1979

Cautiousness as a factor in the test taking skills of adult students

Joanne Boyer Engel
Iowa State University

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CAUTIOUSNESS AS A FACTOR IN THE TEST TAKING
SKILLS OF ADULT STUDENTS.

IOWA STATE UNIVERSITY, PH.D., 1979
Cautiousness as a factor in the test taking skills of adult students

by

Joanne Boyer Engel

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of

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For the Graduate College

Iowa State University
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1979
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Patterns of cautiousness, as measured by proportion of errors of omission to total errors on a prose learning task, were examined in three age groups of adults with three levels of educational experience. Rated confidence levels relative to each individual response made by the participants were also examined. The sample consisted of 90 adults representing an age span from seventeen to fifty-five years of age and a range of post-secondary quarter hour academic credits from none to forty-five. Three equivalent groups were selected based on age and academic experience.

Three paper-and-pencil instruments were given. The first was a prose learning task and the second the written form of the Wide Range Vocabulary Test. After each question in the prose learning task, respondents marked their level of confidence by placing an "X" on a confidence estimation line. Two separate analyses were completed. The first design was a 3 (Group) x 6 (Order) x 2 (Answer) x 3 (Instructions) balanced split-plot analysis of variance. A second split-plot 3 (Group) x 2 (Sex) x 2 (Answer) x 3 (Instructions) unweighted means analysis was also completed. The six dependent variables included: 1) proportion of errors of omission to total errors on the vocabulary task; 2) age; 3) total academic credits obtained by participants; 4) proportion of errors of omission to total errors in the prose learning task; 5) confidence level for all questions attempted; 6) confidence level for all questions including those omitted with a 0.00 confidence level assigned to those which were omitted by the respondent. A significance
level of $p < .05$ was used as a minimum acceptable value for significance throughout the study. The Balanova 5 procedure outlined in the SOUPAC program developed at the University of Illinois was used to compute the ANOVAs.

It was concluded that this sample of adults did not appear to be disadvantaged when presented with a learning task which required reading and assimilation of content. However, there were indications that prior knowledge had the possibility of making the learner more cautious if there was a similarity between past and present knowledge pools. Second, at this point, there is no reason to assume cautiousness increases as one progresses through life. Levels of cautiousness are highly dependent upon the constraints established by the task thus making generalized statements about cautiousness and adults tenuous. Finally, middle-aged adults, whether they have continued their education or not, are as confident in approaching a difficult multiple choice prose learning task as are the younger, scholastically experienced adults.

The definition of "adulthood" varies according to the source consulted. ERIKSON (1963) BREAKS ADULTHOOD DOWN INTO THREE AGE PERIODS: EARLY ADULTHOOD (20-40 YEARS); MIDDLE ADULTHOOD (40-50 YEARS); AND, LATER ADULTHOOD (65+). CHARLOTTE BUHLER, WHILE COLLECTING LIFE HISTORIES FROM A NUMBER OF ELDERLY PEOPLE, DIVIDED THE ADULT LIFE SPAN IN THE FOLLOWING MANNER: ADULT I (25 TO 45-50 YEARS); ADULT II
(45-50 to 65-70 years); and aging (65-70 years) (Buhler & Massarik, 1968). Havighurst's (1972) age periods in adulthood are classified as: early adulthood (18-35 years); middle adulthood (35-60 years); and, later maturity (60 years and over).

Over the years the National Center for Education Statistics (NCES) has endeavored to provide insights about people and activities in the rapidly changing area of adult education. The first national survey on participation in adult education was conducted by Holden in 1958. This study defined participants as non-fulltime students 14 years old or older instead of beginning at 17 years as in later NCES surveys. Because of this distinction, direct statistical comparisons between data collected at differing times should be viewed with caution.

The series of studies relative to participation in adult education programs was conducted in 1969 by Okes (1971). A study completed in 1972 (Participation in Adult Education) supplies the most current data available. Based on information supplied directly by the participants, it contains socioeconomic descriptions of participants, non-participants and fulltime students as well as information from answers to special adult education related questions. The sample was composed of 50,000 households with 105,000 persons. Counts were weighted for representation in the population and projections were made to produce national estimates for the United States.

As this survey pointed out, during the year ending May 1972 the estimated 15,734,000 participants in adult education entered 25,572,000 adult education activities for an average of 1.6 activities per person.
Participants in adult education were defined as persons beyond compulsory school age, 17 years and over, who were not enrolled fulltime in a regular school or college program but were engaged in one or more activities of organized instruction. "Full-time students" were persons aged 17 to 34 enrolled fulltime in a regular school or college program and thus not eligible for the adult education survey. Students were considered "participants" if they were enrolled fulltime on a short term basis and if their enrollment was not part of a regular high school or college program (e.g., persons age 17 and over who attended a three week residential hotel training program).

The assumption was made that few people aged 35 and over were enrolled in school fulltime. Consequently, persons 35 years or over were not asked about full-time status but they were considered eligible for questions about participation in adult education in general.

**Definition: Adult education**

Adult education has been defined as organized instruction including correspondence courses and private tutoring, usually at a set time and place, ordinarily under the auspices of a school, college, church, neighborhood center, community organization, or other recognized authority, and generally with a predetermined end result which might or might not have been a certificate, diploma or degree. No minimum duration has been included in the definition. For purposes of data collection, Sunday school classes, Bible classes and other church activities that could be considered as worship services have not been included in the scope of the governmental definition of adult
educational activity. Many churches, however, provide classes in literacy, child development, environmental issues, etc., and participation in these have been included. Recreational activities have not been included in the definition, but learning how to express creative talents or use leisure time were considered to be adult education. Independent study has not been included so that persons pursuing a course of learning without outside guidance are not considered as participants in adult educational activities.

Demographic characteristics in adult education

Of the estimated 138,865,000 non-institutionalized people age 17 and older in May 1972, 11.3 percent had participated in one or more adult educational experiences (excluding any full-time study). The survey found 8.4 percent of people between 17 and 34 years enrolled full-time in a regular school or college program. Participation in adult education was made up primarily of younger persons; 55 percent were 34 years old and younger and only 8.7 percent were 55 years old or older. However, it is important to keep in mind that while participants are now preponderantly young, the proportion of older people in the population is growing. Thus with an older and more educated population in the future, the utilization patterns in terms of age for adult education could change in the years ahead. The data also show a high correlation between educational level and participation in adult education; 27.8 percent of the participants had at least a college degree, while only 13.1 percent had an eleventh grade education or less. In comparing levels of education for participants versus non-
participants, it is observed that median years of regular school completed are equivalent in all age categories for adults currently 55 years and older. Level of education for current participants is 12.88 years compared to 9.74 years for non-participants. The major problem which evolves from these demographic variables is the fact that neither educational research nor teacher training has been directed toward the population of adult student learners.

Charles (1971) states that "research in the instructional process and on effective teaching techniques for grownups is virtually non-existent". He goes on to state:

We as educators, especially as trainers of teachers have done almost nothing to prepare to teach this large segment of the population that needs, and is ready to profit from, education at many levels. We do not train teachers to teach grownups; thus classes for adults may be taught as if the students are like children or adolescents. They are not; they are demonstrably different, and presumably need different instructional techniques (p. 232).

A considerable amount of research has evolved based on laboratory learning studies utilizing adults as samples. The primary areas for research of this nature are in the areas of cognition and memory (Howe, 1977; Arenberg & Robertson-Tchabo, 1978; Botwinick & Storanrdt, 1974; Arenberg, 1973; Anders, Pozard & Lillyquist, 1972). Relatively little research has been directed towards exploring specific behaviors adult learners bring into the classroom setting in general and into test taking situations in particular. One exception to this is the dissertation by Rindskopf (1976) in which rigidity and anxiety were explored for young, middle aged and older learners. The present study
evolved in response to the need for research in what Hultsch and Pentz (Note 1) term a "contextual" learning setting.

Cautiousness as an Aspect of Cognitive Performance

Definition: Cautiousness

It is a popular belief that attitudes, interests and values vary from generation to generation and that with age a more cautious approach to life prevails. In a review of adult age and cautiousness literature, Okun (1976; Note 2) commented that only the extremes of risk-taking behavior in adulthood are being explored. The bulk of the research studies restrict the samples to college undergraduates and elderly persons. Except for Tongberg (1970) and Rindskopf (1976) none of the literature reviewed by either Okun (1976; Note 2) or this author revealed studies relative to cautiousness which include middle-aged adults. A focus of the present study was to follow up on the challenge issued by Kogan and Wallach (1964):

There is a striking dearth of information about adults who are beyond college and not yet eligible for gerontological research. If we could collect systematic data on subjects in the 30 to 60 age range, we would obviously be able to specify a reasonably accurate age function for risk taking. The opportunity for advancing knowledge in this area is strong, if one can bring a total life span perspective to the problem (p. 168).

One aspect in the learning behavior of older individuals which has recently received considerable attention is the role of cautiousness in decision-making situations (Taylor & Camp, Note 3; Okun, Siegler & George, 1978; Okun & Elias, 1977; Okun & DiVesta, 1976; Botwinick, 1966). Cautiousness has traditionally referred to the reluctance of a learner
to risk being wrong for the sake of being correct (Korchin & Basowitz, 1957). It is a commonly held belief that older persons are more cautious than younger persons. This belief has received some empirical support utilizing elderly individuals as subjects. Older subjects seem unlikely to make a change or to venture a response that could result in gain if there is a risk of losing what is already in hand (Botwinick, 1973). He suggests that cautiousness increases with age because older subjects are disinclined to take any action. This means that older people tend to choose an alternative with no risk regardless of how high the probability of success. An older person will opt for inaction given a ninety percent chance of success and a ten percent chance of failure if the option for inaction is available (Botwinick, 1966).

There is minimal evidence to suggest that the cautiousness trend can be found in groups composed exclusively of middle-aged individuals (Stevens-Long, 1979). In a political poll, among subjects with only a high school education, middle-aged subjects exceed the young in choosing the "no opinion" response. Education level was reported to be an important factor. The tendency for middle-aged individuals to react in this manner may be due more to fear of failure than to the pattern of decline of self-confidence exhibited by the elderly. Hence it is possible different factors influence the responses of both the elderly and middle-aged individuals relative to the concept of cautiousness.
Variables related to cautiousness

Okun (1976) reviewed the literature describing several hypotheses which have been proposed to account for adult age differences in cautiousness. Hypotheses concerning why differences should occur include cultural, physiological, rational and generational.

An example of cultural hypotheses include work on disengagement (Cumming & Henry, 1961) and studies by Maddox (1965) relative to society's response to the old person. Rejection, condemnation and lowered self-esteem all interact to lead older adults to view themselves as less competent. Their reaction is to maintain ego integrity by exhibiting greater cautiousness.

Physiological data (Welford, 1977; Fozard, Wolf, Bell, McFarland & Podolsky, 1977; Corso, 1977) suggest slowing in behavior on a task so that accuracy may improve. Limitations in perceptual mechanisms and slower response times of elderly are related to aging of the nervous system.

The rational hypothesis discussed by Okun (1976) assumes that later life decrements are unavoidable and thus the elderly, in line with their limitations, exhibit more cautiousness when tackling difficult tasks. A rational adjustment between ability level and level of aspiration is more likely to occur for the older adult.

Okun's (1976) final theoretical hypothesis suggests that age differences are the result of cohort effects. Values and needs fluctuate with trends in society thus differences between age groups may be confounded with historical trends. This issue has been discussed
at length by Baltes and Nesselroade (1973). Okun (1976) concluded by offering this statement for consideration:

...two or more hypotheses may be tenable and apply at the same time. Furthermore each hypothesis is likely to account for some forms of cautiousness to a greater extent than it does for others (p. 222).

Botwinick (1973) outlined three factors which are interactive with the concept of cautiousness in old age. The three factors—ability levels, environmental demands and personality considerations—have not been systematically investigated to the point of permitting a better understanding about the individual differences in levels of cautiousness viewed from a life span perspective.

Cautiousness and cognitive ability appear to be related. Edwards and Wine (1963) gave the Raven Progressive Matrices test to men of a wide range of ages who were patients in a Veterans Administration hospital. Cautiousness was found to increase and intelligence decrease with age. When intelligence levels were matched for men of differing ages, cautiousness was no longer seen as age related. Two equally tenable conclusions can be drawn from this study. First, cautiousness in later life could have been viewed as a function of intellectual decline or, alternately, older men were viewed as lower in intelligence as a result of their cautiousness.

Environmental demands also serve to exert pressure for the elderly to disengage from activities and to turn inward with increasing age (Havighurst, Neugarten & Tobin, 1968; Maddox, 1965; Cumming and Henry, 1961). For the purposes of the cautiousness literature it is necessary
to recognize only that disengagement may be more of a function of society's response to the elderly than it is a natural consequence of aging per se. Society, in general, tends to react to aged individuals with condemnation, rejection and expectations of failure. If this view is accurate then it is anticipated that, as Botwinick (1973) states, "the aged would inhibit response, value accuracy, make the omission error, vacillate, desire certainty---be cautious" (p. 103).

The third factor outlined by Botwinick (1973) that can be tied to cautiousness exists within the area of personality correlates. Few studies have been done which elect to determine the effect of a specific set of personality measures on cautiousness. In 1961 Kogan and Wallach suggested that subjective feelings of elderliness were correlated with cautiousness in a low anxiety group of women ages 51 to 86 years of age. This was not true in the group determined to be high anxious as measured by a group form of the Minnesota Multiphasic Personality Inventory (MMPI). Thus it was suggested that low anxiety women may have been satisfied with their self-perception. If they saw themselves as elderly, they were cautious; if they did not have this perception, they were not cautious. The anxious women, however, were believed to be in conflict relative to their elderliness and thus were cautious in ways that were not related to their self-perception. Eisendorfer (1965) viewed omission error as indicative of general withdrawal which may be associated with high anxiety.
Cautiousness in older adults

Evidence in psychological literature suggests that age related differences in cautiousness and conservatism are correlates of increasing age (Schonfield, 1974; Botwinick, 1966; Wallach & Kogan, 1961). Personality traits and cognitive ability have also been associated with patterns of cautiousness (Botwinick, 1973; Silverman, 1963; Basowitz & Korchin, 1957; Korchin & Basowitz, 1957; Pressey & Kuhlen, 1957).

The primary instrument utilized to substantiate the point that the elderly are more cautious than younger individuals is the choice-dilemmas instrument introduced by Wallach and Kogan (1961). This instrument requires the subject to make judgments about hypothetical situations. According to Kogan and Wallach (1964) each item represents:

...choice dilemmas between a risky and a safe course of action. A subject's selection of the probability level for the risky alternative's success that would make it sufficiently attractive to be chosen thus reflects the deterrence or failure for him in a particular decision area. The instrument is of a semi-projective nature, the subject being asked how he would advise others in the situation described. It is assumed, of course, that an individual's advice to others reflects his own regard for the disutility of failure. Probability levels provided for the success of the risky alternative are 1 in 10, 3 in 10, 5 in 10, 7 in 10, 9 in 10 .... It can be seen that higher scores are associated with greater conservatism (p. 26).

The option to refuse to advise a risky alternative regardless of the probability of success were scored 10 in 10. This response was thus assumed to reflect the most cautious response. The 1961 study by Wallach and Kogan is identified (Okun, 1976) as the first experimental study to examine adult age differences in risk taking judgments.
The conclusions were: in situations with high self-confidence, the range of judgment for older men and women is less than for younger; second, confidence in judgment situations is higher for younger than older males; and third, the disutility of failure is greater for older individuals of both sexes than for the younger participants.

This entire train of research and this measure assumes, perhaps erroneously, a unidimensional concept of risk taking. More recent literature suggests risk taking is a multi-faceted concept. Jackson, Hourany and Vidmar (1972) presented an analysis which led to the hypothesis that the risk taking construct was comprised of at least four major facets: monetary, physical, social and ethical risk taking. Four personality scales, one for each facet, were developed. Substantial evidence for convergent and discriminant validity was found both from correlational and factor-analytic data providing support for the four-part model proposed. Even though four independent factors were obtained, however, a second order factor analysis yielded strong evidence for an underlying dimension of generalized risk taking.

