) IF THE SUBJECT FAILS, PROCEED WITH THE TEST BY GIVING TRIAL 1 OF THE 2-DIGIT SERIES.

S \_\_\_\_\_

T \_\_\_\_\_

## INSTRUCTIONS FOR DIGITS

DIGITS FORWARD: I AM GOING TO SAY SOME NUMBERS. LISTEN CAREFULLY, AND WHEN I AM THROUGH SAY THEM RIGHT AFTER ME.

DIGITS BACKWARD: NOW I AM GOING TO SAY SOME MORE NUMBERS, BUT THIS TIME WHEN I STOP, I WANT YOU TO SAY THEM BACKWARDS. FOR EXAMPLE, IF I SAY "7-1-9", WHAT WOULD YOU SAY?

1. IF THE SUBJECT RESPONDS CORRECTLY, SAY "HERE ARE SOME OTHERS" AND START WITH TRIAL 1 OF THE 3-DIGIT SERIES.
2. IF THE SUBJECT'S REPLY IS INCORRECT: GIVE THE RIGHT ANSWER AND SAY "REMEMBER YOU ARE TO POINT THEM BACKWARDS: SAY "3-4-8".
  - (1) IF THE SUBJECT IS CORRECT, START WITH TRIAL 1 OF THE 3-DIGIT SERIES.
  - (2) IF THE SUBJECT FAILS, PROCEED WITH THE TEST BY GIVING TRIAL 1 OF THE 2-DIGIT SERIES.

S \_\_\_\_\_

T \_\_\_\_\_

SPATIAL FORWARD

5 - 8 - 2	3
6 - 9 - 4	3
6 - 4 - 3 - 9	4
7 - 2 - 8 - 6	4
4 - 2 - 7 - 3 - 1	5
7 - 5 - 8 - 3 - 6	5
6 - 1 - 9 - 4 - 7 - 3	6
3 - 9 - 2 - 4 - 8 - 7	6
5 - 9 - 1 - 7 - 4 - 2 - 8	7
4 - 1 - 7 - 9 - 3 - 8 - 6	7
5 - 8 - 1 - 9 - 2 - 6 - 4 - 7	8
3 - 8 - 2 - 9 - 5 - 1 - 7 - 4	8
2 - 7 - 5 - 8 - 6 - 2 - 5 - 8-4	9
7 - 1 - 3 - 9 - 4 - 2 - 5 - 6-8	9

SPATIAL BACKWARD

2 - 4	2
5 - 8	2
6 - 2 - 9	3
4 - 1 - 5	3
3 - 2 - 7 - 9	4
4 - 9 - 6 - 8	4
1 - 5 - 2 - 8 - 6	5
6 - 1 - 8 - 4 - 3	5
5 - 3 - 9 - 4 - 1 - 8	6
7 - 2 - 4 - 8 - 5 - 6	6
8 - 1 - 2 - 9 - 3 - 6 - 5	7
4 - 7 - 3 - 9 - 1 - 2 - 8	7
9 - 4 - 3 - 7 - 6 - 2 - 5-8	8
7 - 2 - 8 - 1 - 9 - 6 - 5-3	8

DIGITS FORWARD

7 - 4 - 3	3
1 - 8 - 4	3
4 - 1 - 9 - 8	4
5 - 1 - 7 - 6	4
8 - 1 - 7 - 3 - 9	5
6 - 4 - 2 - 1 - 8	5
9 - 3 - 4 - 8 - 5 - 2	6
6 - 8 - 3 - 9 - 1 - 4	6
7 - 1 - 5 - 2 - 3 - 4 - 8	7
2 - 5 - 1 - 3 - 9 - 7 - 8	7
4 - 8 - 5 - 2 - 1 - 6 - 9 - 3	8
6 - 1 - 3 - 8 - 7 - 9 - 4 - 2	8

DIGITS BACKWARD

4 - 3	2
1 - 9	2
8 - 5 - 7	3
2 - 4 - 1	3
9 - 7 - 4 - 5	4
1 - 6 - 2 - 3	4
4 - 2 - 7 - 6 - 8	5
1 - 8 - 4 - 3 - 6	5
7 - 8 - 2 - 5 - 4 - 1	6
3 - 9 - 5 - 6 - 4 - 7	6
9 - 5 - 7 - 2 - 3 - 8 - 6	7
8 - 9 - 4 - 7 - 1 - 6 - 5	7

S \_\_\_\_\_

T \_\_\_\_\_

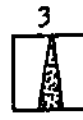
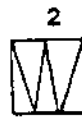
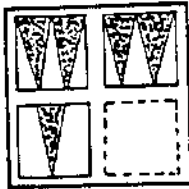
POISONED FOODS TASK

<u>TRIAL</u>	<u>+ OR -</u>	<u>TRIAL</u>	<u>+ OR -</u>	<u>TRIAL</u>	<u>+ OR -</u>	<u>TRIAL</u>	<u>+ OR -</u>
1	_____	28	_____	55	_____	82	_____
2	_____	29	_____	56	_____	83	_____
3	_____	30	_____	57	_____	84	_____
4	_____	31	_____	58	_____	85	_____
5	_____	32	_____	59	_____	86	_____
6	_____	33	_____	60	_____	87	_____
7	_____	34	_____	61	_____	88	_____
8	_____	35	_____	62	_____	89	_____
9	_____	36	_____	63	_____	90	_____
10	_____	37	_____	64	_____	91	_____
11	_____	38	_____	65	_____	92	_____
12	_____	39	_____	66	_____	93	_____
13	_____	40	_____	67	_____	94	_____
14	_____	41	_____	68	_____	95	_____
15	_____	42	_____	69	_____	96	_____
16	_____	43	_____	70	_____	97	_____
17	_____	44	_____	71	_____	98	_____
18	_____	45	_____	72	_____	99	_____
19	_____	46	_____	73	_____	100	_____
20	_____	47	_____	74	_____	101	_____
21	_____	48	_____	75	_____	102	_____
22	_____	49	_____	76	_____	103	_____
23	_____	50	_____	77	_____	104	_____
24	_____	51	_____	78	_____	105	_____
25	_____	52	_____	79	_____	106	_____
26	_____	53	_____	80	_____	107	_____
27	_____	54	_____	81	_____	108	_____