Botwinick (1966) modified the Wallach and Kogan (1961) task and substituted older figures as central characters in the hypothetical judgment situation. He found that older subjects of both sexes were more cautious than younger subjects when faced with a decision making task. Older subjects were predisposed to choose the 10 in 10 alternative of abstaining from responding to the life situation. In a methodological variation, Botwinick (1966) removed the 10 in 10 alternative of not responding from the choices in the life situation.
task. In this instance Botwinick (1966) found no significant differences between the old and young adult respondents. Consequently Botwinick (1966) concluded older people would choose to avoid risk taking if that option were available. This study was the first to suggest that cautiousness may be modified by the demands of the situation.

Closer inspection by Korchin and Basowitz (1957) of the trial-by-trial changes in the patterns of error for elderly and young adult learners provided evidence of a dimension of difference between old and young learners which they termed cautiousness. During a series of learning tasks the younger participants were more likely to make some response to the stimulus item and to offer hypotheses whether correct or incorrect. The older participants either responded correctly or not at all. This behavior was consistent from trial to trial on word associate, nonsense equation and false equation tasks. The older subjects also showed a greater tendency not to respond to Gestalt Completion test items. Korchin and Basowitz (1957) thus concluded that the older person is more cautious. Despite the injunction to guess, the authors hypothesized that older individuals may require greater certainty before they are willing to report. Although the elderly participants knew that "no response" was a wrong response, they apparently preferred the error of omission to that of comission. This tendency to inhibit a response in an uncertain situation may reflect a protective strategy through which the recognition of inadequacy is avoided.
Leech and Witte (1971) reinforced adults under two types of conditions. Group one was reinforced for responding regardless of whether the response was correct or incorrect and did not receive reinforcement for omissions. Group two was reinforced only for correct responses and were not reinforced for either incorrect responses or omissions. The results indicated that reinforcing older adults for responding incorrectly decreased the number of omission errors.

Birkhill and Schaie (1975) administered an intelligence test to a group of elderly adults under high and low risk conditions with each condition sub-divided into choice or no choice instruction. The risk reinforcement contingencies were set by varying amounts of monetary rewards. When the choice to omit a response was present, encouragement to take risks facilitated performance. Thus instructions could modify the omission behavior of this elderly sample. Taub (1967), in an attempt to replicate the results of a portion of Botwinick's (1966) study, tried to reduce omission errors of the elderly by instructing them to respond to every item. The outcome was that omission errors continued at the same rate as with those in the elderly control group. Witte and Freund (1976) reported that the magnitude of differences in verbal learning between young and older adults was not reduced by requiring subjects to respond to each stimulus. Okun, Siegler and George (1978) observed that risk taking accounted for age differences in omission errors but not total errors (omission errors plus commission errors).
Cautiousness has recently been utilized as a covariate in a hypothetical application of signal detection theory to aging research (Taylor & Camp, Note 3) as well as to demonstrate how misinterpretation of studies are possible without simultaneous consideration of hits and false alarms. In the hypothetical example, 20 younger subjects and 20 older subjects judged whether or not each of 200 pictures had been presented to them previously. Half of the pictures were "old" and half were "new." The results were first scored in terms of the traditional percent of old items recognized as old and then in signal detection theory terms: proportion of old pictures recognized as old (hit rate) and proportion of new pictures incorrectly called "old" (false alarm rate). Using percent of old items recognized as the dependent variable, younger subjects were superior in recognition performance to older subjects at the \( p < .01 \) level. When the two groups were compared utilizing a signal detection analysis paradigm, the results were exactly the opposite. The older subjects were superior to younger subjects at the \( p < .01 \) level. The groups differed on both hit and false-alarm rate and did so in the opposite directions. The percent bias was different for the two groups, with older subjects showing a greater positive bias (or greater caution) than younger subjects. Similar research by Gordon and Clark (1974a) substantiates this finding. However, work by Harkins and Chapman (1977) has indicated bias against giving positive responses decreases with age while Craik (1969) claimed bias against positive responses is unrelated to age.
Cautiousness as a function of instructions was investigated by Okun and DiVesta (1975). A vocabulary task was presented to young and elderly adults under risk conditions of neutral, supportive and challenging instructions. The results indicated that older adults were more cautious than younger adults. Moreover, they selected tasks at which they would have higher probabilities of success. Relative to their younger counterparts they were less likely to raise their level of aspiration following success. No effect of instructions on cautiousness was found for either age group. The results were interpreted as suggesting that older adults choose relatively easy tasks as a means of protecting themselves from self-evaluation of important ability dimensions.

A follow-up to this study was completed by Okun and Elias (1977). Again, a vocabulary task was given to young and elderly adults. Degrees of risk were manipulated with a payoff structure that varied either directly or indirectly with risk. The results did not indicate that older adults are more cautious than younger adults but rather that, for both age groups, risk taking is a function of payoff structure. The results suggest that risk should not be considered independent of payoff.

Finally, in the single study investigating trends in cautiousness during middle adulthood, Tongberg (1970) discovered that, when the 10 in 10 alternative of abstaining from responding is removed, middle aged individuals were inclined to avoid risk taking if the opportunity was available. The task in this experiment was the Wallach and Kogan (1961) hypothetical situation judgment task.
Confidence Level Rating and Cautiousness

The effect of attitudes toward oneself upon behavior has been a particularly difficult topic in the area of information acquisition. Wyer (1977) has synthesized some literature related to this topic in the text Schooling and the Acquisition of Knowledge (Anderson, Spiro & Montague, 1977). Self-relevant attitudes are hypothesized to affect the acquisition of knowledge in two ways. One is through the mediating effects personal attitudes may have upon the reception and acceptance of information. The second effect is upon the active pursuit of knowledge and the acquisition of skills. Both points have indirect relevance for the present study.

Effect of personal attitudes upon reception of information

Wyer (1977) states:

...if a person feels incapable of refuting the content of a communication, he may not attempt to counter-argue it. On the other hand, if the person also feels incapable of understanding the communication, he may not attempt to read it carefully, and his reception may be low as well. To the extent that self-esteem affects both one's belief that he can understand the communication...and refute its contents...may be related to communication impact. This impact may be greater on persons whose self esteem is moderate than on those whose self esteem is either high or low (p. 282).

Research tangentially related to this hypothesis comes from Leventhal (1970) concerning the effects of fear arousing communications. In summary, a fear inducing communication will have more of an impact on those who feel capable of engaging in fear reducing behavior and less of an impact on those who feel unable to cope with danger. Other
similar findings are present in work by Wyer (1974), McGuire (1968) and Janis (1967).

Effects of personal attitude in skill acquisition

The acquisition of knowledge also includes the development of skills often acquired through practice. Test taking skills, one of the foci of this study, can be classified as a skill which can be modified through practice. Implications for the effects of self-evaluations on skill development has grown out of attribution literature (Dweck, 1975; Wortman, Panciera, Shusterman & Hibscher, 1976; Spiro & Sherif, 1975). The tenet underlying this research is that the perseverance exhibited by individuals following success or failure depends on whether they attribute the outcome to themselves (ability and effort) or to external factors (task difficulty or luck). A second set of variables imposing restrictions on the self-confidence of individuals is whether they attribute their responses to a task to characteristics that are difficult to change (inherent ability or task difficulty) or to transient effects which may change at a later point in time (luck or effort). Dweck (1975) reported that persons are less likely to try to perform better following failure if they attribute their failures to either task difficulty or inherent lack of ability (lower self-confidence) than if they attribute their poor performance to lack of effort. Research in the attribution literature makes the salient point that persistence in acquiring skills and information is not simply a function of previous success and failure but depends, to a great extent, upon the personal interpretation given the outcomes by
by the decision maker.

A third factor influencing skill acquisition comes from the locus of control literature. The locus of control construct is an integral part of social learning theory (Rotter, 1975; Lefcourt, 1966; 1972; Phares, Ritchie & Davis, 1968). It refers to the degree to which individuals perceive the events in their lives as being a consequence of their own actions, and thereby controllable (internal control), or as being unrelated to their own behaviors and therefore beyond personal control (external control). Persons who view themselves as responsible for their own fate should be more cautious about what they accept from others than those who do not perceive themselves to be in active control of their fate. Crowne and Liverant (1963) reported that individuals who did not feel in control of their lives expressed less confidence in their own judgment abilities. Another interesting series of studies is reported by Lefcourt (1972) in which it was found that externals performed more in accord with task directions while internals did not. Consequently externals were highly responsive to external definitions of the task while internals appeared to be more influenced by some personal urges and varied little with the experimenters suggestions.

Learning research utilizing internality and externality as a variable (Phares et al., 1968; Seeman & Evans, 1962; Seeman, 1963) reported greater retention of material in a recall task when degree of initial learning is controlled. However, contrary to this, Phares, Ritchie
and Davis (1968) have reported superior recall of material by externals when the learning occurred in the context of a threatening situation. It may be that differential levels of anxiety in internals and externals may have the effect of interfering with the recall of material associated with the threat.

**Confidence in responding**

In the study by Basowitz and Korchin (1957) it was suggested that as self-confidence decreases, more confidence is required before making a response. The omission error may be viewed as the result of a desire for certainty; it is better not to respond than to be wrong. In the Korchin and Basowitz (1957) study the elderly adults still inhibited responses despite an injunction to guess. In a study by Botwinick, Brinley and Robbin (1958) older adults were slower in responding on a size discrimination task when they had unlimited time to respond as opposed to a time limit. It was concluded that the extra time was indicative of an increase with age in confidence level required before responding. In other words, to minimize possible failure and to increase confidence of being correct, the elderly adults required more certainty from the task setting.

Elderly persons were asked by Botwinick (1970) to rate themselves with respect to their levels of self-confidence during two task situations. One task required no formal knowledge (the D-scale of the MMPI) and the second task involved factual information not commonly known. Confidence levels were obtained after each response. The results were contradictory. For the first task, there were no
differences between young and elderly adults relative to self-confidence levels. In the second task, the younger adults exhibited lower confidence levels than the elderly. In a vocabulary task with controlled levels of feedback, Engel and Phye (1979) found no differences in confidence levels for young and elderly adults in both the feedback and no-feedback conditions. Consequently, cautiousness may be a variable which is constrained to a particular context.

Cautiousness in decision making situations

An item analysis of the Wallach and Kogan (1961) hypothetical judgment task revealed that some of the twelve life situations reflected differential relationships to cautiousness. For instance, elderly were more cautious than young adults for items dealing with finances, professional failure and death. Even when the twelve items from the Botwinick (1966) questionnaire incorporating elderly persons as central characters were combined with the Wallach and Kogan (1961) task, patterns of cautiousness emerged relative to the twenty-four life situations. A second unexpected result was obtained. Both young and elderly adults were more cautious when the central figures were young adults as opposed to aged central characters. This occurred significantly more when the respondents were elderly. The older respondents, more than the younger, devalued the lives and problems of the aged central characters. Both old and young respondents appeared to regard the aged as having less to lose should a risky course of action occur. However, when the tendency to choose particular probability levels was compared with the two age groups of respondents, there was a marked
tendency for elderly adults to choose the 10-in-10 alternative
(not advise risk regardless of the likelihood of success in the
outcome).

In a variation of the twenty-four item task, Botwinick (1969)
 omitted the 10-in-10 alternative. No age differences in cautiousness
were obtained and the alleged devaluation of the aged central characters
by the older subjects disappeared. The older respondents did not
devalue their problems; they tended to avoid decisions relative to
them.

In an unusual study utilizing middle aged adults as well as young
and elderly adults, Gergen and Back (1966) analyzed post hoc the
results of a Gallup survey which permitted a "no opinion" response.
In relation to the three age groups polled, the middle aged group
(40-59 years) exceeded the young (20-39 years) in terms of percentage
of "no opinion" items. Differences between the middle and elderly
(60+ years) were even stronger, with the elderly being the least
opinionated.

Cautiousness in Meaningful Learning Tasks

It has been observed that elderly persons are more cautious than
young. How does this cautiousness apply to test taking behavior or
tasks of intellectual ability? The former question is one of the
foci of this study. The second was investigated by Birkhill and
Schaie (1975). Cautiousness was manipulated by systematically varying
pre-test instruction conditions involving the reinforcement of two
levels of risk and of response omission when taking the Primary Mental
Abilities Test (PMA). The participants were given the choice of not responding (choice condition) or responding at all times (no choice condition). A Choice x Risk interaction was found. There was no difference in performance under the no-choice instruction but under the choice instruction subjects performed significantly better under low risk conditions. It was concluded that at least some older people do less well when they are afraid that involvement in a task involves unreasonable risk of loss or embarrassments, but control of instructional set may cause an elderly adult to consider alternatives which may otherwise be discarded.

Prose learning

The study of processes involved in prose memory learning tasks have been utilized to discover how elderly adults organize information under ordinary "everyday" conditions as opposed to laboratory conditions (Deese, 1961; Hulika, 1967; Gordon & Clark, 1974; Taub, 1976; Taub & Kline, 1978). The use of meaningful verbal material is particularly useful with older adults because it serves to maintain their motivational level to a greater extent than would lists of words or nonsense syllables (Hulicka, 1967). Use of prose materials also serves to extend the applicability of laboratory research to events encountered in everyday life. A series of three articles titled "Translations in Gerontology---From Lab to Life" recently appeared in the American Psychologist; (Schonfield, 1974; Birren, 1974; Schaie, 1974) these articles argued that laboratory research is a potential friend of the aging adult and findings need to be utilized for
the benefit of an aging population in practical sorts of ways.

Searching for prose learning research that utilized middle aged adults as subjects was a difficult task at best. A body of knowledge relative to prose recall learning by the elderly is growing rapidly (Taub & Kline, 1978; Bromley, 1958; Gordon & Clark, 1974; Taub, 1975). Only one prose learning study (Taub, 1976) was found which utilized young, middle aged adults as subjects. Females (ages 21-36) were the young group in a prose learning research design comparing young and elderly female learners. The prose selection was from Form B of the Rates of Reading subtest of the Diagnostic Reading tests. The task consisted of reading paragraphs aloud and silently then taking an 18 item comprehension test following reading trials. The silent reading condition was concluded to be the mode of choice for young and elderly subjects as it required less time with no loss in retention.

Application questions and prose learning

Education is designed to develop the critical thinking ability of students. Presenting questions is a common mode of assessment of this critical thought process. Watts and Anderson (1971) developed the application question hypothesis to determine if asking application questions during the learning process facilitated the learner's ability to apply concepts or principles in a post-test setting. The application question hypothesis derives support from studies which demonstrate a facilitative effect of application questions inserted close (adjunct) to the textual material (Watts & Anderson, 1971; Felker & Dapra, 1975; Woods & Andre, Note 4; 1978). In the typical
adjunct question prose learning task, participants read prose passages and answer a series of application, factual or both types of adjunct questions while reading. Post-tests are then completed which consist exclusively of new application questions. In a review of the literature Andre (Note 5) has suggested type of adjunct question is generally not a very powerful determinant of learning to apply concept materials presented in prose. In spite of this conclusion, it seems that a similar prose learning paradigm could be developed which, when integrated with the concepts of level of confidence and errors of omission can be utilized to investigate cautiousness patterns of adult students in a realistic applied test taking situation.

Summary

The relationship of cautiousness to learning for middle-aged adults has virtually been ignored by learning theory and developmental psychologists. In 1932 Bartlett published a book titled *Remembering*, which described a series of experiments relative to the retention of meaningful text materials. In this book Bartlett (1932) included material which as nearly as possible commonly dealt with in real life. Recent work by Cofer (1977), Jenkins (1974), Meacham (1977) and Shaw and Bransford (1977) has served as a current base for what has been termed (Hultsch & Pentz, Note 1) as the contextual approach to learning and memory. Although the tenants of a contextual approach to the analysis of learning and memory appear adaptable to construction of a learning theory specifically for middle aged adults, few research designs have attempted to integrate this age group into developmental
learning paradigms. In essence, the contextual approach to learning and memory takes the position that events have a quality or meaning as a whole. The quality of events is the result of transactions between the organism and its context. Change and novelty are accepted as fundamental and, although change is emphasized as in the organic point of view, the change from a contextual stand is toward some particular end state. Again, unlike organicism, the contextual model denies the existence of an absolute cause. The task for the contextual learning theorist is to identify and describe change and transitions in context. Consequently learning and memory are not seen as isolated processes; the emphasis is on the interface of the various perceptual, linguistic, inferential, problem solving, personality, social, and cultural processes that contribute to understanding events (Hultsch & Pentz, Note 1). This perspective is particularly useful in attempting to interpret the variety of experiences adults bring into a learning situation. In this setting, there is no one contextual "model" of learning; only a framework consistent with the contextual perspective (Hultsch & Pentz, 1979). Consequently, past experience is seen as providing a set of boundary conditions for the integration and partialling out of information in order to determine the meaning of a specific event.

The relationship of cautiousness to learning for middle aged adults is a non-cognitive factor of learning which can be best understood from the contextual point of view. The concept of cautiousness can be explored through the use of a task commonly met by
most adults as they improve their quality of life through personal advancement. The multiple choice test is one means utilized by industry (merit exams), the federal government (civil service examinations) licensing agencies (real estate, insurance companies), the professions (physicians, nurses, legal services) and institutes of post-secondary education in order to determine who will advance within the constraints of a chosen career. Examining errors of omission in a multiple choice test taking situation as a measure of cautiousness has been well-documented as a characteristic of elderly individuals. However, aging and learning research has not investigated patterns middle aged individuals exhibit relative to errors of omission in a test taking situation. Given the detrimental nature errors of omission can have during the prime career growth period of middle aged adults and the current interest in advanced education by adults it is surprising there has not been more attention given to exploring test taking skills and patterns of the middle aged adult.

The purpose of the present study was first, to document patterns of errors of omission for three categories of adults through the use of a prose learning task with controlled levels of instruction designed to affect test taking style. The second focus of this study involved an exploration of expressed levels of confidence by adults faced with making the best decision in a multiple choice test situation.
The investigation explored the following hypotheses:

1. There is a positive relationship between level of educational experience and cautiousness: the middle aged adult in the scholastically naive group (group three) will be more cautious than both of the scholastically experienced adult groups.

2. There is a positive relationship between type of instruction and style of test taking: directions to guess (G) will decrease errors of omission and instructions not to guess (DG) will increase errors of omission for all three levels of subjects when compared to personal style (PS) of test taking.

3. There is a positive relationship between confidence levels for this task and educational experience: the two groups of scholastically experienced adult students will exhibit higher levels of confidence for all types of responses than will the scholastically naive adult students.
METHOD

Subjects

The sample consisted of 90 adults representing an age span from seventeen to fifty-five years of age and a range of post-secondary quarter hour academic credits from none to forty-five. Three equivalent groups were selected based on age and academic experience. Group one consisted of 30 volunteers (12 males, 18 females) who ranged from 17 to 20 years of age ($\bar{X} = 18.60$, s.d. = 0.72) and represented a collection of academic quarter hours which ranged from 10 to 43 credits ($\bar{X} = 27.73$, s.d. = 6.33). This group was labeled scholastically experienced young adults (SEY). Group two consisted of 30 participants (11 males, 19 females) who represented an age range of 24 to 46 years ($\bar{X} = 28.76$, s.d. = 5.02) and represented an academic quarter hour range of 3 to 45 credits ($\bar{X} = 25.73$, s.d. = 14.00). This group was labeled scholastically experienced adults (SEA). The third group of thirty adults (6 males, 24 females) ranged in age from 25 to 55 years ($\bar{X} = 38.46$, s.d. = 9.97) and had no post-secondary education. This group was classified as scholastically naive adults (SNA).

The scholastically experienced young adults (SEY) received psychology grade point credits for their participation. Contacting the middle aged sample was more difficult. The middle aged adults were obtained from several sources. Letters were sent to all students twenty-five years and older who were registered as full-time students at Iowa State University who had accumulated no more than
forty-five college level credits was contacted. The letter (Appendix A) consisted of a brief description of the study. A stamped return postcard was enclosed so the recipients could indicate whether they would be interested in participating in the study. Space was provided for their names and phone numbers so group or individualized appointments for participation could be arranged. Ninety letters were sent and thirty adults responded and participated in the study. Of this group of scholastically experienced adults (SEA), eleven indicated they desired psychology grade point credit for their participation. The other nineteen adults volunteered for a variety of personal reasons and received neither credit or financial renumeration for their time.

The final category of middle aged adults was the most difficult and challenging to contact. Participation was restricted to adults twenty-five years of age and older who were interested in attending college but who had not begun to accumulate credits at the post-secondary level. Initial contact with twelve of these scholastically naive adults (SNA) was initiated through the registrar's office at Iowa State University. These twelve were the entire population of adults over twenty-five years of age who were applying for admission to Iowa State University to start Spring, Summer Session I or Summer Session II; none of these adults had accumulated any post-secondary credits. Each individual received the same packet of information as the scholastically experienced adults (see Appendix A). Three adults responded and all three were tested on an individual basis. They received no credit or renumeration for their participation.
In order to expand the size of the scholastically naive adult (SNA) sample, advertisements were placed in both the campus and local newspapers for three consecutive days soliciting volunteers for the project (Appendices B and C). Only one adult responded to either of the newspaper advertisements. This individual subsequently participated in the study. Again, no credit or renumeration was provided to this volunteer. A notice was placed in the university non-professional staff weekly newsletter relative to the project. There were five inquiries but no participants evolved from this method of contacting non-college level adults.

At this point joint research arrangements were obtained in cooperation with the Des Moines Area Community College (DMACC). The Office of Student Development obtained a computer list consisting of the names of individuals twenty-five years of age and older who had, at some point during Summer or Fall 1978, indicated an interest in courses at DMACC and who had accumulated no post-secondary credits. There were 102 names on the list and the entire population received a letter describing the joint research project (see Appendix D for a copy of this letter). Only four individuals signed up for one of the three group testing sessions. Sessions were scheduled for one afternoon, one evening and one weekend in order to accommodate the flexible schedules of this category of adult. The evening prior to the start of the group testing sessions, twenty-six members of the sample who had not responded were contacted by phone. It was discovered that seventy-six of the individuals who had received a
mailing had no current phone number. Of the twenty-six contacted, seven agreed to participate but only when $10.00 was offered for two hours of their time.

In order to increase the sample size, a final advertisement was placed in the Iowa State University campus newspaper (Appendix E) describing the project and requesting fifteen volunteers for two hours. A payment of $8.00 was offered to the first fifteen to register for this single group session. This effort completed the subject pool needed to complete the study. Informed consent forms were obtained from all participants in this research project prior to completing the written tasks. Table 1 summarizes the description of the individuals who participated in this study.

Measures

Prose learning task

Three paper-and-pencil instruments were given. The first was an extension of the prose learning task developed by Watts and Anderson (1971) and refined by Andre (1976; Woods & Andre, Note 4). Six passages and twenty-four questions were written specifically for the present study. One condition of the completed prose learning task appears in Appendix F. The cover sheet solicited demographic data from the respondents concerning age, sex and number of college level credits earned since completing secondary school. The task consisted of a twelve page passage which defined and gave examples illustrating twelve principles or concepts within three broad areas of psychology. Four passages were related to learning theory, four to Freudian
### Table 1

**Characteristics of Sample**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>SEY</th>
<th>SEA</th>
<th>SNA</th>
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</thead>
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<td><strong>SEX</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>12</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Females</td>
<td>18</td>
<td>19</td>
<td>24</td>
</tr>
<tr>
<td><strong>AGE RANGE (years)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>17-20</td>
<td>24-46</td>
<td>25-55</td>
</tr>
<tr>
<td>Females</td>
<td>18-20</td>
<td>24-39</td>
<td>28-47</td>
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<tr>
<td><strong>MEAN AGE (years)</strong></td>
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<td>Male: Mean Age</td>
<td>18.80</td>
<td>28.76</td>
<td>38.46</td>
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<td>0.72</td>
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<td>Standard Deviation</td>
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<td>6-42</td>
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<td><strong>MEAN CREDITS</strong></td>
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<tr>
<td>Male: Mean Credit</td>
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<td>27.54</td>
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<tr>
<td>Standard Deviation</td>
<td>6.68</td>
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<td>Female: Mean Credit</td>
<td>28.16</td>
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<td>0.00</td>
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<tr>
<td>Standard Deviation</td>
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<tr>
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<td>19.05</td>
<td>18.26</td>
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<tr>
<td>Standard Deviation</td>
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<td>9.39</td>
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<td>Female: Mean Vocabulary Score</td>
<td>15.00</td>
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<td>Standard Deviation</td>
<td>8.70</td>
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<td>10.77</td>
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<table>
<thead>
<tr>
<th><strong>SIGNED UP FOR CREDIT</strong></th>
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<tr>
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<td>0</td>
</tr>
<tr>
<td>Female</td>
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<td>7</td>
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<tr>
<td><strong>RECRUITED BY LETTER</strong></td>
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</tr>
<tr>
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<td>0</td>
<td>1</td>
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<tr>
<td><strong>GRATIS VOLUNTEERS FROM AD</strong></td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>0</td>
<td>0</td>
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</table>
psychology and four to social psychology respectively. A posttest consisting of sixteen questions was inserted after each set of four passages. The multiple choice questions were directly related to the content of the set of passages immediately preceding it. Each passage page was written in the same format. The first and last paragraphs presented illustrations of the concept while the middle paragraph provided definitions of the concept, a name of a psychologist associated with the concept and some incidental information about the concept. An instruction page was inserted after each set of four passages. This page provided information to the respondents as to whether they were to attack the question in the same manner as they generally did; that is, respond in a manner which represented their own personal style (PS) of multiple choice test taking. A second type of instruction page required participants to guess (G) if they were unsure of the answer. The third style of instruction page informed participants not to guess (DG) at all but to respond only if they were sure of the answer. Otherwise they were to leave the question blank. These three conditions of personal style (PS), guess (G) and don't guess (DG) were counterbalanced across all three educational experience groups to form six distinct conditions. Table 2 summarizes the grid indicating the order in which each direction set was given to the participants. The passages were presented in the same order throughout all six conditions. Order of concepts was determined by utilization of a table of random numbers. Table 3 contains an outline summarizing the passage order.
Table 2
Order of Counterbalanced Conditions for Each Set of Directions
Personal Style (PS), Don't Guess (DG) and Guess (G)

<table>
<thead>
<tr>
<th>Condition</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>G</td>
<td>G</td>
<td>DG</td>
<td>DG</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>DG</td>
<td>P</td>
<td>DG</td>
<td>P</td>
<td>G</td>
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<td></td>
<td>DG</td>
<td>G</td>
<td>DG</td>
<td>P</td>
<td>G</td>
<td>P</td>
</tr>
</tbody>
</table>

Table 3
Random Order of Passages by Concept and Topic

I. Learning Theory\(^a\)
   A. Intermittent Reinforcement
   B. Generalization Gradients
   C. Drive Reduction Theory
   D. Classical Conditioning

II. Freudian Psychology
   A. Neurotic Nucleus\(^b\)
   B. Extroversion-Introversion\(^c\)
   C. Displacement\(^c\)
   D. Projection

III. Social Psychology\(^b\)
   A. Learned Helplessness
   B. Risky Shift
   C. Attribution Theory
   D. Social Methods of Desensitization

\(^a\)Watts and Anderson, p. 99, 100, 101, 102 herein.
\(^b\)Engel, p. 110, 121, 122, 123, 124 herein.
\(^c\)Andre, p. 111, 112, 113 herein.
Sixteen application questions were developed for each set of four passages. Four multiple choice type questions were designed for each passage. Each question had four alternatives. Two of the questions could be answered from the reading and two of the questions from each passage page had no clear answer. This forced the participants into a "must guess" situation if they were to respond to the questions.

Two forms of question sets were developed in order to minimize bias which may evolve from a consistent presentation of questions. A table of random numbers was utilized in order to evolve a sequence for questions sets for Form A (blue pages) and Form B (pink pages). Appendices G and H contain the two random order question sets for each of the three topic areas within the prose learning task. The correct responses for each of the eight answerable questions within each of the three sets of concept passages are marked with a "check" (✓). A coin flip procedure was utilized in order to determine how many of each form would be placed within each condition for each group of adults (SEY, SEA, SNA). Table 4 summarizes the random order of presentation for each form. The prose learning task was scored according the the categories outlined in the form presented in Appendix I.

Confidence level rating

Following Rindskopf and Charles, (1974) a variation of a numbered rating scale was used to assess level of confidence for each question. In the Rindskopf and Charles (1974) study it was observed that many older adults had difficulty using numbered rating scales. In a later
Table 4
Random Order of Form for Each Condition

<table>
<thead>
<tr>
<th>Condition</th>
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<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholastically Experienced Young Adults</td>
<td>a</td>
<td>A</td>
<td>A</td>
<td>b</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Scholastically Experienced Adults</td>
<td>B</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Scholastically Naive Adults</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

| Scholastically Experienced Adults       | A | A | A | B | A | B |
| Scholastically Naive Adults              | A | A | A | A | A | B |

A refers to Form A of the prose learning task.

B refers to Form B of the prose learning task.
study Rindskopf (1976) utilized a number line with the number one on the left and the number nine on the right end with a small perpendicular mark in the middle. The ends of the line were marked with "not at all" and "very much." The participant's mark on the line was given a number ranging from one to nine by placing a ruler on the line. Each item on the scale was then transformed from a number between one and ninety-nine to a standard normal deviate (Wolins & Dickinson, 1973). For example, a score of "1" would be transformed to a z score of -2.33; a score of "50" to 0.00 and a score of "95" to 1.68. The methodology summarized by Wolins and Dickinson (1973) permits a response set reflecting the tendency of some people to use the center portion of a scale and others the extremes to be statistically controlled.

A confidence estimation line was placed between every item on the posttest and participants indicated their level of confidence for each response they choose to answer by making an "X" on the line. Confidence levels were not obtained for questions respondents chose to omit. Since this permitted a "missing data" option, the Wolins and Dickinson (1973) transformation could not be applied. The confidence levels were obtained by placing a ruler on the line and obtaining a number which was utilized as the numerator of a fraction whose denominator was the total length of the line. The resulting proportion was considered as the confidence level for that respondent. Appendices G and H contain examples of the confidence level instrument utilized in the study. Appendix J presents the score sheet used to summarize confidence level data for each set of readings.
Wide Range Vocabulary Test

At the conclusion of the prose learning task, subjects were given the written form of the Wide Range vocabulary test (WRVT). Since participants reflected a variety of educational backgrounds and academic interest levels, this was utilized as a screening device in order to ascertain that the groups were comparable in terms of intellectual ability. The Wide Range Vocabulary Test was also scored for errors of omission. See Appendix K for a copy of this instrument. The answers are indicated on the appendix copy.