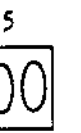
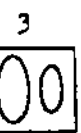
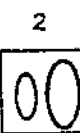
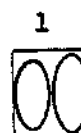
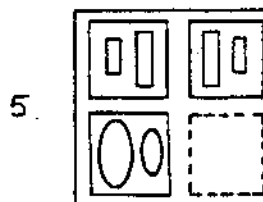
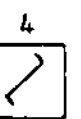
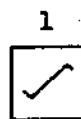
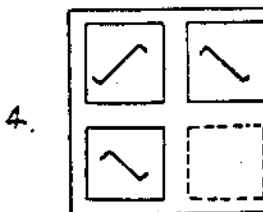
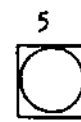
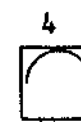
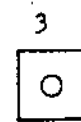
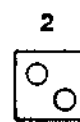
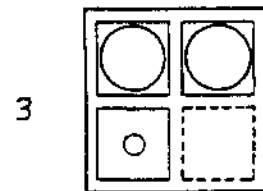
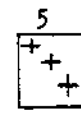
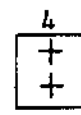
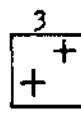
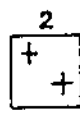
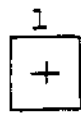
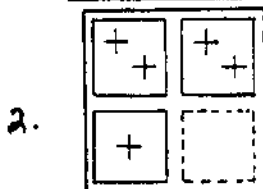
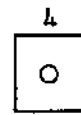
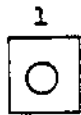
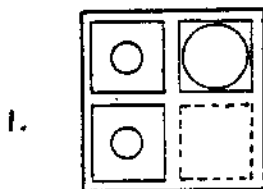
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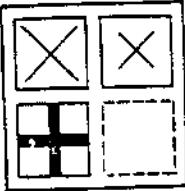






EXAMPLES

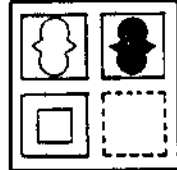







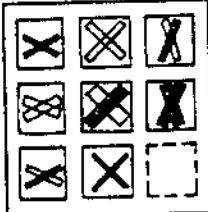





ANSWERS

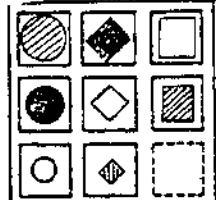






3



6.  1  2  3  4  5  

7.  1  2  3  4  5 

8.  1  2  3  4  5 

9.  1  2  3  4  5  

## BECK DEPRESSION INVENTORY

S \_\_\_\_\_  
T \_\_\_\_\_

ON THIS QUESTIONNAIRE THERE ARE GROUPS OF STATEMENTS. PLEASE READ THE ENTIRE GROUPS OF STATEMENTS IN EACH CATEGORY. THEN PICK OUT THE ONE STATEMENT IN THAT GROUP WHICH BEST DESCRIBES THE WAY YOU FEEL TODAY, THAT IS, RIGHT NOW! CIRCLE THE NUMBER BESIDE THE STATEMENT YOU HAVE CHOSEN. IF SEVERAL STATEMENTS IN THE GROUP SEEM TO APPLY EQUALLY WELL, CIRCLE EACH ONE. BE SURE TO READ ALL THE STATEMENTS IN EACH GROUP BEFORE MAKING YOUR CHOICE.

- A    0    I DO NOT FEEL SAD.  
       1    I FEEL SAD.  
       2    I AM SAD ALL THE TIME AND CAN'T SNAP OUT OF IT.  
       3    I AM SO SAD OR UNHAPPY THAT I CAN'T STAND IT.
- B    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  
           CAN'T IMPROVE.
- C    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 SEE IS A LOT OF  
           FAILURE.  
       3    I FEEL I AM A COMPLETE FAILURE AS A PERSON.
- D    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.
- E    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

S \_\_\_\_\_  
T \_\_\_\_\_

- F 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.
- G 0 I DON'T FEEL DISAPPOINTED IN MYSELF.  
1 I AM DISAPPOINTED IN MYSELF.  
2 I AM DISGUSTED WITH MYSELF.  
3 I HATE MYSELF.
- H 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 OF THE TIME FOR MY FAULTS.  
3 I BLAME MYSELF FOR EVERYTHING BAD THAT HAPPENS.
- I 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.
- J 0 I DON'T CRY ANYMORE THAN USUAL.  
1 I CRY NOW MORE 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.
- K 0 I AM NO MORE IRRITATED NOW THAN I EVER AM.  
1 I GET ANNOYED OR IRRITATED MORE EASILY THAN I USED TO.  
2 I FEEL IRRITATED ALL THE TIME NOW.  
3 I DON'T GET IRRITATED AT ALL BY THE THINGS THAT USED TO IRRITATE ME.

S \_\_\_\_\_  
T \_\_\_\_\_

- L 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.
- M 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.
- N 0 I DON'T FEEL I LOOK ANY WORSE THAN I USED TO.  
1 I AM WORRIED THAT I AM LOOKING OLD OR UNATTRACTIVE.  
2 I FEEL THAT THERE ARE PERMANENT CHANGES IN MY APPEARANCE THAT MAKE ME LOOK UNATTRACTIVE.  
3 I BELIEVE I LOOK UGLY.
- O 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.
- P 0 I CAN SLEEP AS WELL AS USUAL.  
1 I DON'T SLEEP AS WELL AS I USED TO.  
2 I WAKE UP ONE TO TWO 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.
- Q 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.

S \_\_\_\_\_  
T \_\_\_\_\_

- R 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.

- S 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 \_\_\_\_\_

- T 0 I AM NOT 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 IS  
 HARD TO THINK OF MUCH ELSE.  
 3 I AM SO WORRIED ABOUT MY PHYSICAL PROBLEMS, THAT I  
 CANNOT THINK ABOUT ANYTHING ELSE.

- U 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.

## LEVENSON LOCUS OF CONTROL

INSTRUCTIONS: PLEASE INDICATE THE EXTENT WITH WHICH YOU AGREE OR DISAGREE WITH THE STATEMENTS BELOW BY CIRCLING THE APPROPRIATE NUMBERS AT THE RIGHT OF THE STATEMENTS.