Procedure

Participants were tested in groups whenever it was feasible. Otherwise individual appointments were made for testing subjects. The booklets were taken serially from a stack in which booklets for the various conditions were unsystematically arranged. In this way students within each educational experience level (SEY, SEA, SNA) were randomly assigned to personal style (PS), don't guess (DG) and guess (G) conditions. Informed consent was obtained prior to reviewing the directions with the participants. See Appendix L for a copy of the informed consent form. The experimenter read aloud the directions on the cover sheet of the booklet. Subjects read at their own paces. A room proctor was present to assure that participants did not look back to the text pages while making a response. Upon completion of the prose learning task, the participants raised their hands and were provided with a copy of the Wide Range Vocabulary Test. Participants' starting and completion times for this task were noted on the top of
the first page of this task. It was then stapled to the prose learning booklet. Upon completion of the vocabulary portion of the experiment, the participant was given a copy of a debriefing sheet detailing the exact purpose of the study. See Appendix M for a copy of the debriefing sheet. In some cases, extended informal discussion ensued. After discussing any questions or concerns expressed by the participants or arranging appointments for future discussion, the respondents were dismissed.

**Statistical Analysis**

The original plan was to complete a five-way analysis of variance with the between subject factors of Group, Sex and Order and the within subject factors of Answer and Instructions. However, due to the lack of both sexes in all possible Sex by Order cell combinations, two separate analyses needed to be completed. Thus a Sex by Order interaction was impossible to obtain due to the nature of the sex distribution within the sample.

The first design was a 3 (Group) x 6 (Order) x 2 (Answer) x 3 (Instructions) balanced split-plot analysis of variance. There were three levels of Group (Scholastically Experienced Young Adults, Scholastically Experienced Adults, Scholastically Naive Adults), six levels of Order (all combinations of Guess, Don't Guess, Personal Style), two levels of Question Type (Answerable, Not Answerable) and three levels of Instructions (Don't Guess, Guess, Personal Style). Analyses were performed for each of six dependent variables. They were: 1) proportion of errors of omission to total errors in the vocabulary task
(i.e. one measure of cautiousness); 2) age; 3) total academic credits obtained by participants; 4) proportion of errors of omission to total errors in the prose learning task (i.e. a second measure of cautiousness); 5) confidence level for all questions attempted; and, 6) confidence level for all questions including those omitted with a 0.00 confidence level assigned to those which were omitted by the respondent.

A second split-plot $3 \times 2 \times 2 \times 3$ unweighted means analysis of variance was completed. This analysis included three levels of Group (Scholastically Experienced Young Adults, Scholastically Experienced Adults, Scholastically Naive Adults), two levels of Sex (Male, Female) two levels of Question Type (Answerable, Not Answerable) and three levels of Instructions (Don't Guess, Guess, Personal Style). Analyses were performed for each of the six dependent variables explored in the $3 \times 6 \times 2 \times 3$ split-plot analysis of variance. A significance level of $p < .05$ was used as a minimum acceptable value for significance throughout the study. The Balanova 5 procedure outlined in the SOUPAC program developed at the University of Illinois was used to compute the ANOVAs. Tukey's Honestly Significant Difference test was utilized to make all pairwise comparisons among means.
RESULTS

A 3 (Group) x 6 (Order) x 2 (Answer) x 3 (Instruction) split-plot analysis of variance was used to analyze the data examining levels of cautiousness. The data for all significant main effects and interactions were reported. All effects not mentioned were non-significant.

There was a significant between groups effect for Age, \( F(2, 72) = 74.76, p < .001 \) with the Scholastically Experienced Young Adults (\( \overline{X} = 18.60 \)) representing the youngest group, the Scholastically Experienced Adults (\( \overline{X} = 28.76 \)) representing the middle age group and the Scholastically Naive Adults (\( \overline{X} = 38.46 \)) representing the oldest age group of the sample. A comparison of means indicated the three groups differed (\( p < .01 \)) from each other.

As expected, the between groups factor of Credit Total was also significant, \( F(2, 72) = 97.50, p < .001 \) with the Scholastically Experienced Young Adults (\( \overline{X} = 27.73 \)) accumulating the most credits and the Scholastically Naive Adults (\( \overline{X} = 0.00 \)) accumulating the least. The difference between these two group means was significant at \( p < .001 \). There was no significant difference between the credit totals of the Scholastically Experienced Young Adults (\( \overline{X} = 27.73 \)) and the Scholastically Experienced Adults (\( \overline{X} = 25.73 \)). There was a significant difference (\( p < .01 \)) between the credit totals accumulated by the Scholastically Experienced Adults and the Scholastically Naive Adults.
Measures of cautiousness

Proportion of omitted responses on vocabulary task. There was a significant main effect for Group, $F(2, 72) = 3.72, p < .03$. The older, Scholastically Naive Adults obtained significantly higher percentages of errors by omission of responses ($\bar{X} = 19.33$) than did the Scholastically Experienced Adults ($\bar{X} = 10.95$) or the Scholastically Experienced Young Adults ($\bar{X} = 3.48$). The analysis of variance summary table for this dependent variable is presented in Table 5.

Total proportion omitted on prose learning task. There was a significant effect for Instructions, $F(2, 144) = 76.65, p < .001$ and a significant Group by Order by Instructions interaction, $F(20, 144) = 1.62, p < .05$ for total proportion of omitted responses on the prose learning task. For this second measure of cautiousness there was no significant main effect for Group. A significantly ($p < .01$) higher percentage of errors of omission occurred in the Don't Guess instruction condition ($\bar{X} = 26.32$) than in the Personal Style ($\bar{X} = 6.62$) or Guess ($\bar{X} = 1.39$) instruction condition. The analysis of variance summary table for this dependent variable is presented in Table 6. The means for the three way interaction of Group by Order by Instruction are summarized in Table 7.

An additional analysis was completed in order to explore in more depth the effect of the first instructional set (either Don't Guess, Guess or Personal Style) upon proportion of omitted responses in the prose learning task. The 2 (Group) by 2 (Answer) by 3 (Instructions) split-plot analysis of variance revealed a significant main effect for Instructions, $F(2, 80) = 30.50, p < .001$. There were significantly
Table 5
Analysis of Variance Summary Table for Proportion of Omitted Responses on Vocabulary Test

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>2,72</td>
<td>2.26</td>
<td>1.13</td>
<td>3.72</td>
<td>.02*</td>
</tr>
<tr>
<td>Order</td>
<td>5,72</td>
<td>1.73</td>
<td>.34</td>
<td>1.14</td>
<td>.34</td>
</tr>
<tr>
<td>Group x Order</td>
<td>10,72</td>
<td>2.16</td>
<td>.21</td>
<td>.71</td>
<td>.70</td>
</tr>
<tr>
<td>Subject/Group x Order</td>
<td>2.18</td>
<td>.30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05.
Table 6
Analysis of Variance Summary Table for Proportion Omitted on Prose Learning Task for Type of Instruction and Interaction of Group, Order and Instruction

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td>2,144</td>
<td>6.22</td>
<td>3.11</td>
<td>76.65</td>
<td>.001***</td>
</tr>
<tr>
<td>Group x Instruction</td>
<td>4,144</td>
<td>.17</td>
<td>.04</td>
<td>1.06</td>
<td>.376</td>
</tr>
<tr>
<td>Order x Instruction</td>
<td>10,144</td>
<td>.16</td>
<td>.01</td>
<td>.41</td>
<td>.936</td>
</tr>
<tr>
<td>Group x Order x Instruction</td>
<td>20,144</td>
<td>1.32</td>
<td>.06</td>
<td>1.62</td>
<td>.050*</td>
</tr>
<tr>
<td>Subjects x Instruction/Group x Order</td>
<td>5.84</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** p < .001.
**  p < .01.
*   p < .05.
Table 7
Mean Percentage Errors of Omission on Prose Learning Task as a Function of Group, Order and Instructions

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Scholastically Experienced Young Adults</th>
<th>Scholastically Experienced Adults</th>
<th>Scholastically Naive Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Don't Guess</td>
<td>32.92&lt;sup&gt;a&lt;/sup&gt;</td>
<td>21.17</td>
<td>15.54</td>
</tr>
<tr>
<td>Guess</td>
<td>0.00</td>
<td>5.24</td>
<td>0.00</td>
</tr>
<tr>
<td>Personal Style</td>
<td>11.65</td>
<td>1.25</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<sup>a</sup> Results are presented in percentages,
higher percentages of errors of omission occurring in the Don't Guess
($X = 29.19$) instructional set than in the Personal Style ($X = 3.88$) or
Guess ($X = 0.41$) instructional sets. All means differed significantly
at $p < .01$. Table 8 presents the ANOVA summary table for this factor.

**Rated confidence level for all attempted questions**

Two separate analyses for confidence level were completed. The first analysis examined confidence levels for all questions attempted by the respondents. The second analysis examined confidence levels for all questions with a 0.00 confidence value assigned to questions respondents chose to omit. Data for rated confidence levels for all attempted questions are included within the main portion of the Results section. Data for rated confidence levels with the assigned 0.00 value for all omitted responses are contained in Appendix N.

The means for the rated confidence levels were obtained from a scale ranging from one to ninety-nine on which participants indicated the degree of confidence they felt that the response they checked was correct. One indicated little confidence and ninety-nine indicated a high level of confidence. There was a significant effect for answer, $F (1,72) = 14.72$, $p < .001$ with rated confidence being higher for Answerable ($X = 63.3$) than Not Answerable ($X = 60.1$) questions.

There was also a significant Group by Answer interaction $F (2,72) = 5.69$, $p < .005$. The Answerable and Not Answerable means differed significantly ($p < .01$) for the Scholastically Experienced Young Adults ($X$ Answerable = 62.0, $X$ Not Answerable = 57.2)
Table 8

Analysis of Variance Summary Table for Proportion of Omitted Responses on Prose Learning Task from the 3 (Group) x 2 (Answer) x 3 (Instruction) Sub-analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>2,80</td>
<td>.05</td>
<td>.02</td>
<td>.52</td>
<td>.591</td>
</tr>
<tr>
<td>Instruction</td>
<td>2,80</td>
<td>2.92</td>
<td>1.46</td>
<td>30.50</td>
<td>.001***</td>
</tr>
<tr>
<td>Group x Instruction</td>
<td>4,80</td>
<td>.24</td>
<td>.06</td>
<td>1.30</td>
<td>.276</td>
</tr>
<tr>
<td>Subjects/Group x Instruction</td>
<td>3.83</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** p < .001.
and the Scholastically Experienced Adult ($\bar{x}$ Answerable = 69.9, $\bar{x}$ Not Answerable = 64.4). The means for the Scholastically Naive Adult did not differ in the Answerable and Non-answerable condition ($\bar{x}$ Answerable = 57.9, $\bar{x}$ Not Answerable = 58.6).

There was a significant effect for type of Instructions, $F (2,72) = 15.69, p < .001$ for rated confidence levels for questions respondents chose to answer. There were significant differences ($p < .01$) in rated confidence levels between the Don't Guess ($\bar{x} = 66.7$) instruction set when compared to the Guess ($\bar{x} = 58.7$) and Personal Style ($\bar{x} = 59.6$) instruction conditions. The difference in rated confidence level between the Guess and Personal Style instruction sets was not significant.

The Order by Instruction interaction was also significant $F (10,144) = 2.58, p < .006$. See Table 9 for a summary of the confidence level means for this interaction. There was a significant difference ($p < .01$) between all means in the Don't Guess and Personal Style instructions as well as between the Don't Guess and Guess instructions for all categories of order. Means were also significant ($p < .01$) between Guess and Personal Style instructions for all but Orders one (P, G, DG) and three (G, P, DG).

The three way interaction of Order by Answer by Instruction was also significant $F (10,144) = 3.35, p < .001$. Table 10 summarizes the mean confidence levels for the combination of conditions. Table 11 contains the analysis of variance table for rated confidence levels.
Table 9
Means for Order by Instruction Interaction for Confidence Level for All Attempted on Prose Learning Task

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Order</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Don't Guess</td>
<td>61.8</td>
<td>72.3</td>
</tr>
<tr>
<td>Guess</td>
<td>60.8</td>
<td>59.4</td>
</tr>
<tr>
<td>Personal Style</td>
<td>61.7</td>
<td>61.9</td>
</tr>
</tbody>
</table>
Table 10
Means for Order x Answer x Instruction Interaction for Confidence Level for All Attempted on Prose Learning Task

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Answerable</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Order</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Don't Guess</td>
<td></td>
<td>62.4</td>
<td>69.5</td>
<td>69.6</td>
<td>63.8</td>
<td>68.3</td>
</tr>
<tr>
<td>Guess</td>
<td></td>
<td>63.6</td>
<td>60.7</td>
<td>69.4</td>
<td>55.0</td>
<td>57.2</td>
</tr>
<tr>
<td>Personal Style</td>
<td></td>
<td>64.9</td>
<td>62.8</td>
<td>65.7</td>
<td>52.7</td>
<td>61.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Not Answerable</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Order</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Don't Guess</td>
<td></td>
<td>61.2</td>
<td>75.1</td>
<td>64.3</td>
<td>67.0</td>
<td>57.8</td>
</tr>
<tr>
<td>Guess</td>
<td></td>
<td>57.9</td>
<td>58.1</td>
<td>60.6</td>
<td>46.6</td>
<td>51.1</td>
</tr>
<tr>
<td>Personal Style</td>
<td></td>
<td>58.5</td>
<td>60.9</td>
<td>65.3</td>
<td>50.2</td>
<td>62.0</td>
</tr>
</tbody>
</table>
Table 11

Analysis of Variance Summary Table for Rated Confidence Level for All Attempted Questions on Prose Learning Task: 3 (Group) x 6 (Order) x 2 (Answer) x 3 (Instruction) Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer</td>
<td>1,72</td>
<td>138698.0</td>
<td>183688.3</td>
<td>14.72</td>
<td>.001**</td>
</tr>
<tr>
<td>Grp. x Ans.</td>
<td>2,72</td>
<td>107225.0</td>
<td>53612.5</td>
<td>5.69</td>
<td>.005*</td>
</tr>
<tr>
<td>Order x Ans.</td>
<td>5,72</td>
<td>40696.9</td>
<td>8139.3</td>
<td>0.86</td>
<td>.509</td>
</tr>
<tr>
<td>Grp. x Order x Ans.</td>
<td>10,72</td>
<td>92764.5</td>
<td>9276.4</td>
<td>0.98</td>
<td>.464</td>
</tr>
<tr>
<td>Sub. x Ans./Grp. x Order</td>
<td>678043.0</td>
<td>9417.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instr.</td>
<td>2,144</td>
<td>687372.4</td>
<td>343686.2</td>
<td>15.61</td>
<td>.001**</td>
</tr>
<tr>
<td>Grp. x Instr.</td>
<td>4,144</td>
<td>51060.6</td>
<td>12765.1</td>
<td>0.58</td>
<td>.677</td>
</tr>
<tr>
<td>Order x Instr.</td>
<td>10,144</td>
<td>5698613.7</td>
<td>56968.1</td>
<td>2.58</td>
<td>.006*</td>
</tr>
<tr>
<td>Grp. x Order x Instr.</td>
<td>20,144</td>
<td>285549.3</td>
<td>14277.4</td>
<td>0.64</td>
<td>.869</td>
</tr>
<tr>
<td>Sub. x Instr./Grp. x Order</td>
<td>3168945.2</td>
<td>22006.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ans. x Instr.</td>
<td>2,144</td>
<td>12883.8</td>
<td>6441.9</td>
<td>1.10</td>
<td>.334</td>
</tr>
<tr>
<td>Grp. x Ans. x Instr.</td>
<td>4,144</td>
<td>18784.6</td>
<td>4696.1</td>
<td>0.80</td>
<td>.524</td>
</tr>
<tr>
<td>Order x Ans. x Instr.</td>
<td>10,144</td>
<td>195696.0</td>
<td>19569.6</td>
<td>3.35</td>
<td>.006*</td>
</tr>
<tr>
<td>Grp. x Order x Ans. x Instr.</td>
<td>20,144</td>
<td>77204.7</td>
<td>38602.3</td>
<td>0.66</td>
<td>.858</td>
</tr>
<tr>
<td>Sub. x Ans.x Instr./Grp. x Order</td>
<td>840853.7</td>
<td>5839.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***
p ≤ .001.