	1	2	3	4	5	6
	STRONGLY DISAGREE	DISAGREE	SOMEWHAT DISAGREE	SLIGHTLY DISAGREE	SLIGHTLY AGREE	AGREE
						STRONGLY AGREE
1. WHETHER OR NOT I GET TO BE A LEADER DEPENDS MOSTLY ON MY ABILITY.	1	2	3	4	5	6
2. TO A GREAT EXTENT MY LIFE IS CONTROLLED BY ACCIDENTAL HAPPENINGS.	1	2	3	4	5	6
3. I FEEL LIKE WHAT HAPPENS IN MY LIFE IS MOSTLY DETERMINED BY POWERFUL PEOPLE.	1	2	3	4	5	6
4. WHETHER OR NOT I GET INTO A CAR ACCIDENT DEPENDS MOSTLY ON HOW GOOD A DRIVER I AM.	1	2	3	4	5	6
5. WHEN I MAKE PLANS, I AM ALMOST CERTAIN TO MAKE THEM WORK.	1	2	3	4	5	6
6. OFTEN THERE IS NO CHANCE OF PROTECTING MY PERSONAL INTEREST FROM BAD LUCK HAPPENINGS.	1	2	3	4	5	6
7. WHEN I GET WHAT I WANT, IT'S USUALLY BECAUSE I'M LUCKY.	1	2	3	4	5	6
8. ALTHOUGH I MIGHT HAVE GOOD ABILITY, I WILL NOT BE GIVEN LEADERSHIP RESPONSIBILITY WITHOUT APPEALING TO THOSE IN POSITIONS OF POWER.	1	2	3	4	5	6
9. HOW MANY FRIENDS I HAVE DEPENDS ON HOW NICE A PERSON I AM.	1	2	3	4	5	6
10. I HAVE OFTEN FOUND THAT WHAT IS GOING TO HAPPEN WILL HAPPEN.	1	2	3	4	5	6
11. MY LIFE IS CHIEFLY CONTROLLED BY POWERFUL OTHERS.	1	2	3	4	5	6
12. WHETHER OR NOT I GET INTO A CAR ACCIDENT IS MOSTLY A MATTER OF LUCK.	1	2	3	4	5	6
13. PEOPLE LIKE MYSELF HAVE VERY LITTLE CHANCE OF PROTECTING OUR PERSONAL INTERESTS WHEN THEY CONFLICT WITH THOSE OF STRONG PRESSURE GROUPS.	1	1	2	3	5	6
14. IT'S NOT ALWAYS WISE FOR ME TO PLAN TOO FAR AHEAD BECAUSE MANY THINGS TURN OUT TO BE A MATTER OF GOOD OR BAD FORTUNE.	1	2	3	4	5	6

S  
T

INSTRUCTIONS CONTINUED - PLEASE INDICATE THE EXTENT WITH WHICH YOU AGREE OR DISAGREE WITH THE STATEMENTS BELOW BY CIRCLING THE APPROPRIATE NUMBERS AT THE RIGHT OF THE STATEMENTS.

- |   | STRONGLY<br>DISAGREE | DISAGREE<br>SOMEWHAT | SLIGHTLY<br>DISAGREE | SLIGHTLY<br>AGREE | AGREE<br>SOMEWHAT | STRONGLY<br>AGREE |
|---|----------------------|----------------------|----------------------|-------------------|-------------------|-------------------|
|   | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 15. GETTING WHAT I WANT REQUIRES PLEASING THOSE PEOPLE ABOVE ME.  | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 16. WHETHER OR NOT I GET TO BE A LEADER DEPENDS ON WHETHER I'M LUCKY ENOUGH TO BE IN THE RIGHT PLACE AT THE RIGHT TIME. | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 17. IF IMPORTANT PEOPLE WERE TO DECIDE THEY DID NOT LIKE ME, I PROBABLY WOULDN'T MAKE MANY FRIENDS.                     | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 18. I CAN PRETTY MUCH DETERMINE WHAT WILL HAPPEN IN MY LIFE.  | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 19. I AM USUALLY ABLE TO PROTECT MY PERSONAL INTERESTS.   | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 20. WHETHER OR NOT I GET INTO A CAR ACCIDENT DEPENDS MOSTLY ON THE OTHER DRIVER.  | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 21. WHEN I GET WHAT I WANT, IT 'S USUALLY BECAUSE I WORKED HARD FOR IT.   | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 22. IN ORDER TO HAVE MY PLANS WORK, I MAKE SURE THAT THEY FIT IN WITH THE DESIRES OF PEOPLE WHO HAVE POWER OVER ME.     | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 23. MY LIFE IS DETERMINED BY MY OWN ACTIONS.  | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |
| 24. IT'S CHIEFLY A MATTER OF FATE WHETHER OR NOT I HAVE A FEW FRIENDS OR MANY FRIENDS.                                  | 1                    | 2                    | 3                    | 4                 | 5                 | 6                 |



S \_\_\_\_\_

T \_\_\_\_\_

PAIRED ASSOCIATES

I AM GOING TO READ YOU A LIST OF TEN PAIRS OF WORDS .... AFTER I FINISH READING THE LIST, I WILL ASK YOU WHAT WORDS GO TOGETHER. FOR EXAMPLE, IF THE WORDS I READ ARE SALTY-SWEET, JOY-HAPPY, WHEN I SAY SALTY, YOU WOULD SAY (SWEET). WHEN I SAY JOY, YOU WOULD SAY (HAPPY).

LIST ONE

STIMULUS	RESPONSE	<u>READ IN RANDOM ORDER</u>	PROVIDE ANSWER IF WRONG	( )
OCEAN	WATER	OCEAN	_____	
DREAM	SLEEP	DREAM	_____	
EAGLE	BIRD	EAGLE	_____	
HAND	FOOT	HAND	_____	
BLUE	SKY	BLUE	_____	
WOMAN	MAN	WOMAN	_____	
DARK	LIGHT	DARK	_____	
STOMACH	FOOD	STOMACH	_____	
DOG	CAT	DOG	_____	
BOW	ARROW	BOW	_____	

S \_\_\_\_\_  
T \_\_\_\_\_

## PAIRED ASSOCIATES - CONTINUED

LIST TWO

STIMULUS	RESPONSE	READ IN RANDOM ORDER PROVIDE ANSWER IF WRONG ( )
TABLE	MUSIC	TABLE _____
BOOK	HAIR	BOOK _____
KING	STEM	KING _____
MOON	THIEF	MOON _____
CIRCLE	BABY	CIRCLE _____
RIVER	STOVE	RIVER _____
SHEEP	HAMMER	SHEEP _____
BREAD	CARPET	BREAD _____
CIGAR	DOOR	CIGAR _____
ICEBOX	NURSERY	ICEBOX _____

S \_\_\_\_\_

T \_\_\_\_\_

LONG TERM MEMORY

1. WHAT WAS THE NAME OF THE FIRST MAN TO SET FOOT ON THE MOON? (NEIL ARMSTRONG)
2. WHAT WAS THE NAME OF THE MAN WHO ASSASSINATED DR. MARTIN LUTHER KING? (JAMES EARL RAY)
3. WHAT WAS THE NAME OF THE MAN WHO WAS ELECTED VICE-PRESIDENT IN 1948 WHEN HARRY TRUMAN WAS ELECTED PRESIDENT? (ALVIN BARKLEY)
4. WHAT WAS THE NAME OF THE WORLD WAR II GERMAN GENERAL NICKNAMED "THE DESERT FOX"? (ERWIN ROMMEL)
5. WHAT WAS THE NAME OF THE SHIP WHICH HIT AN ICEBERG AND SANK ON ITS MAIDEN VOYAGE IN 1912? (TITANIC)
6. WHAT WAS THE NAME OF THE MAN WHOSE DEATH SET OFF WORLD WAR I? (ARCHDUKE FERDINAND)
7. WHAT WAS THE NAME OF THE MAN WHO DISCOVERED THE NORTH POLE? (ROBERT E. PEARY)
8. IN WHAT STATE DID THE FIRST LEGAL ELECTROCUTION FOR MURDER IN THE UNITED STATES OCCUR? (NEW YORK)

INVENTIVE REMOTE ASSOCIATIONS

THIS TEST REQUIRES YOU TO FIND A WORD THAT IS ASSOCIATED WITH THREE KEY WORDS. AN EXAMPLE OF THIS PROCEDURE IS AS FOLLOWS:

PLAIN                      TARZAN                      DICK

THE WORD THAT YOU COULD GIVE AS AN ANSWER IS:

JANE

BECAUSE:

JANE IS ASSOCIATED WITH PLAIN AS IN PLAIN JANE

JANE IS ASSOCIATED WITH TARZAN AS HIS GIRL FRIEND.

JANE IS ASSOCIATED WITH DICK AS IN DICK AND JANE ELEMENTARY READING BOOKS.

WRITE YOUR ANSWER (ON THE LINE NEXT TO THE THREE WORDS), A WORD THAT IS ASSOCIATED WITH ALL THREE GIVEN WORDS.

REMEMBER, ALSO, THAT THERE MAY BE NO GOOD ANSWER FOR SOME OF THE ITEMS, AS IN THE EXAMPLE:

MIDSUMMER                      SING                      RAISIN                      \_\_\_\_\_?

IN THIS CASE, SIMPLY WRITE THE WORD NONE, AS HERE:

MIDSUMMER                      SING                      RAISIN                      None?

AND GO ON TO THE NEXT EXAMPLE.

NOW TURN TO THE NEXT PAGE AND TRY THE ITEMS IN THE ORDER IN WHICH THEY APPEAR, FROM TOP TO BOTTOM OF THE PAGE. IF YOU DO NOT SEE AN ANSWER AFTER A WHILE, WRITE THE WORD "NONE" AND GO ON TO THE NEXT ITEM.

WRITE A WORD THAT IS ASSOCIATED WITH ALL THREE GIVEN WORDS:

- |           |         |         |        |
|-----------|---------|---------|--------|
| 1. ZOO    | CRACKER | FARM    | _____? |
| 2. BELLS  | WEDDING | BOXING  | _____? |
| 3. MILK   | CUP     | FINGERS | _____? |
| 4. NEWS   | PLATE   | WALL    | _____? |
| 5. FOREST | ENGINE  | SHOT    | _____? |
| 6. SIDE   | COLD    | LEFT    | _____? |
| 7. STIFF  | BOTTLE  | ROUGH   | _____? |
| 8. SOUL   | BUSY    | GUARD   | _____? |

## ATTRIBUTION SURVEY

S \_\_\_\_\_

T \_\_\_\_\_

AS A RULE, TO WHAT DO YOU ATTRIBUTE YOUR PERFORMANCE ON THE  
BATTERY OF PROBLEM SOLVING/MEMORY TASKS YOU HAVE JUST FINISHED?

I THINK MY PERFORMANCE IS DETERMINED BY:

1. LUCK  

NOT AT ALL (NO LUCK)	NOT MUCH LUCK	UNDECIDED	SOMEWHAT LUCKY	ALWAYS (ALL LUCK)
-------------------------	------------------	-----------	-------------------	----------------------

---
  
2. MY ABILITY  

NOT AT ALL	NOT MUCH	UNDECIDED	SOMEWHAT	ALWAYS
------------	----------	-----------	----------	--------

---
  
3. MY EFFORT  

NOT AT ALL	NOT MUCH	UNDECIDED	SOMEWHAT	ALWAYS
------------	----------	-----------	----------	--------

---
  
4. DIFFICULTY OF TASKS  

NOT AT ALL	NOT MUCH	UNDECIDED	SOMEWHAT	ALWAYS
------------	----------	-----------	----------	--------

---

S \_\_\_\_\_

T \_\_\_\_\_

AS A RULE, TO WHAT DO YOU ATTRIBUTE YOUR COPING WITH  
STRESSFUL OR DEMANDING SITUATIONS IN GENERAL?

I THINK MY PERFORMANCE IS DETERMINED BY:

- |       |                         |                  |                            |                   |                      |
|-------|-------------------------|------------------|----------------------------|-------------------|----------------------|
| 1.    |                         |                  | <u>LUCK</u>                |                   |                      |
|       | NOT AT ALL<br>(NO LUCK) | NOT MUCH<br>LUCK | UNDECIDED                  | SOMEWHAT<br>LUCKY | ALWAYS<br>(ALL LUCK) |
| <hr/> |                         |                  |                            |                   |                      |
| 2.    |                         |                  | <u>MY ABILITY</u>          |                   |                      |
|       | NOT AT ALL              | NOT MUCH         | UNDECIDED                  | SOMEWHAT          | ALWAYS               |
| <hr/> |                         |                  |                            |                   |                      |
| 3.    |                         |                  | <u>MY EFFORT</u>           |                   |                      |
|       | NOT AT ALL              | NOT MUCH         | UNDECIDED                  | SOMEWHAT          | ALWAYS               |
| <hr/> |                         |                  |                            |                   |                      |
| 4.    |                         |                  | <u>DIFFICULTY OF TASKS</u> |                   |                      |
|       | NOT AT ALL              | NOT MUCH         | UNDECIDED                  | SOMEWHAT          | ALWAYS               |
| <hr/> |                         |                  |                            |                   |                      |