**
p ≤ .01.

*
p ≤ .05.
In order to further explore the effects of order on instruction for rating confidence levels, a separate 3 (Group) by 2 (Answer) by 3 (Instructions) analysis was completed for the first type of instruction encountered by the respondents. There was a significant Group by Instruction interaction, F (4,80) = 3.03, p < .02. When Don't Guess was the first instruction set, the Scholastically Naive Adults expressed higher (p < .01) levels of confidence in their responses than did the Scholastically Experienced Young Adults (X_{SNA} = 72.5, X_{SYA} = 64.1). When Personal Style was the initial instruction set, the reverse was true. In this instance both scholastically experienced adult groups (X_{SEY} = 70.3, X_{SEA} = 72.3) expressed significantly (p < .01) higher levels of confidence in their responses than did the Scholastically Naive Adults (X = 46.3).

There was also a main effect for Answer in this analysis with higher confidence ratings given to Answerable (X = 66.8) than Not Answerable (X = 57.9) questions. The analysis of variance summary table for rated confidence level in this 3 x 2 x 3 analysis of variance for rated confidence levels is found in Table 12.

Group by Sex by Answer by Instruction Split-plot Analysis of Variance Measures of cautiousness

A 3 (Group) x 2 (Sex) x 2 (Answer) x 3 (Instructions) split-plot analysis of variance was used to analyze the data examining levels of cautiousness. As in the first analysis, there were significant group effects for age, F (2,84) = 49.21, p < .001 and credit total, F (2,84) =
Table 12
Analysis of Variance Summary Table for Rated Confidence Levels for All Attempted Questions in the 3 (Group) x 2 (Answer) x 3 (Instruction) Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>2,80</td>
<td>259089.7</td>
<td>129544.9</td>
<td>1.80</td>
<td>.171</td>
</tr>
<tr>
<td>Instruction</td>
<td>2,80</td>
<td>236447.6</td>
<td>118,223.8</td>
<td>1.64</td>
<td>.199</td>
</tr>
<tr>
<td>Group x Instruction</td>
<td>4,80</td>
<td>872715.7</td>
<td>218,178.9</td>
<td>3.03</td>
<td>.022*</td>
</tr>
<tr>
<td>Subjects/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group x Instruction</td>
<td></td>
<td>5749306.2</td>
<td>71,866.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Answer</td>
<td>1,80</td>
<td>261165.0</td>
<td>261,165.0</td>
<td>27.64</td>
<td>.001**</td>
</tr>
<tr>
<td>Group x Answer</td>
<td>2,80</td>
<td>51283.8</td>
<td>25,641.9</td>
<td>2.71</td>
<td>.072</td>
</tr>
<tr>
<td>Answer x Instruction</td>
<td>2,80</td>
<td>23762.9</td>
<td>11,881.4</td>
<td>1.25</td>
<td>.289</td>
</tr>
<tr>
<td>Group x Answer x Instruction</td>
<td>4,80</td>
<td>27066.2</td>
<td>6,766.5</td>
<td>0.71</td>
<td>.583</td>
</tr>
<tr>
<td>Subjects x Answer/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group x Instruction</td>
<td></td>
<td>755859.5</td>
<td>9,448.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** p < .001.
**  p < .01.
*   p < .05.
72.96, \( p < .001 \). The Tukey Honestly Significant Difference test indicated significant differences \( (p < .01) \) among all combinations of groups. The scholastically experienced young adults were the youngest \( (\overline{X} = 18.61) \) and had acquired the most credits \( (\overline{X} = 27.62) \). The Scholastically Experienced Adults were the next oldest \( (\overline{X} = 28.62) \) and had accumulated 26.11 credits. The eldest group \( (\overline{X} = 36.83) \) represented by the Scholastically Naïve participants, had accumulated no post-secondary credits.

**Total proportion omitted on prose learning task.** For the second measure of cautiousness, total proportion of errors of omission on the prose learning task, there was only one significant effect. This was for instruction, \( F(2,168) = 57.39, p < .001 \) with the highest percentage of omission occurring in the Don't Guess instructions condition \( (\overline{X} = 25.67) \) and the least percentage of omission in the Guess condition \( (\overline{X} = 1.37) \). The Personal Style condition was between the other two scores with a mean of 6.38% errors of omission. All means differed at \( p < .01 \). Table 13 reflects the ANOVA summary table for this factor.

**Rated confidence level for all attempted questions**

Four combinations of four factors achieved significance for the dependent variable which reflected rated confidence level for those questions attempted by the participants. There were main effects for both Answer, \( F(1,84) = 12.85, p < .001 \) and Instructions, \( F(2,168) = 10.57, p < .001 \) conditions. Higher confidence levels were assigned to the questions which were Answerable \( (\overline{X} = 63.9) \) than for those questions which were Not Answerable \( (\overline{X} = 60.5) \). In the instruction sets, higher confidence
Table 13
Analysis of Variance Summary Table for Total Proportion Omitted Responses on the Prose Learning Task: 3 (Group) x 2 (Sex) x 2 (Answer) x 3 (Instruction) Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td>2,168</td>
<td>4.82</td>
<td>2.41</td>
<td>57.39</td>
<td>.001**</td>
</tr>
<tr>
<td>Group x Instruction</td>
<td>4,168</td>
<td>0.09</td>
<td>0.24</td>
<td>0.57</td>
<td>.682</td>
</tr>
<tr>
<td>Sex x Instruction</td>
<td>2,168</td>
<td>0.26</td>
<td>0.13</td>
<td>0.31</td>
<td>.731</td>
</tr>
<tr>
<td>Group x Sex x Instruction</td>
<td>4,168</td>
<td>0.20</td>
<td>0.51</td>
<td>1.22</td>
<td>.304</td>
</tr>
<tr>
<td>Subject x Instruction/Group x Sex</td>
<td>7.06</td>
<td>0.42</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** p < .001.
ratings were expressed for questions in the Don't Guess condition
($\bar{x} = 67.0$) than in the Personal Style ($\bar{x} = 60.2$) or Guess ($\bar{x} = 59.5$)
conditions. The difference between the Don't Guess and Guess instructions
was significant at $p < .01$. The means in the Don't Guess and Personal
Style categories differed at $p < .05$. There were no differences in
ratings of confidence level between the Guess and Personal Style
conditions.

There was a Group by Answer interaction that was significant
$F(2, 34) = 3.88$, $p < .05$. In this instance the rated confidence level
means in the Answerable and Non-answerable conditions differed
significantly for both the Scholastically Experienced Young Adults
($\bar{x}$ Answerable = 62.8, $\bar{x}$ Not Answerable = 57.9) and Scholastically
Experienced Adults ($\bar{x}$ Answerable = 70.6, $\bar{x}$ Not Answerable = 65.1). The
rated confidence level means for the Scholastically Naive Adults did
not differ for the two levels of answer style ($\bar{x}$ Answerable = 58.2,
$\bar{x}$ Not Answerable = 58.6).

There was also a complicated four way interaction in this confidence
level rating analysis which was represented by a Group by Sex by
Answer by Instruction interaction, $F(4, 168) = 3.06$, $p < .05$. The
means for this interaction are summarized in Table 14. The analysis
of variance summary table for this analysis is found in Table 15.
Table 14  
Means for Group x Sex x Answer x Instruction Interaction for Confidence Level for All Attempted on Prose Learning Task  

<table>
<thead>
<tr>
<th>Scholastically Experienced Young Adults</th>
<th>Answerable</th>
<th>Not Answerable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Don't Guess</td>
<td>Guess</td>
</tr>
<tr>
<td>Male</td>
<td>67.4</td>
<td>67.5</td>
</tr>
<tr>
<td>Female</td>
<td>65.8</td>
<td>52.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scholastically Experienced Adults</th>
<th>Answerable</th>
<th>Not Answerable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Don't Guess</td>
<td>Guess</td>
</tr>
<tr>
<td>Male</td>
<td>77.3</td>
<td>72.3</td>
</tr>
<tr>
<td>Female</td>
<td>71.7</td>
<td>67.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scholastically Naive Adults</th>
<th>Answerable</th>
<th>Not Answerable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Don't Guess</td>
<td>Guess</td>
</tr>
<tr>
<td>Male</td>
<td>63.3</td>
<td>58.4</td>
</tr>
<tr>
<td>Female</td>
<td>64.1</td>
<td>53.9</td>
</tr>
</tbody>
</table>
Table 15

Analysis of Variance Summary Table for Confidence Level for All Attempted Questions on Prose Learning Task: 3 (Group) x 2 (Sex) x 2 (Answer) x 3 (Instruction) Analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f,</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ans.</td>
<td>1,84</td>
<td>123933.6</td>
<td>123933.6</td>
<td>12.85</td>
<td>.005**</td>
</tr>
<tr>
<td>Grp. x Ans.</td>
<td>2,84</td>
<td>74912.9</td>
<td>37456.4</td>
<td>3.88</td>
<td>.024</td>
</tr>
<tr>
<td>Sex x Ans.</td>
<td>1,84</td>
<td>698.2</td>
<td>698.2</td>
<td>0.07</td>
<td>.788</td>
</tr>
<tr>
<td>Grp. x Sex x Ans.</td>
<td>2,84</td>
<td>1361.1</td>
<td>680.5</td>
<td>0.07</td>
<td>.931</td>
</tr>
<tr>
<td>Sub. x Ans./ Grp. x Sex</td>
<td></td>
<td>809884.6</td>
<td>9641.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instr.</td>
<td>2,168</td>
<td>500093.7</td>
<td>250046.8</td>
<td>10.57</td>
<td>.001***</td>
</tr>
<tr>
<td>Grp. x Instr.</td>
<td>4,168</td>
<td>47616.2</td>
<td>11904.0</td>
<td>0.50</td>
<td>.733</td>
</tr>
<tr>
<td>Sex x Instr.</td>
<td>2,168</td>
<td>26627.8</td>
<td>13313.9</td>
<td>0.56</td>
<td>.570</td>
</tr>
<tr>
<td>Grp. x Sex x Instr.</td>
<td>4,168</td>
<td>20539.5</td>
<td>5134.8</td>
<td>0.21</td>
<td>.928</td>
</tr>
<tr>
<td>Sub. x Instr./ Grp. x Instr.</td>
<td></td>
<td>970976.4</td>
<td>23635.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ans. x Instr.</td>
<td>2,168</td>
<td>19345.1</td>
<td>9672.5</td>
<td>1.59</td>
<td>.205</td>
</tr>
<tr>
<td>Grp. x Ans. x Instr.</td>
<td>4,168</td>
<td>18597.6</td>
<td>4649.4</td>
<td>0.76</td>
<td>.548</td>
</tr>
<tr>
<td>Sex x Ans. x Instr.</td>
<td>2,168</td>
<td>10464.3</td>
<td>5232.1</td>
<td>0.86</td>
<td>.423*</td>
</tr>
<tr>
<td>Grp. x Sex x Ans. x Instr.</td>
<td>4,168</td>
<td>74276.5</td>
<td>18569.1</td>
<td>3.06</td>
<td>.018</td>
</tr>
<tr>
<td>Sub. x Ans./ Grp. x Instr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** p < .001.
**  p < .01.
*   p < .05.
DISCUSSION

Specific subject selection and task administration procedures may have served to limit the generalizability of the results of this study. In order to form the sample group of scholastically experienced adults, letters were sent to all adult students in attendance at one mid-western university who had accumulated forty-five or less academic credits. Fewer than one-third of those contacted volunteered to participate in the project. Informal discussion after the task indicated the motivation for participation varied. Some did receive point credit towards their psychology classes; others wished to participate in order to learn more about themselves in a test-taking situation and some wished to see what a psychology learning experiment was like. None of the participants in this group were paid for participation. A sample bias related to this group of scholastically experienced adults could emerge in several ways.

First, the participants were different from the general population of adults in that they had already chosen to obtain post-secondary training with a baccalaureate degree as a final long-range objective. Second, they agreed to participate in the study while the majority of their cohorts did not choose to do so. Third, the females outnumbered the males almost two to one for this particular sample sub-group.

Subject selection was also viewed as a particularly difficult problem during formation of the scholastically naive adult sub-group. In this instance the sample was obtained by newspaper ads and letters (some of which were followed by phone calls). In addition, some
participants brought a friend who also agreed to participate. In this sample, some respondents volunteered to participate gratis but the majority were paid a modest sum in order to defray expenses for travel or child care. Whether the motivations for participation varied according to recruitment status is unknown as is the effect on results. The female participants outnumbered the males four to one in this sub-sample thus further limiting the generalizability of the conclusions.

Testing procedures also may have a confounding effect upon results. Initially, specific group testing situations were established in order to collect the data. This was an acceptable procedure in acquiring information from the scholastically experienced young adult sample. Their accessibility to campus and desire for grade credit were conducive to group data collection methods. However, the environmental demands upon the older, scholastically experienced adults made group data collection difficult. Individual appointments were necessary in order to acquire sample information. The bulk of the data for the scholastically naive sample, however, was obtained in two group sessions with ten to fifteen participants per session. A small minority of this sub-sample experienced individual testing sessions. Any effects resulting from group versus individual data collection procedures were not assessed in this study.

A final and more serious sample weakness was the unexpected confounding age variation between the two older adult groups. There was a significant \( p < .01 \) age difference between the scholastically experienced adults \( \bar{X} = 28.76 \) and the scholastically naive adults
It was anticipated this would not be the case. Thus age is a confounding variable in this study and cannot be eliminated from consideration in interpreting the results.

In the future, it may be possible to eliminate these sample problems through contact with a more accessible pool of adults. Industry, government offices or junior and four year college systems that utilize prose learning or multiple choice tests may be willing to share the accumulated results in an anonymous fashion. This would permit a spread of age, sex, ability and educational levels and a relatively consistent data collection environment. The motivation factor would also be similar thus making it easier to assume homogeneity of anxiety level.

The hypothesis that older, scholastically naive adults would reflect higher levels of cautiousness in an applied risk taking situation such as a prose learning multiple choice task was only partially substantiated. There were no differences relative to errors of omission on the prose learning task among any of the three age groups regardless of level of educational experience. The older, middle aged, scholastically naive adults reflected omission patterns similar to those exhibited by the scholastically experienced young adults and scholastically experienced adults.

Group differences relative to errors of omission did emerge on the Wide Range Vocabulary Test given at the conclusion of the prose learning task. In this instance the scores of the older, less scholastically experienced adults reflected a significantly higher
proportion of errors of omission than those obtained by either of the two groups. In addition, the scholastically experienced adults made more errors of omission on the vocabulary task than the scholastically experienced young adults in spite of the fact their credit totals (i.e. educational experience) were not significantly different. No sex differences were evident relative to errors of omission on either the prose learning task or the vocabulary task.

If the task as presented in this study is viewed as a type of risk taking situation, then the results present evidence which is both supportive and contradictory relative to conclusions found in previous studies by Korchin and Basowitz (1957) and Botwinick (1973). Although the present task was not a replication of the Korchin and Basowitz (1957) study in which it was found that older learners were reluctant to risk being wrong for the sake of being correct, the present study found no consistent evidence that was true for middle-aged learners. Adults did choose alternatives rather than omitting them thus extending Botwinick's (1973) study in which he suggested that with increasing age elderly subjects are disinclined to take any action which could result in gain if there is a risk of losing what is already in hand. The present research found this to be true only in the vocabulary portion of the task but not in the prose learning task.

Since there were no differences in scores on the Wide Range Vocabulary Test it was possible to partially confirm the conclusion by Edwards and Wine (1963) that when intelligence levels were matched for men of differing ages, cautiousness was no longer seen as age related.
This was true for the prose learning portion of the task in which the three groups, matched by vocabulary test scores, did not exhibit differences relative to levels of cautiousness. Why this was not true on the vocabulary task leads to some additional hypotheses related to the choice of task and cautiousness in adults.