<u>Factors of Learned Helplessness</u>	<u>Somatic</u>	<u>Motivational</u>	<u>Affective</u>	<u>Cognitive</u>
<u>Instruments</u>				
Self-Report Health	+		+	
Education Self-Report		+		+
<u>BDI Items</u>				
P, Q, R, S, T	+			
C, G, H, M, O		-		
A, B, D, E, F, G, H, I, J, K, L, M, N, O, U			+	
C, M				-
<u>Levenson Locus of Control States</u>				
Powerful Others		-	+	-
Chance		-	+	-
Internal		+	-	+
<u>Attribution Survey</u>				
Stable (ability and task difficulty)		-	-	-
Unstable (luck and effort)		+	-	+
Common Analogies		+	-	+
Letter Sets		+	-	+



<u>Factors of Learned Helplessness</u>	<u>Somatic</u>	<u>Motivational</u>	<u>Affective</u>	<u>Cognitive</u>
Cattell Matrices		+	-	+
Multiple Choice Vocabulary				+
Abstruse Analogies				+
Remote Associations				+
Anagram Test				+
<u>Poisoned Foods Task</u>				
Number of Errors			+	-
Number of Trials to Criterion		-	+	-
Backward Digit Span		+	-	+
Forward Digit Span		+	-	+
Backward Spatial Memory		+	-	+
Forward Spatial Memory		+	-	+
Tertiary Memory				+
Paired Associates		+	-	+
Somatic Factor	+	-	+	
Motivational Factor	-	+	-	+
Affective Factor	+	-	+	-
Cognitive Factor	-	+	-	+

APPENDIX C

Tables

Table 2  
Correlation Matrices for Indices of Intellectual Ability, Depression, Locus of Control, and Attribution

Variables	Health	Education	Income	Depress/A	Pessimism/B	Failure/C	Satisfy/D	Guilt/E	Punish/F	Self Hate/G	Self Accuse/H	Self Punitive/I
Health	1.00											
Education	.29	1.00										
Income	.15	.21	1.00									
Depress/A	-.19	-.01	-.05	1.00								
Pessimism/B	-.11	-.03	-.01	.29	1.00							
Failure/C	-.06	-.06	.06	.28	.20	1.00						
Satisfy/D	-.15	-.02	.00	.23	.13	.21	1.00					
Guilt/E	-.04	.00	.05	.12	.27	.21	.14	1.00				
Punish/F	-.14	-.07	.01	.09	.20	.10	.16	.41	1.00			
Self Hate/G	-.02	.03	.05	.09	.09	.22	.28	.45	.24	1.00		
Self Accuse/H	-.10	.09	.01	.12	.09	.17	.23	.29	.15	.33	1.00	
Self Punitive/I	-.14	.04	.00	.15	.15	.05	.10	.24	.31	.08	.05	1.00
Crying/J	-.05	.02	.01	.32	.19	.06	.24	.03	.19	.07	.08	.08
Irritable/K	-.05	-.11	-.02	.08	.10	.13	.23	.08	.06	.07	.11	.06
Social/L	.01	.11	-.02	.04	-.00	.02	.24	.11	.15	.12	.07	.11
Indecisive/M	-.07	-.04	.07	.05	.13	.01	.22	.17	.16	.13	.05	.10
Body/N	-.05	.05	.04	-.06	-.06	.09	.17	-.00	.01	.09	.12	.01
Internal	.12	.10	.07	-.02	-.15	-.10	-.05	-.11	-.03	-.08	.00	-.12
Powerful Others	-.16	-.12	-.03	.15	.14	.10	.13	.15	.15	.12	.14	.13
Chance	-.18	-.13	-.09	.25	.14	.07	.10	.12	.14	.11	.06	.13
State/Luck	-.07	-.16	-.09	-.03	.07	-.03	.04	-.00	.05	-.02	-.05	.05
State/Ability	-.04	.22	.05	-.05	-.03	-.02	.07	-.02	-.00	-.07	.00	-.00
State/Effort	-.04	.10	.11	-.04	-.04	-.01	.07	-.20	-.24	-.03	-.00	-.11
State/Diffculty	.01	.17	-.01	.01	-.07	-.01	.07	.00	-.07	.01	.04	.09

Variables	Health	Education	Income	Depress/A	Pessimism/B	Failure/C	Satisfy/D	Guilt/E	Punish/F	Self Hate/G	Self Accuse/H	Self-Punitive/I
Trait/Luck	-.08	-.07	-.04	.00	.04	.00	.06	-.07	-.00	.06	-.03	-.01
Trait/Ability	.12	.21	.10	-.08	-.12	.06	.00	-.09	-.08	-.07	-.05	-.05
Trait/Effort	-.00	.01	-.02	.04	-.01	.03	-.02	-.12	-.13	-.15	-.10	-.05
Trait/Difficulty	.03	.20	.04	.02	-.05	.09	.02	-.03	-.10	.01	.00	.04
Vocabulary	.21	.36	.21	.02	-.08	-.01	.00	.03	-.23	.10	.07	.06
Common Analogy	.12	.45	.20	-.03	-.04	.01	-.03	.00	-.07	-.03	.01	.06
Abstruse Analogy	.21	.48	.21	-.01	-.12	.01	-.05	-.01	-.16	.04	.05	.02
Letter Series	.20	.44	.17	-.02	-.08	.05	-.05	.06	.06	-.00	-.01	.02
Letter Sets	.19	.27	.21	-.04	-.03	.01	-.06	.10	.01	.03	.03	-.03
Cattell Matrices	.11	.32	.21	.02	-.12	-.00	-.03	.06	-.06	.00	.01	.07
Horn Matrices	.18	.37	.23	-.05	-.05	.08	-.08	.05	-.08	-.02	-.00	.04
Remote Association	.04	.16	.09	-.06	-.06	.07	.03	.05	-.00	.11	.07	-.06
Low Work/O	-.13	.04	.08	.06	.02	.04	.20	.08	.07	.12	.15	.01
Sleep/P	-.08	.05	.00	.07	.26	.02	.15	.18	.15	.13	.09	.05
Fatigue/Q	-.02	.01	-.00	-.01	-.09	.00	.15	.02	-.00	.12	.04	-.04
Loss of Appetite/R	-.02	.03	-.01	.03	.05	.06	.10	.03	.01	-.05	.00	.02
Weight loss/S	.04	-.13	-.14	-.08	.00	-.07	-.09	.01	.02	-.09	.01	.00
Somatic/T	-.24	-.12	-.03	.06	.02	.08	.21	.03	.01	.14	.04	.01
Libido/U	-.08	-.16	-.02	.12	-.02	.01	.17	.02	-.02	.05	-.05	.00