The two tasks differed in two important respects. First, the vocabulary task required prior knowledge in order to obtain a satisfactory score. Second, the gradually accelerating level of difficulty of words was unique to the vocabulary portion of the task. Neither of these conditions was present in the prose learning task. The prose learning task was designed to depend less on prior knowledge and more on ability to read a series of prose passages with no time restrictions and to respond immediately to a series of applied questions designed to be related to the readings. The task was also designed to reflect a consistent reading level equivalent to that found in introductory college textbooks.

This observation leads to another intriguing question. It may be possible that cautiousness is reflected more in tasks or situations in which adults have prior knowledge and experience. If this is the case, then the life experiences of adults would lead them to be more cautious in responses. It is the authors observation that the more knowledge a student brings into a introductory class setting, the more difficult it is for that student to answer a question requiring an elementary answer while a less well-read student finds it easier to respond. For instance, graduate students often comment they have
difficulty answering introductory level college examination questions in their major field of study.

Perhaps too, the difference relative to errors of omission on the vocabulary and prose learning task may be related to the fact that the adults took the prose learning test immediately after learning the material. The length of time between learning and recall was variable for the vocabulary task. Checking whether length of time between learning and recall may affect level of cautiousness for various categories of learners would be a fruitful avenue for extended research. It is hypothesized that the prose learning task is more similar to a classroom situation and results of this nature would have more applicability for educators of adults.

Other interesting hypotheses may be generated relative to the difference in levels of cautiousness observed from responses to the two tasks. Perhaps middle-aged adults have not reached the stage where, as Botwinick (1973) observed, society in general tends to react with condemnation, rejection and expectations of failure. Thus they have not yet learned to "inhibit response, value accuracy, make the omission error" (p. 103). This does not help us understand, however, why the older, less scholastically experienced adults produced higher errors of omission on the vocabulary task than on the prose learning task. Perhaps there is already an expectation of failure built into a vocabulary task while no such expectations existed for the prose learning task.
Botwinick's (1969) conclusion that older people would choose to avoid risk taking if that option were available was not substantiated by the results of this study for this sample of middle-aged individuals. The "Don't Guess" direction set was designed to provide an opportunity for all respondents to omit responses. The level of omission for this direction set was significantly greater than for the other two direction sets. However, no age or experience level differences in errors of omission were found indicating levels of cautiousness remained equivalent for all categories of subjects.

In attempting to explore further the different results for the vocabulary versus the prose learning task, it is necessary to consider the possibility that responses on the vocabulary task were more reflective of a typical response pattern than those acquired during the prose learning task. Comments by participants during the debriefing sessions indicated anxiety was high during the prose learning task since the cover sheet indicated the task held some predictive value for future academic endeavors. Observation suggested a more relaxed, less tense appearance on the part of the respondents as they began the vocabulary task after spending from forty to ninety minutes on the prose learning task. It could also be assumed that a forty-eight item vocabulary task was a familiar and less mentally taxing experience for the participants. Given the high level of difficulty of the vocabulary task and possibly remembering school-day admonitions to "skip those you don't know" the older, scholastically naive adults proceeded to commit more errors of omission for this task than did the scholastically experienced
adults or the scholastically experienced young adults.

There could also be a cohort related learning skills effect hidden within this result pattern. The younger adults, with more experience in a multiple choice style test, may have been under more consistent subtle influence to take advantage of probability in a multiple choice task and, regardless of the direction set, to guess even when they were instructed not to guess. In general, older adults made comments pertinent to the point that multiple choice tests were a new learning challenge. The scholastically experienced adults stated that becoming used to a multiple choice testing situation was as much of a challenge as reading the text and coping with the classes. Some of the scholastically naive adults commented they had never taken a multiple choice test in school or that it had been years since they had experienced a task similar to either the vocabulary or prose learning task.

Other contributing factors to the lack of errors of omission on the prose learning task were the multiple influences of order and instruction. No interactions of this nature complicated the vocabulary task as levels of order and instruction were not inherent within the design. However, there was a consistent effect for type of instruction on the prose learning task. As hypothesized, instructions to guess decreased errors of omission and instructions not to guess increased errors of omission when compared to the personal style condition of test taking. Thus the second hypothesis was confirmed. In addition, the instructional admonition to "don't guess" as the first of two instructional sets (Orders Five and Six) produced higher error of
omission scores than any other order for all three instructional direction statements. Thus encouraging omissions by exclusion of the guess option could have established a response set encouraging higher levels of errors of omission in both the Personal Style and Guess conditions.

The third hypothesis, that the Scholastically Experienced Adult students would exhibit higher levels of confidence for all types of responses, was not substantiated. Two categories of rated confidence level estimation were developed from the data to explore this hypothesis. One set of confidence level means evolved from analyzing data only from questions respondents actually attempted. Since these may have reflected higher confidence levels for the individual who simultaneously made more errors of omission, confidence level data were also analyzed after assigning a value of 0.00 as a confidence level score for all omitted questions. In neither analysis was there a main effect for Group, Order or Sex. Consequently the major factors affecting confidence levels in both analyses were whether a question was Answerable or Not Answerable, and whether the instructions dictated that the respondent should guess, not guess or respond in the manner of his or her choice. Confidence levels were consistently higher for answerable questions. Confidence levels excluding questions respondents omitted were highest for questions with the Don't Guess instruction and lowest for the Guess instruction. The pattern was reversed for confidence levels where 0.00 was assigned to those participants chose to omit. In this instance, confidence scores were highest for the Guess instruction set and lowest
for the Don't Guess instruction set.

Group entered as a factor in a group-by-answer interaction but only in the analysis in which questions respondents chose to answer were analyzed. In this situation, the scholastically experienced adults exhibited higher levels of confidence for both answerable and not answerable questions than the other two groups of adults. The younger adults, however, were more confident in the answerable mode while the older, scholastically naive adults expressed higher confidence levels for unanswerable questions.

Several aspects of this research project warrant further investigation. First, it would be useful to explore whether errors of omission occur in various other applied situations where the risks are more real than those contrived by a prose learning multiple choice task. An example of such situations could be scores from drivers' examinations obtained from the Department of Transportation Driver Licensing Bureau. State licensing agencies or merit boards may be interested in exploring the types of errors exhibited by individuals of differing age, educational and professional levels for the purpose of determining how much test taking skills contribute to an individuals final score. It may be possible that test taking skills may produce low scores for an otherwise capable individual up for promotion and that the low scores on the test would deny the individual the promotion. This would indicate that perhaps formulas utilized by industry and government may need to be re-weighted in terms of the values assigned to a multiple choice test. Entrance examinations for guidance of adults returning to
school could also be examined to determine if errors of omission could produce detrimental test scores as these adults face their first set of post-secondary examinations.

Second, investigation of the variance in results between the prose learning task and vocabulary task in terms of prior versus immediate knowledge as well as the effect of time between learning and recall and their respective relationships to cautiousness would contribute to the understanding of cautiousness across the lifespan. For this variable of cautiousness in particular, ontogenetic, age-graded sources of influence appear to be less important than non-age related sources of influence such as historical changes in educational patterns. This project in particular provided support for a comment by Hultsch and Pentz (Note 1) that "the more we emphasize meaning rather than accuracy and the role of broader contexts in learning and memory, the more significant evolutionary history-graded and non-normative influences will become" (p. 26).

Third, more care in sampling techniques and the use of data acquired from a realistic rather than contrived learning task may also produce a more realistic assessment of the extent to which cautiousness affects the everyday decision making ability of adults.

Fourth, some general implications suggest themselves for use by persons working with older learners. For instance, permitting adults to share new learnings and to openly integrate them with experiences would encourage even the most cautious to risk speaking in class. Designing examinations which would assess only recent prose learning would appear
to decrease errors of omission. Adult educators need to realize that adults re-entering educational training programs are very confident in themselves when they choose to tackle a problem. This study leads one to also hypothesize that in situations in which the learner is given no choice, then the adult learner in particular would retreat into a more cautious mode of operation.

In general, it can be concluded that adults do not appear to be disadvantaged when presented with a learning task which requires reading and assimilation of content followed by a multiple choice test. However, there are also indications that prior knowledge has the possibility of making the learner more cautious if there is a degree of similarity between the past and present knowledge pools. Second, at this point there is no reason to assume cautiousness increases as one progresses through life. Levels of cautiousness are highly dependent upon the constraints established by the task thus making generalized statements about cautiousness and adults tenuous. Finally, middle-aged adults, whether they have continued with their education or not, are as confident in approaching a difficult multiple choice prose learning task as are the younger, scholastically experienced adults.
REFERENCE NOTES


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APPENDIX A:

LETTER TO IOWA STATE UNIVERSITY ADULT PARTICIPANTS
Mature students like you are returning to the classroom in great numbers all over the United States. These persons return to the classroom for many reasons: for adult education, to learn new hobbies, to develop new interests, to train for careers, and to learn for the sake of learning. This trend points up an important problem. In the past, most students have been either children or teenagers. We have a considerable amount of information available about how to teach young people, but we have almost no information about how to teach the older student. It is very important that the needs and characteristics of older students be studied.

We are interested in acquiring information on teaching and learning techniques with mature students. "We" are respectively a psychologist with a major interest in mature learners, and a psychology graduate student working on a dissertation on the topic. Specifically, the project concerns the best ways of helping adult students adjust to the pressure of examinations in the college setting.

In order to carry out this project, we need your help. You may remember how it felt to take examinations in your earlier educational experience, and you may wonder how you will react to your test experiences in college. The research task we are asking you to participate in will simulate an examination setting. From the results, it will be possible to give you some pertinent information relative to your test-taking skills in general; you will thus be helping yourself and contributing to an accumulation of knowledge in this area. Naturally, all research involvement will be completely anonymous. Details of the arrangements follow.

Sincerely,

Don C. Charles
Professor of Psychology

I need approximately one hour of your time. I sincerely hope that you will consider helping with this project. Please call me at the numbers listed below.
or fill out the enclosed postcard to indicate whether or not you are interested. I will phone you in a few days if you are interested to set up a meeting time which is convenient with you. If you have some questions, please indicate so on the card. I will be happy to discuss the project more with you so that you can make your decision. Thank you for your time--I am hoping to hear from you and I am looking forward to meeting you.

Sincerely,

[Signature]

Joanne (Jodi) B. Engel
Doctoral Student
Department of Psychology
Phone: 294-1742 or 232-5873

DCC:lik

Enclosure: Postcard
APPENDIX B:

FIRST ADVERTISING COPY SENT TO ISU DAILY
PARTICIPANTS WANTED: Thinking of returning to school? The ISU Psychology Department is seeking individuals between the ages of 25-55 who may be thinking of going back to school. The project concerns the best ways of helping adult students adjust to the pressure of examinations in the college setting. The task takes 1-1 1/2 hours. Prefer individuals who have not gone to college since high school graduation. Call Psychology Dept. 294-1742 or Jodi, 232-5873 for more information.
APPENDIX C:

ADVERTISING COPY SENT TO AMES DAILY TRIBUNE
Participants wanted: Thinking of returning to school? The ISU Psychology Dept. is seeking individuals between the ages 25-55 who may be thinking of going back to school. The project concerns the best ways of helping adult students adjust to the pressure of examination settings. The task takes 1-1½ hours. Prefer individuals who have not gone to college since high school graduation. Call Psychology Dept. 294-1742 or Jodi 232-5873 for more information.
APPENDIX D:

LETTER TO DMACC ADULT PARTICIPANTS
Mature students like you are returning to the classroom in great numbers all over the United States. These persons return to the classroom for many reasons: for adult education, to learn new hobbies, to develop new interests, to train for careers, and to learn for the sake of learning.

We at DMACC are interested in acquiring more information on teaching and learning techniques with mature students in order that we may serve you, the adult student, better. Therefore we are cooperating in a joint study with Iowa State University in order to seek clues which may help us better counsel you, the new adult student, in coping with test situations.

Since this invitation to cooperate is being issued to a select number of new adult students or students-to-be, we would appreciate your voluntary help with this project. The time commitment will be approximately 1½ to 2 hours. During that time you will take three sixteen question multiple choice tests based on three brief sets of readings which will be completed during the study session. You will also be asked to fill out a rating scale indicating the degree of confidence you have for each answer. Immediately after completion of the task, a project staff member will meet with you to discuss your results. Thus you will be able to receive some immediate information about whether your test taking patterns are predictive of success in general academic coursework. It has been our experience that some adults exhibit test taking patterns that may cause them to receive a mark lower than one they actually deserve simply because they have not yet developed their test taking skills. This study can tell you if you are exhibiting favorable or unfavorable test taking patterns in a multiple choice test taking situation.

If you can possibly volunteer, please select a session day and time that is convenient for you and call Nancy at 964-6350 to tell her you would like to participate. It is not necessary to provide your full name but we do need a count in order to provide an adequate amount of test materials. All information gathered will be confidential and, if you desire, anonymous. A map giving the room locations has been enclosed for your convenience. Thank you for your interest in this project.

"An Equal Opportunity Employer"
Sessions will be held in Building 6 on the following dates and times:

Session 1: Thursday April 19 1-3 p.m. Room 622
Session 2: Thursday April 19 7-9 p.m. Room 617
Session 3: Saturday April 21 9:30 a.m. Room 617

Again, all information is confidential and anonymous. Please call Nancy at 964-6350 to let her know which session you prefer to attend.

Sincerely,

Dennis Krehbiel
Special Services
Office of Student Life
DMACC

[Signature]

Jodi Engel
Iowa State University
PLEASE NOTE:

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

1. Glossy photographs
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10. Page(s) seem to be missing in numbering only as text follows
11. Poor carbon copy
12. Not original copy, several pages with blurred type
13. Appendix pages are poor copy
14. Original copy with light type
15. Curling and wrinkled pages
16. Other
Map of room locations:

Thurs. 4/19 1-3 p.m. Room 622
Thurs. 4/19 7-9 p.m. Room 617
Sat. 4/21 9:30 p.m. Room 617
APPENDIX E:

SECOND ADVERTISING COPY SENT TO ISU DAILY
ATTENTION ADULTS 25-55 YEARS OF AGE: A project surveying multiple choice test taking skills of non-college student adults needs your help. Takes 2 hours. Will pay you $8.00 for your time. Responses on task anonymous. Limited to 15. Must not have ever taken college courses and English must be native language. Call Jodi, 232-5873 anytime for time and place. Staff and student wives welcome.
APPENDIX F:

COMPLETE PROSE LEARNING TASK: CONDITION 1, FORM A
DIRECTIONS

You are well aware that examinations are highly important in college. The results of any test will determine, in great measure, whether you know the material. The results will also tell you something about yourself. If you pass with the grade you desire, you feel good about yourself. If you fail, you want to blame yourself, the book, the teacher, the situation and, perhaps, members of your family. Your entire future may well depend upon the results of any college examination at any given point in time. It is impossible to tell at what point a test will become that important to you but at some point a test can become the sole factor in determining whether you continue in college or not.

This is a study of how people going to college perform in examination situations. In the past, performance on this task has predicted the future academic success of people who have participated. If you do poorly on this test you are likely to encounter difficulty in your college courses.

Read all the concept pages carefully. At the end of every four pages will be sixteen multiple choice questions. Read the directions for each section carefully before answering any of the questions. Reading and following directions carefully is also an important test-taking skill. Answer all of the questions by placing a check (✓) on the line in front of the correct response.

At the end of each question you will be asked to rate how confident you are your answer is correct. Place an X on the line which is numbered from 1 (not at all confident) to 99 (very confident) indicating how confident you are your answer is correct.

Example: 1 X 99
(not confident) (very confident)

Start now to read the first section on learning theory in psychology.
INTERMITTENT REINFORCEMENT

Two monkeys have learned to turn a handle in order to deliver small pieces of food into a nearby cup. When hungry, both monkeys can be observed sitting by the handle and turning it for long periods in order to deliver enough food to satisfy their hunger. One monkey is rewarded with a piece of food every time the handle turns but the other has to turn its handle 10 times for each tidbit. Unexpectedly, the mechanism delivering the food jams and neither monkey receives anything for turning the handle until the trouble is corrected. The monkey which had been rewarded with food for every turn persists for a short time but soon gives up and wanders about its cage. The second monkey, however, sits at the handle for hours, turning it and looking toward the food cup. His tendency to continue turning the handle when food is no longer available is apparently far "stronger" even though the total reward for this behavior had been considerably less.