variables	Crying/J	Irritable/K	Social/L	Indecisive/M	Body/N	Internal	Power	Chance	State/Luck	State/Ability	State/Effort	State/Difficulty
Crying/J	1.00											
Irritable/K	.17	1.00										
Social/L	.04	.05	1.00									
Indecisive/M	.12	-.01	.14	1.00								
Body/N	.01	.03	.24	.06	1.00							
Internal	-.10	-.01	-.03	-.18	-.03	1.00						
Powerful Others	.11	.01	.04	.09	.04	.11	1.00					
Chance	.12	-.00	.03	.09	-.00	.04	.60	1.00				
State/Luck	.00	-.01	-.01	.17	.06	.09	.16	.27	1.00			
State/Ability	.07	.03	.06	-.01	-.03	.08	-.09	-.11	-.27	1.00		
State/Effort	.04	.00	.03	-.06	-.09	-.04	-.06	-.04	-.16	.35	1.00	
State/Difficulty	.06	-.05	-.08	-.04	-.04	.04	-.13	-.13	-.20	.22	.35	1.00
Trait/Luck	.05	-.01	-.05	.16	.04	-.08	.20	.27	.54	-.21	-.08	-.17
Trait/Ability	-.07	.01	.06	-.09	.03	.16	-.17	-.18	-.17	.32	.25	.15
Trait/Effort	-.01	-.05	.00	-.07	-.03	.06	-.15	-.07	-.14	.14	.46	.31
Trait/Difficulty	.02	-.05	.07	-.01	.04	.07	.04	-.00	-.16	.21	.24	.42
Vocabulary	-.04	-.19	.10	.01	-.00	.01	-.19	-.15	-.26	.18	.09	.23
Common Analogy	-.10	-.16	.00	-.08	.10	.12	-.11	-.15	-.18	.19	.03	.13
Abstruse Analogy	-.14	-.13	.06	-.03	.11	.13	-.22	-.18	-.23	.16	.07	.20
Letter Series	-.04	-.10	.10	-.11	.08	.13	-.16	-.23	-.26	.14	.06	.17
Letter Sets	-.06	-.14	.03	-.05	.03	.12	-.10	-.14	-.27	.18	.07	.14
Cattell Matrices	-.05	-.05	.09	-.04	.07	.23	-.08	-.17	-.20	.11	.06	.17
Horn Matrices	-.05	-.09	.09	-.18	.07	.13	-.15	-.19	-.19	.18	.09	.16
Remote Association	-.01	-.14	.09	.03	.06	.04	-.09	-.12	-.17	.13	.08	.13
Low Work/O	.07	.09	.04	.17	-.04	-.00	.09	.09	-.02	-.02	.02	.06
Sleep/P	.15	.03	.10	.21	.03	-.10	.12	-.00	.03	.01	-.03	-.01
Fatigue/Q	-.10	.02	.01	.05	.02	.08	-.08	-.11	-.04	-.05	.03	.05
Loss of Appetite/R	.18	.05	.01	.10	.00	-.10	.04	.05	.13	-.01	-.05	.07
Weight Loss/S	-.07	.05	.00	-.00	.02	.09	.13	.08	.09	-.03	-.17	.14
Somatic/T	.01	-.00	.07	.19	.09	-.07	.09	.06	.06	-.03	.05	.03
Libido/U	.04	.04	.02	.09	.12	-.12	.00	.04	.06	-.08	.01	-.07

Variables	Trait/Luck	Trait/Ability	Trait/Effort	Trait/Difficulty	Vocabulary	Common Analogy	Abstruse Analogy	Letter Series	Letter Sets	Cattell Matrices	Horn Matrices
Trait/Luck	1.00										
Trait/Ability	-.28	1.00									
Trait/Effort	-.16	.45	1.00								
Trait/Difficulty	.06	.26	.40	1.00							
Vocabulary	-.21	.18	.10	.19	1.00						
Common Analogy	-.19	.21	.08	.20	.42	1.00					
Abstruse Analogy	-.17	.22	.10	.22	.64	.56	1.00				
Letter Series	-.28	.22	.12	.21	.44	.53	.44	1.00			
Letter Sets	-.13	.12	.08	.16	.28	.36	.31	.46	1.00		
Cattell Matrices	-.27	.23	.13	.10	.41	.49	.44	.57	.36	1.00	
Horn Matrices	-.16	.20	.09	.12	.42	.53	.43	.66	.43	.56	1.00
Remote Association	-.07	.09	-.01	.12	.31	.37	.28	.37	.33	.30	.33
Low Work/O	.02	-.04	-.06	-.00	-.02	-.04	.05	-.06	.01	.02	-.07
Sleep/P	.02	-.04	-.12	.03	-.00	.01	-.04	-.04	-.02	-.03	-.05
Fatigue/Q	-.11	.14	.04	.03	.04	-.02	.06	.12	.09	.11	-.02
Loss of Appetite/R	.07	-.01	.05	.07	-.00	-.05	-.05	-.09	-.16	-.13	-.11
Weight Loss/S	-.06	-.03	.02	-.00	-.09	.04	-.06	-.08	-.05	-.05	-.02
Somatic/T	.05	.01	.03	.01	.02	-.04	-.02	-.06	-.07	.02	-.05
Libido/U	.09	-.06	.13	.03	-.11	-.18	-.18	-.08	-.12	-.14	-.13

Variables	Remote Association	Low Work/O	Sleep/P	Fatigue/Q	Loss of Appetite/R	Weight Loss/S	Somatic/T	Libido/U
Remote Assoc.	1.00							
Low Work/O	.12	1.00						
Sleep/P	.02	.15	1.00					
Fatigue/Q	.04	.25	.08	1.00				
Loss of Appetite/R	-.09	.07	.06	.04	1.00			
Weight Loss/S	-.10	-.03	-.02	-.00	.12	1.00		
Somatic/T	.05	.07	.13	.11	.06	.07	1.00	
Libido/U	.00	.12	.06	.03	.10	-.03	-.01	1.00