B. F. Skinner, a psychologist at Harvard University, would describe the behavior of the second monkey in terms of the effect of occasional reward, or as he calls it, intermittent reinforcement. Skinner demonstrated that after all reinforcement ceases those responses which have been learned under intermittent reinforcement will be maintained for longer than those responses learned under continuous reinforcement. Under continuous reinforcement a reward is given for every correct response, whereas under intermittent reinforcement some but not all correct responses are rewarded. If all reinforcement is stopped then behavior associated with that reinforcement will become less frequent and finally cease no matter what the previous reinforcement pattern was, but the progress towards stopping may be quite different.

Consider for example two rats trained to press a small bar in order to deliver a pellet of food into a tray. One rat receives a pellet with every bar press while the other has to press five times for each pellet. If the supply of pellets is completely stopped the second rat will continue pressing the bar without reward for much longer than the rat rewarded after every press. In studying the effects of intermittent reinforcement psychologists typically count the number of times a particular behavior is repeated after all rewards are stopped. When a response finally ceases it is said to have extinguished, and the number of responses made after the last reward is an indicator of resistance to extinction. For the psychologist it has been well established with both animal and human subjects, that intermittent reinforcement results in a greater resistance to extinction.
GENERALIZATION GRADIENTS

When people learn something, they usually just don't learn that specific thing, but also learn a number of other things as well. For example in learning addition, your teacher may have used examples like $19 + 27 =$ ____, $25 + 14 =$ ____, etc. You didn't just learn the answers to these questions but probably learned the answers to questions you hadn't seen before, maybe $47 + 83 =$ ____, even though you may have missed one like $953 + 1027 =$ ____. In fact now you can do addition problems that are very strange and unfamiliar: $1479831 + 1234785631210310421 =$ _________________. This situation, in which something learned is used in a number of different conditions, is quite common, but represents an important aspect of learning.

Kenneth Spence worked out a theory of this phenomenon which he called generalization. His theory was based on a notion of what he called a generalization gradient. According to this notion the more similar the new situation was to the old situation, the more likely it was that generalization or transfer would occur. Another way of saying this is to say that the probability of generalization is directly related to the similarity of the situations. Understanding generalization is very important because the ability to generalize is one thing that gives humans and animals their ability to adapt to new situations. This trait is clearly important to survival.

In some of the experiments Spence conducted, generalization gradients were clearly demonstrated. For example Spence had rats learn to press a bar when a yellow light was on. Later he tried rats on red, orange, green, and blue lights. They responded more often to the green and orange lights than to the red and blue. Psychologists have used generalization and generalization gradients to account for many interesting phenomena. For example the creativity of language, that is the fact that we understand sentences we have never heard before has been attributed to generalization. Generalization sometimes plays a role in development when emotional responses generalize to other individuals. Other psychologists have seen the influence of generalization gradients in the patterns of prejudice some people display.
If a hungry rat is placed in a maze it is usually very active and will move about and eventually arrive at the end of even a complicated series of twisting passages. If it finds a small amount of food at the end the rat will eat it. The rat may then be returned to the beginning of the maze and, still hungry and active, eventually finds its way to the end where a tiny piece of food has again been placed. Given many opportunities to repeat this performance the rat will eventually run directly to the food at the end of the maze without making any wrong turns or even without hesitating at choice points. The rat has learned the maze and acquired a new sequence of responses. One explanation for this learning is that each time the rat reaches the end of the maze and eats the food, there is a reduction in its hunger drive. Subsequently, this reduction in hunger drive strengthens the behavior that led to reaching the end of the maze and the food, and the rat is more likely to repeat that performance.

Clark Hull made an attempt to describe such learning processes as in the above example in terms of a formal drive-reduction theory. Whenever a response is closely followed by the reduction of a drive there is a strengthening of the connection between the response and the situation which led to that behavior. Hull pointed out that while a drive may not be fully eliminated there must be some reduction if learning is to take place. He describes drive as an internal state resulting from some need. Common examples of needs are hunger, thirst, and relief from pain or exertion. If an organism is thirsty this need for water produces a specific drive state which prompts that organism into activity. A sudden reduction in this drive state is rewarding and any action associated with this reduction tends to be repeated when that specific drive state reappears.

If a cat has not been given anything to drink for a long time and is then put in a cage with a saucer of milk placed nearby it will try to escape in order to reach the milk. It could try to reach through the bars, bite the cage door, or prowl restlessly around the cage. As it does these things it may accidentally bump against a lever which springs open the door and the cat can escape and reach the milk. If the cat is repeatedly returned to the cage it will soon be observed jumping about near the lever as it tries to escape to reach the milk. Hull's theory is a very complex one and other features, such as incentive motivation (that is, the size of the reward offered), play an important part. However, it is the rewarding effect from reducing specific drive conditions that has found a central position in his account of the learning process.
CLASSICAL CONDITIONING

If a cat placed in a harness notices a small light change color it does not usually raise its paw in response to this change. On the other hand if a mild electric shock is directed to its paw it will raise it every time. Raising its paw in the second case is an automatic reaction and does not seem to be under conscious control. An interesting observation can be made when these two situations are combined, with the light changing color immediately before the electric shock is delivered. At first the cat raises its paw only after it feels the electric shock but before long it will raise it as soon as it notices the light change color, before the electric shock is delivered. For a time at least, it will raise its paw as soon as the light changes color. In other words it has learned to raise its paw in response to a situation which did not formerly produce this behavior.

This occurrence is an example of classical conditioning, a procedure first described by the Russian, Ivan Pavlov. For Pavlov, the basic link in the learning process was the formation of an association between two events because they occurred closely together. Raising its paw when the cat felt an electric shock is what Pavlov called an automatic or unconditioned response. The electric shock is called an unconditioned stimulus. The light, which initially had no control over the cat's behavior, gradually acquires this control through frequent presentation slightly before the unconditioned stimulus. The light becomes what Pavlov called a conditioned stimulus because the cat had learned or become conditioned to respond to it.

In his best known experiments Pavlov studied the salivation response of a dog following the presentation of food and a ringing bell. By itself the ringing bell only startled the dog and had no effect on its tendency to salivate. On the other hand presentation of food caused the dog to salivate immediately. Then the two situations were combined. The bell was rung just before the food was presented and soon the dog was salivating when it heard the bell, before any food was presented. Classical conditioning always depends upon the power of any given stimulus to initially elicit a certain response. Because of this dependence on the way a subject will respond to a given stimulus, classical conditioning is often described as respondent behavior. This phenomenon is by now one of the best documented in psychology with literally hundreds of studies reporting classical conditioning in all manner of subjects -- animals, insects, birds, and even unborn babies!
On the following pages there are 16 multiple choice questions covering the material you have just read. Be sure to also mark your level of confidence in your response with an "X" for those you choose to answer.

TURN THE PAGE AND BEGIN. **DO NOT LOOK BACK INTO THE MATERIAL YOU JUST READ FOR HELP IN ANSWERING THE QUESTIONS!**
1. Which of the following best illustrates the concept of generalization gradients?

- **a.** One school child was taught to say yellow when shown a yellow patch. A second child learned to say blue to a blue patch. Both were then shown a green patch. The first child called it yellow and the second blue.
- **b.** Johnnie was able to solve division problems involving common fractions but did badly on problems involving decimal fractions.
- **c.** After studying O'Henry's short stories, Sally was able to recognize a surprise ending in novels but not in television shows she saw.
- **d.** A high school teacher could handle discipline problems in boys quite efficiently but was unable to deal effectively with girls.

2. Which of the following best illustrates the principle of classical conditioning?

- **a.** If everytime a parrot talks, its owner makes it flap its wings, the parrot will soon be flapping its wings instead of talking.
- **b.** Eating honey will cause a bear to salivate if it had salivated while eating honey in the past.
- **c.** If everytime an elephant is surprised when the wind blows, the elephant will soon appear surprised everytime the wind blows.
- **d.** A tapping sound is made before a light flashes. The light flashing causes Bill to blink his eyes. Bill soon blinks his eyes whenever he hears a tapping sound.

3. Which situation best illustrates a generalization gradient?

- **a.** When Chuck's mother bought a tall, narrow 10 gallon fish tank, Chuck complained it didn't hold as much water as the low and wide tank they already had.
- **b.** Richard failed to make the basketball squad because he was too small so he worked hard to win a cheerleaders position.
- **c.** Suzy becomes frightened whenever she sees a gun. Her boyfriend Homer takes her to see gangster movies a lot. Eventually Suzy got to feel afraid of Homer.
- **d.** If everytime a colt appears startled a humming noise is made, it will soon appear startled everytime it hears the humming noise.
4. Which of the following statements best reflects the concept of learning through drive reduction?

(a) When an organism is given a reward it will learn a new set of responses quicker than another organism which is not given a reward.
(b) When there is a reduction in the strength of a drive, the internal state of an organism is calmer and more conducive to learning a new response.
(c) An organism with any strong drive will learn a new response quicker and remember it for longer than will an organism with a weak drive.
(d) When an activity leads to the reduction of a drive, that activity is less likely to recur when the organism is confronted with the same circumstances in the future.

5. Which of the following situations best illustrates the principle of learning through drive reduction?

(a) A monkey fed every three minutes while working on a puzzle learned to solve it quicker than another monkey which was not fed at all during that time.
(b) A thirsty pigeon pecked at a red disc and a drop of water fell into a small cup nearby. The pigeon was soon observed pecking the disc again and quickly hopping over to the cup.
(c) A dog which had just been well fed was free from unsettling internal drive and learned a new trick more quickly.
(d) A hamster which had not been fed for two hours learned a maze quicker and remembered it longer than one not fed for four hours.

6. Which example is the best illustration of classical conditioning?

(a) A rat which had to press a bar five times for each pellet continued to press the bar longer when pellets were not available than a rat given a pellet after every bar press.
(b) A dog learned to make a difficult response more easily when it had been rewarded after every tenth attempt at jumping through a hoop.
(c) A parrot learned to talk more quickly when it was fed a piece of grain after every two or three attempts rather than after every attempt.
(d) A four year old boy was unable to tell the difference between circles and squares but an eight year old had learned to do this.
7. Which of the following situations best illustrates the principle of classical conditioning?

___ a. If every time a tiger jumps from one bench to another the trainer makes it sit up, the tiger will soon sit up instead of jumping.

___ b. If every time an owl blinks a gong is sounded, it will soon blink every time the gong is struck.

✓ c. A horse will appear startled if a loud noise is made behind it. If each time before the noise is made, the horse is shown a white flag it will soon look startled just with the appearance of the flag.

___ d. A monkey will salivate when food is presented if it has salivated while eating food in the past.

1 (not very confident) 99 (very confident)

8. Which of the following examples best illustrates the concept of learning through drive reduction?

___ a. An aspiring basketball player must spend hours practicing layups before she is able to make 95% of her shots.

___ b. Mrs. Jones tells Jim he must complete all of the assignment to get credit but later she gives him partial credit.

___ c. Mr. Smith wants Tara to improve the organization on her test papers. Early in the year, he gives Tara one or two bonus points for any improvement.

___ d. In questioning a witness during a trial, a lawyer was able to determine the witness was unsure of the time of day an event occurred.

1 (not very confident) 99 (very confident)

9. Which of the following summarizes what is meant by generalization gradient?

___ a. Anxiety produced energy is transferred to a less threatening object.

___ b. The closer the similarity in a new and old situation, the more likely that the organism will make the old response in a new setting.

___ c. Transfer of a new response to an old situation is positively related to the amount of discrepancy in the two situations.

___ d. To efficiently train an animal to learn a response successfully, closer and closer approximations of the response should be reinforced.

1 (not very confident) 99 (very confident)
10. Which of the following best illustrates the concept of intermittent reinforcement?
   a. A monkey will salivate when food is presented if it had salivated while eating food in the past.
   b. Eating honey three times a day will cause a bear to salivate every time it sees a honey tree.
   c. Jane was able to name six characteristics of a living cell by remembering the word "ceflit." She used each of the six letters to remind her of one of the characteristics.
   d. A dog which had just been fed was now free from unsettling internal drive and learned a new trick more quickly.

11. Which of the following best illustrates the concept of intermittent reinforcement?
   a. When the grain supply ran out, chickens which had earned a grain every time they pecked a disc promptly stopped pecking. Chickens which had been rewarded occasionally pecked away indefinitely without pause.
   b. A dog learned to make a difficult response more easily when it had been rewarded after every tenth attempt rather than continuously while training.
   c. A dolphin was given a piece of fish for every third jump through a hoop. A second dolphin was given a piece after every jump. When fish was no longer provided, the first dolphin continued to jump for longer than the second.
   d. A parrot learned to talk more quickly when it was fed a piece of grain after every two or three attempts rather than after every attempt.

12. Which is the clearest example of the concept of intermittent reinforcement?
   a. If you get a Coke in the Physics building and always get a Coke from the machine, you may not try again if you didn't get a Coke for your quarter. However, if you usually get Coke from the machine in the Quad (a machine with an irregular reputation for taking quarters and not giving Coke) you may try a second time at the Quad machine.
   b. When food is no longer given to a monkey who received food after every turn of a handle, he will soon stop turning the handle.
   c. Mr. Willis persisted in wanting to live in the Shadowbrook part of town until his wife insisted he go over one morning to hear how loud the train sounded at 3 a.m.
   d. In playing a game of battleship, Gary complained Keith got too many points. Later Gary choose not to participate in a pong tournament held for a charity drive while Keith enthusiastically participated.
13. Which of the following situations best reflects behavior following training under intermittent reinforcement?

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a. A raccoon which had been rewarded with a pellet of food every time it pressed a bar promptly stopped pressing when the food supply ceased. A raccoon which had been rewarded occasionally pressed the bar indefinitely without pause.

b. A chimpanzee learned to solve a complex puzzle more easily when it was rewarded after every three or four attempts rather than after every attempt.

c. An animal trainer was able to teach a dog a new trick more quickly when it was rewarded after every tenth attempt rather than continuously while training.

d. A canary which had to peck a key ten times to obtain a grain of wheat continued to peck at the key even when all the grain was gone far longer than a canary which had received a grain after every peck.

(very confident)

(not very confident)

14. Which of the following situations best illustrates the principle of learning through drive reduction?

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a. A dog given extra food during the time period it was practicing a new trick learned to perform it quicker than one which had only its regular meal.

b. A small piece of fruit fell into his food dish when a hungry monkey bumped against a lever at the end of his cage. Soon after he had eaten his food the monkey began jumping about near the lever again.

c. A thirsty pigeon learned to peck a disc for water more quickly and remembered this response for longer than a pigeon which had just been drinking.

d. After eating their daily meal the big cats seemed more settled and performed better for their trainer.

(not very confident)

(very confident)

15. Which situation is the best example of a generalization gradient?

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a. A rat learns a maze which involves two turns to the left. Later he quickly solves a maze that has two turns to the right but does badly on one involving four left turns.

b. Cats quickly learn to avoid foods that have been poisoned with a chemical that produces stomach upset, but have difficulty learning to press a lever to avoid a shock.

c. A dog is trained to go outside the house by being punished for "accidents." Later he turns out to be a good pointer in hunting but always chews up the birds he retrieves.

d. An elephant raises his trunk to greet the zookeeper who feeds him but not for the child who brings him peanuts.

(not very confident)

(very confident)
16. Which example best illustrates the concept of classical conditioning?

_____a. A music teacher first reinforces a child for making any kind of noise with the violin. Later she gives praise when the song is recognizable.