Table 3--Continued

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12	Factor 13	Factor 14
Indecisive/M							.49							
Low Esteem/N								.49						
Low Work/O							.20					.47		
Sleep/P							.43							
Tired/Q							.22					.52		
Appetite/R														
Weight Loss/S													.39	
Somatic/T										.36				
Sex Interest/U														.33
Internal				.20			-.31					.24		
Powerful Others				.77										
Chance				.68										
State/Luck	-.23				.53									
State/Ability		.36			-.22									
State/Effort		.60							-.24				-.25	
State/Difficulty		.52											-.26	
Trait/Luck					.89									
Trait/Ability		.46											.25	
Trait/Effort		.78											.20	-.26
Trait/Difficulty		.55												

Table 3--Continued

Variance	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12	Factor 13	Factor 14
Common Analogy	.64													
Abstruse Analogy	.56							.53						
Letter Series	.77													
Letter Sets 1	.56													
Cattell Matrices	.67													
Horn Matrices	.75													
Remote Association	.48													

Note. Factors are: 1 = Ability; 2 = Self/Situation Attribution; 3 = Pessimism; 4 = Locus of Control; 5 = Luck Attribution; 6 = Sad Affect; 7 = Hope to Stress; 8 = Competence; 9 = Self Destruction; 10 = Health; 11 = Social Interest; 12 = Initiative; 13 = Trait Attribution; 14 = Motivation.

Table 4

## Factor Loadings for Items of the Beck Depression Inventory in the Aged

	Factor 1 Negative Self Eval	Factor 2 Low Energy	Factor 3 Pessimism	Factor 4 Non- Depression I	Factor 5 Low Social Interest	Factor 6 Sad Affect	Factor 7 Lability	Factor 8 Non- Depression II
	(1.47)	(7.4)	(6.6)	(5.9)	(5.7)	(5.2)	(5.1)	(4.9)
Common Variance	.309	1.67	13.9	1.24	1.19	1.10	1.10	1.03
Eigenvalues	.27	.25	.14	.29	.34	.28	.36	.21
Communalities			.65					
Depressed/A			.20	-.43		.28		
Pessimism/B						.36		
Failure/C								
Satisfaction/D		.33	.28		.29			
Guilt/E	.45		.26			.34		-.30
Punish/F	.30		.23			-.23		-.50
Self Hate/G	.70							
Self-Accuse/H	.47							
Self-Punitive/I								-.51
Cry/J			.22				.70	
Irritable/K							.27	
Social/L					.40			
Indecisive/M				-.24				
Body Image/N					.48			
Work Inhibition/O		.54						
Sleep/P				-.56				
Fatigue/Q		.39						
Appetite/R								
Weight Loss/S							.20	
Somatic/T								
Libido/U		.22						





Table 6

Correlation Matrix of Eleven Factors in an Analyses of Measures of Depression, Intellectual Ability, Attribution, and Locus of Control

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11
Factor 1	1.00										
Factor 2	.08	1.00									
Factor 3	.16	-.08	1.00								
Factor 4	-.05	.04	-.01	1.00							
Factor 5	-.33	.08	.18	.08	1.00						
Factor 6	.02	.21	.02	.02	.03	1.00					
Factor 7	-.47	-.02	-.15	.04	.12	-.00	1.00				
Factor 8	.10	-.23	-.05	-.10	-.13	-.10	-.10	1.00			
Factor 9	.22	-.09	.21	-.05	-.21	-.06	-.10	.12	1.00		
Factor 10	-.03	.20	-.14	.05	.11	.09	.02	-.25	-.15	1.00	
Factor 11	.03	.15	.17	-.03	.05	.14	-.04	-.15	-.07	.13	1.00

## REFERENCES

- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology, 87, 49-74.
- Alloy, L. B. & Abramson, L. Y. (1979). Judgment of contingency in depressed and nondepressed students: Sadder but wiser? Journal of Experimental Psychology: General, 108(4), 441-485.
- Beck, A., Rush, A., Shaw, B., & Emery, G. (1979). Cognitive therapy of depression. New York: Guilford Press.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J. R., & Erbaugen, J. (1965). An inventory for measuring depression. Archives of General Psychiatry, 4, 561-571.
- Benson, J., & Kennelly, K. (1976). Learned helplessness: The results of uncontrollable reinforcement or uncontrollable aversive stimuli? Journal of Personality and Social Psychology, 31(4), 138-145.
- Berndt, S. M., Berndt, D. J., & Byers, W. D. (1983). A multi-institutional study of depression in family practice. Journal of Family Practice, 16(1), 83-87.

- Blazer, D. (1982). The epidemiology of late life depression. American Geriatric Society Journal 30 (9), 587-592.
- Bliezner, R., Willis, S. L., & Baltes, P. B. (1981). Training research in aging on the fluid ability of inductive reasoning. Journal of Applied Developmental Psychology, 2, 247-265.
- Botwinick, J. (1973). Aging and behavior: A comprehensive integration of research findings. New York: Springer Publishing Co.
- Botwinick, J. (1970). Geropsychology. Annual Review of Psychology, 21, 239-253.
- Botwinick, J., & Storandt, M. (1974). Memory related functions and age. Springfield, MO: C. C. Thomas.
- Botwinick, J., & Storandt, M. (1980). Recall and recognition of old information in relation to age and sex. Journal of Gerontology, 35, 70-76.
- Carstensen, L. L., & Cone, J. D. (1983). Social desirability and the measurement of psychological well-being in elderly persons. Journal of Gerontology, 38(6), 713-715.



- Caster, C., & Parsons, O. A. (1977). Relationship of depression, sociopathy, and locus of control to treatment outcome in alcoholics. Journal of Consulting and Clinical Psychology, 45, 751-756.
- Cattell, R. B. (1966). The Scree test for the number of factors. Multivariate Behavioral Research, 1(2), 245-276.
- Craik, F. I. M. (1977). Age differences in human memory. In J. E. Birren and K. W. Schaie (Eds.), Handbook of psychology of aging (pp. 384-420). New York: Van Nostrand Reinhold.
- Dessonville, C., Gallagher, D., Thompson, L. W., Finnell, K., & Lewinsohn, P. M. (1982). Relation of age and health status of depressive symptoms in normal and depressed older adults. Essence, 5(2), 99-115.
- Dye, C. J., Bohm, K., Anderten, P., & Cho, D. W. (1983). Age group differences in depression on the MMPI D Scale. Journal of Clinical Psychology, 39(21), 227-234.
- Faravelli, C. (1982). Validation of a new rating scale for the assessment of depressive symptoms. Rivisti di Psichiatria, 17(1), 101-120.

- Fisher-Beckfield, D., & McCall, R. M. (1982). Development of a competence inventory for college men and evaluation of relationships between competence and depression. Journal of Consulting and Clinical Psychology, 50(5), 697-705.
- Foelker, G. A., Shewchuk, R. M., & Niederehe, G. (1986, November). Confirmatory factor analysis of the short form Beck Depression Inventory on elderly community samples. Paper presented at the Annual Scientific Meeting of the Gerontological Society, New Orleans, La.
- Gallagher, D., Breckenridge, J., Steinmetz, J., & Thompson, L. (1983, October). The Beck Depression Inventory and research diagnostic criteria: Congruence in an older population. Journal of Consulting and Clinical Psychology, 51(9), 933-939.
- Gallagher, D., & Thompson, L. W. (1983). Assessment and treatment of depression in the elderly: A review. In P. M. Lewinsohn & L. Teri (Eds.), Coping and adaptation in the elderly (pp. 111-123). New York: Pergamon Press.
- Giellis, A. (1982). Learned helplessness as a model for depression: A literature review. Gedragstherapie, 15(1), 3-31.

- Gould, J. (1982). A psychometric investigation of the standard and short form of the Beck Depression Inventory. Psychological Reports, 5(3, pt. 2), 1167-1170.
- Gurland, B. J., Dean, L. L., & Cross, P. S. (1983). The effects of depression on individual social functioning. In L. D. Breslau & M. R. Hugh (Eds.), Depression and aging: Causes, care, and consequences (pp. 72-86). New York: Springer Publishing Co.
- Hamrick, N. D. (1976). Learned helplessness and internal-external locus of control in the elderly. Unpublished doctoral dissertation, North Texas State University.
- Hasher, L., & Zacks, R. T. (1979). Automatic and effortful processes in memory. Journal of Experimental Psychology: General, 108(3), 356-388.
- Hayslip, B., & Kennelly, K. J. (1982). Short-term memory and crystallized-fluid intelligence in adulthood. Research on Aging, 4(3), 314-332.
- Hayslip, B., & Sterns, H. L. (1979). Age differences in relationships between crystallized and fluid intelligences and problem-solving. Journal of Gerontology, 34(3), 404-414.
- Hiroto, D. S. (1974). Locus of control and learned helplessness. Journal of Experimental Psychology, 102(2), 187-193.

- Horn, J. L. & Cattell, R. B. (1967). Age differences in fluid and crystallized intelligence. Acta Psychologica, 26, 107-129.
- Kammer, D. (1983). A study of the psychometric properties of the German Beck Depression Inventory (BDI). Diagnostica, 29(1), 48-60.
- Kennelly, K. J., Crawford, D., Waid, L. W., & Rahaim, S. (1980). Partial reinforcement immunizes against helplessness induced short-term memory deficits. Catalogue of Selected Documents in Psychology, 10(59) (Manuscript No. 2091).
- Kennelly, K. J., Hayslip, B., & Richardson, S. K. (1985). Depression and helplessness-induced cognitive deficits in the aged. Experimental Aging Research, 11(3-4), 169-173.
- Kearns, N. P., Cruikshank, C. A., McGuigan, K. J., Riley, S. A., Shaw, S. P., & Snaith, R. P. (1982). A comparison of depression rating scales. British Journal of Psychiatry, 141, 45-49.
- Levenson, H. & Miller, (1976). Multidimensional locus of control in psychiatric patients. Journal of Consulting and Clinical Psychology, 41(3), 397-404.

- Levy, S., Derogatis, L., Gallagher, D., & Gatz, M. (1980). Intervention with older adults and the evaluation outcome. In L. Poon (Ed.), Aging in the 80's: Psychological issues (pp. 86-97). Washington, D.C.: American Psychological Association.
- Milner, B. (1971). Interhemispheric differences in the localization of psychological processes in man. British Medical Bulletin, 27, 272-277.
- Molinari, V. (1979). Locus of control. Unpublished doctoral dissertation, Ohio State University.
- Okun, M. A., & Siegler, I. C. (1977). The perception of outcome-effort covariation in younger and older men. Educational Gerontology: An International Quarterly, 2, 27-32.
- Plemons, J. K., Willis, S. L., & Baltes, P. B. (1978). Modifiability of fluid intelligence in aging: A short term longitudinal training approach. Journal of Gerontology, 33(2), 99-102.
- Plude, D. J., Hoyer, W. J., & Lazar, J. (1982). Age, response complexity, and target consistency in visual search. Experimental Aging Research, 8 (2), 99-102.
- Rahaim, S. (1980). Learned helplessness and attentional focus. Unpublished doctoral dissertation, North Texas State University.

- Salzman, D., & Shader, R. (1979). Clinical evaluation of depression in the elderly. In A. Raskin & L. Jurvik (Eds.), Psychiatric symptoms and cognitive loss in the elderly (pp. 192-214). Washington, DC: Hemisphere.
- Schonfield, D., & Robertson, B. A. (1966). Memory storage and aging. Canadian Journal of Psychology, 20, 220-236.
- Seligman, M. E. P. (1975). Helplessness. San Francisco: W. H. Freeman.
- Thurstone, T. G. (1962). Primary mental abilities. Grades 9-12. Chicago, IL: Science Research Association.
- United States Census Data. (1984). A profile of Older Americans, 1985. (Pamphlet). Washington, D.C.: American Association for Retired Persons.
- Wechsler, D. (1955). Manual for the Wechsler Adult Intelligence Scale. New York: Psychological Corporation.
- Weckowicz, T., Muir, W., & Cropley, A. (1967). A factor analysis of the Beck inventory of depression. Journal of Consulting Psychology, 31, 23-28.
- Weiner, B., Heckhausen, H., Meyer, W., & Cook, R. (1972). Causal ascription and achievement motivation: A conceptual analysis of effort and a reanalysis of locus of control. Journal of Personality and Social Psychology, 21, 239-248.

- Weinstein, W. A., & Khanna, P. (1986). Depression in the elderly. New York: Philosophical Library, Inc.
- Wells, C. E. (1979). Pseudodementia. American Journal of Psychiatry, 136, 895-900.
- Zung, W. W. K. & Wonnacott, T. H. (1970). Treatment prediction of depression using a self rating scale. Biological Psychiatry, 2(4), 321-329.