_____b. After playing a game of tennis, Jack stops at a ice cream place and quenches his thirst with a great tasting banana milkshake. The third time after he plays tennis he returns to the ice cream place again.

_____c. A hamster which had not been fed for four hours learned a maze quicker and remembered it longer than one not fed for two hours.

_____d. A pigeon is taught to play ping-pong by being reinforced first for touching the ping-pong ball, then hitting it and finally for hitting it on the rebound.

(not very confident) (very confident)
THE NEUROTIC NUCLEUS

The neurotic nucleus is a circular process in which the individual feels basically inadequate, evaluates everyday problems as threatening and attempts to deal with the anxiety by avoidance and defense oriented reactions. Imagine that a young man is very much in love with a woman. They are engaged and have made wedding plans. However, she meets someone else to whom she is greatly attracted and abruptly breaks the relationship terminating their engagement. After this event, the young man reacts with anxiety to close relationships with members of the opposite sex.

The neurotic feels basically inadequate, dreads competitive situations, over-reacts to minor setbacks and failures, becomes defensive and avoidant, has no concern for others and finally, recognizes the irrationality of his own behavior. The world is perceived as a dangerous and hostile place. In essence the neurotic is enmeshed in a quagmire of covering up, defending, escaping and avoiding...coping behavior that leads to rigid, egocentric and self-defeating behavior. Most energies are focused on clinging rigidly to the defenses one has been able to erect. Usually the neurotic vaguely senses that something is missing, that they are not fulfilling themselves or leading a truly meaningful life.

A successful dentist noticed that his practice had declined during the closing months of the year. Later he began to experience mild anxiety attacks and complained of continual worry, difficulty in sleeping and a vague dread that he was failing. As a result, he increased his hours of practice and built the practice into more than it was previously. Yet he was still haunted by these worries of failure. At this point he began to seek assistance from the clinic.
In most groups you find quite different personality types. Some seem to really enjoy being with others, readily accepting the values of the group, and actively seeking the excitement and bustle of many activities. Even after a hard day at school Helen always enjoys the chatter and company at the corner drug store. On the other hand there may be some whose behavior seems almost the opposite. Irene, for example, loves to go straight home to relax quietly for awhile. She is typical of those who belong to a group because the school or club arranged it that way but who really prefer to work alone. Such personality types seem to prefer intellectual amusements and certainly do not care to be organized into group sporting or social activities.

Carl Jung, the Swiss psychologist, was responsible for a formal description of two such fundamental personality types, the extrovert and the introvert. Jung distinguished between two major attitudes towards life which he felt represented essentially inborn differences in a person's behavior. The attitude of extroversion directs a person toward the external objective world, while the attitude of introversion focuses attention upon the inner subjective world. The extrovert is normally described as a candid and outgoing person who makes friends rather easily, responds spontaneously to problems, and is not easily depressed if things appear to be going badly. The introvert does not allow himself to become easily involved with other people and will not accept the values of a group simply to please others but will make his own decisions after careful deliberation. At the same time he is often very self-critical but will only reveal these feelings to a few close friends. In short, one stresses the objective, bustling, outside world; the other, the subjective, thoughtful, internal world.

Such differences can be seen to some extent in almost any situation where people are grouped together for some time. For example, more than anyone else in the office Harry loved to organize social outings but Edward always found some excuse for avoiding these occasions in favor of doing something on his own. As with all personality types it would be very difficult to find one person who fitted either description perfectly since most individuals are neither extrovert nor introvert but are a mixture, or ambivert. Ambiverts combine to some degree or other the characteristics of the two extremes and most people can readily see something of the extrovert and introvert in themselves.
We are always setting goals for ourselves to reach. Some of these are long term projects such as studying to become a lawyer, while others are more immediate, such as making the school basketball squad. Failure to reach a goal which a person feels is important may leave that person feeling very dissatisfied. It may lead some to feel inadequate, and often worried or anxious about their ability to succeed in future projects. One way of avoiding or reducing this unpleasant state is to substitute other goals which are more or less similar to the original one. For example, although Richard failed to make the basketball squad because he was too small, he worked hard to win a cheer-leader's position.

Sigmund Freud gave this process of avoiding anxiety the clinical term displacement. He pointed out that when an original goal is unattainable the psychological energy involved is directed toward substitute goals. Freud noted that if this new goal is also out of reach then another displacement takes place, and perhaps another and another, until a goal is found which can be successfully attained. It is possible that several displacements may lead to a goal quite removed from and apparently unrelated to the original. For example, Neal Johnson was disappointed when he had to give up studying law to become a teacher but he worked hard to put his son through law school.

Freud was particularly interested in studying the direction that a displacement took. He noted that a substitute goal is rarely as satisfying as the original choice and he reasoned that many displacements resulted in a growth of undischarged tension constantly seeking an outlet. Freud felt this accounted for the great diversity of interests in man as well as his restlessness. Sometimes the energy from an unattainable major goal, such as a particular career, or a desirable marriage partner, may be displaced into many new channels. A person's interests in sports, literature, hobbies, politics or academic study may all be affected by the displacement of unrelieved tension from the failure to reach some ideal goal.
People are often unwilling to face and acknowledge what they really believe to be true about themselves. One of the ways in which the anxiety or fear over these beliefs is handled is by attributing the belief to someone else. This procedure is so common that we all recognize the technique. For example, one of the most common experiences of motherhood is to have one of your children say, "He started the fight, Mom, not me." While in this case, the child may be motivated by the desire to avoid punishment, often an unwillingness to acknowledge the belief is the motivation for the phenomenon. For some individuals this technique can be carried to pathological extremes resulting in acute mental disturbance.

This phenomenon is technically called projection. John Conger, a prominent adolescent psychologist, says projection occurs whenever an unacceptable feeling or impulse is acknowledged, but attributed to another source. Projection interferes with the accurate perception of reality and can lead to confusion over the real feelings one has. Projection almost always occurs only when feelings that the individual regards as bad are involved, but it is theoretically possible to have projection of good feelings or qualities. One example of this may be when people expect public figures to be more moral and upstanding than the people themselves. In this sense the voters are projecting desired good characteristics onto prominent individuals.

Projection is only one of several ways people handle bad feelings about themselves. When we try to understand a single individual's behavior we usually end up seeing some projection as well as other techniques for handling anxiety. Almost all so-called normal individuals project sometimes; moderate amounts of projection seem to be part of the pattern of normal living. However when an individual begins projecting much of the time and finding bad qualities in most of the people around him we can expect more serious psychological problems to emerge.
Following are 16 multiple choice questions covering the material you have just read. Answer all the questions even if you have to guess. Remember to guess if you are not sure what the answer is to be. Indicate your level of confidence in your response with an "X" for those you choose to answer.

Turn the page and begin. Do not look back into the material you just read for help in answering the questions!!
1. Which of the following best illustrates the concept of projection?
   a. After Johnny won the tennis tournament he spent a great deal of time imagining himself as a world famous tennis champion.
   b. Sally's mother had wanted to be a ballerina so Sally started dancing lessons at age 3.
   c. When David didn't get the highest mark on a test, he accused the top student of cheating.
   d. Mrs. Smith was afraid she would get fat but she always nagged her husband about eating too much.

2. Which of the following best illustrates the concept of the neurotic nucleus?
   a. Kiri lost the badminton tournament. She didn't play again for three months.
   b. The softball team played and lost in the consolation round. They immediately blamed the official then went on a charity tour.
   c. Don had worked hard on his paper. When his editor told him to re-write a portion of it he left town and never came back.
   d. Sally's club had a bad experience working in a prison. After that they spent their time in the local hospital pediatric wing.

3. Which of the following situations best illustrates the principle of displacement?
   a. Mr. Dupont decided that as a bus driver he was failing to develop his painting talent so he decided to put himself through art school.
   b. Joan was not a good pianist but she developed a keen interest in swimming, history, modern art, jazz and public speaking.
   c. Peter failed to make the baseball team so he decided to give up gymnastics to spend more time practicing his pitching.
   d. When punished for sucking his thumb, Timmy stopped that habit but spent hours chewing gum given him by his grandmother.
4. Which situation best illustrates the concept of projection?

   a. A thirsty cat bumps into a lever and escapes from a cage to reach a saucer of milk. The cat is returned to the cage but is soon observed jumping near the lever again.

   b. A child is bitten by a small dog. Later the child cries when he sees a neighbor's cat but not when his friend brings over a hamster.

   c. A hungry rat finds and eats a small piece of food at the end of a maze. The rat is returned to the start of the maze but is soon observed running towards the end point again.

   d. A young soldier doesn't want to admit he is frightened in battle so he accuses his platoon leader of being too brave.

5. Which of the following best illustrates the principle of displacement?

   a. Sam desires a souped-up car more than anything else. At night he dreams how others will react to him and imagines his popularity will increase if he acquires the car.

   b. Johnny was able to solve division problems involving common fractions but did badly on problems involving decimal fractions.

   c. An elephant raises his trunk to greet the zookeeper when the zookeeper brings food and raises it for the child bringing peanuts as well.

   d. A child is stung by a bee. Later this child demonstrates a high interest in collecting insects.

6. Which of the following best illustrates the concept of the neurotic nucleus?

   a. Chris spent months completing a weaving for the art competition. When it took second place, Chris wrote letters to the jurors and press complaining of duplicity in the judging.

   b. Sally was upset that the mortgage was to be foreclosed on the farm so she arranged for a private farm sale first.

   c. Kelly's team admitted they were angry with the city for closing the park so they disbanded.

   d. Coco, a cat, began to growl and jump at the birds hopping outside on the windowsill. Coco even snarled at birds on television.
7. Which of the following situations best illustrates the concept of extroversion-introversion?

a. After a hard day at school, Helen always enjoyed the chatter and company at the corner drug store but Irene loved to go over to the gym and play a pick-up game of basketball.

b. When Arnold goes to the office to work, he never seems to get any work done because he always spends his time talking with people. Jack is friendly if people speak to him.

c. Because he had been fat and ugly, a young man never achieved the social success he wanted as a child and teenager. As an adult he turned to a life of violent crime.

d. Sam entered the class anxious to start a new life and began to chat with the students on both sides. Jacque, from France, entered the room and sat silently in the back row.

(not very confident) (very confident)

3. The concept of the neurotic nucleus is best exemplified by which of the following examples?

a. Alex, a teacher, ran for office in the teachers union. When calls for a strike came, Alex began to feel anxious. He tried harder than ever in his teaching in order to not let his feelings hurt the progress of his students.

b. Buleah stormed around the factory tearing down posters hung for a pro-union group. When confronted by her superiors with a memo about freedom of speech, she refused to admit wrong-doing and continued to tear down the posters.

c. Smitty continually invented stories about his prowess during the war. During a reunion he got caught in some lies and laughed it off with the rest of his platoon.

d. Sally was so bored at home she color coded the towels in the closet and yelled at the kids whenever they left anything lying about. How she is active in hospital work and enjoys this challenging activity.

(not very confident) (very confident)

9. Which of the following situations best illustrates the principle of displacement?

a. When Carol failed to find any satisfaction in her routine office job she began to take night classes to qualify as a social worker.

b. Not one of Pam's entries in the art contest won a prize so she decided that she would drop out from the school choir in order to give more attention to her painting.

✓c. Steve Peterson just could not afford a sports car but he made sure his model car collection was the finest and most up to date in the whole town.

d. Although he did not care for schoolwork, John developed an active interest in sports and tinkering with his car.
10. Which of the following situations best illustrates the principle of extroversion-introversion?

a. Mary's first day at school was a happy one and she looked forward to going the next day. June had been reprimanded for her constant chatter and she was reluctant to reappear.

b. After the car accident Bill called his friends and they worked on the fender all afternoon. Tom felt depressed at his own carelessness hitting Bill's car and shut himself in his room.

c. At the social club meetings the men frankly discussed the issues but the women as always were more retiring and hesitated to speak.

d. The boys from the highest academic track did not take part in group social and sports events. These school activities were managed happily by boys with less academic interests.

11. Which of the following represents an example of projection?

a. Mr. Falcone, who was very short, subscribed to many he-man magazines.

b. Jim Balba accused his wife of adultery after he had had an affair.

c. Betty's parents were very strict so she refused to accept the existence of sex and became an old maid.

d. Judy used to spend a great deal of time imagining herself as an old maid.

12. Which of the following represents an example of projection?

a. When a baseball mitt he had wanted badly disappears from his father's store, Pete accuses his older sister of stealing it.

b. A man eats a meal at a Chinese restaurant. One hour later he is ill with vomiting and upset stomach. The next day he is able to conclude a deal with a Japanese businessman but feels ill watching a Kung-Fu movie set in Hong Kong.

c. Voters expect politicians to be more moral and strict in their behavior than the voters themselves.

d. On a test, the chemistry student was able to remember that a certain law dealt with the way atoms combine to form molecules but was unable to remember the chemist's name which was associated with the law.
13. Which of the following best exemplifies the neurotic nucleus?

a. Sue had an embarrassing encounter with a boy. Whenever she saw him coming after that she avoided him but did go out with others.

b. Sam lost the swim race so he angrily quit the swim team and began to participate in cross country track.

c. Keith lied so much it was hard to tell truth from fiction. Later Keith made up for this by making time for working with the local community service club.

d. Philip took sleeping pills every night. Later his friend found him dead.

1 (not very confident) 99 (very confident)

14. Which provides the best example for the concepts of introversion-extroversion?

a. Mildred would speak about her deep thoughts with no one but God. Charlton travelled from area to area and never remained at a job longer than a year because he claimed he enjoyed the challenge.

b. Although Helene appeared to be a bright child she never did well in school either academically or socially. Mike, on the other hand, excelled academically and became very, very upset when ignored socially.

c. Comrey prefers to read about a thing rather than experience it while Michale has a background of many job contacts in a relatively short period of time.

d. Meredith feels comfortable with people she has never met while Eugene sometimes enjoys the company of familiar friends.

1 (not very confident) 99 (very confident)

15. Which best illustrates the principle of displacement?

a. Sam enjoys eating and does this at every opportunity.

b. Joan was married three times before she found the perfect husband.

c. A young soldier didn't want to admit he is frightened in battle so he prayed a lot.

d. When old people think back on their youth they only remember the good times.

1 (not very confident) 99 (very confident)
16. Which of the following situations best illustrates the concept of extroversion-introversion?

a. The successful scholars in the class did not like to play team sports because they did not enjoy taking part in organized activities with others. Most team members were less successful at schoolwork.

b. Ron and Andy soon made friends with their new neighbors but like all girls their sisters were more hesitant to make the first move.

c. Following the final examination Nancy and her friends enjoyed a meal together and went to a movie. Jean treated herself to an expensive dinner and relaxed in front of the television.

d. Susan was anxious to begin her second dance lesson because her group had been so friendly. Francis had found the routine rather boring and wished she could avoid going.

(not very confident) (very confident)
LEARNED HELPLESSNESS

In learned helplessness experiments Seligman and his associates have repeatedly shown that traumatic experiences in a dog's life can render the dog a completely passive, helpless creature. In the procedure the dog is placed into a Pavlovian harness and given an electric shock that is traumatic but not physically damaging. Later the dogs are put into a two compartment box where they are supposed to learn to escape shock simply by jumping from an electrified section of the box to a non-electrified section. It was found that if the harnessed dog first experienced shock over which it had no control the dog's behavior became quite bizarre when it was put into the two compartment box. It simply sat and whined and did not try to jump the barrier. A dog that has received no previous shock does learn to jump over to the non-electrified section of the box rather quickly.

Knowing something tends to facilitate control. When people do not know what is to transpire in their future and thus are unable to plan accordingly, they cannot exercise control. This concept termed learned helplessness is not an isolated phenomenon. Over the last decade it has been reported by a number of investigators in a number of different species of animals. There is a close parallel between this behavior and depression in humans. Types of events that set off depression are similar to those that set off the learned helplessness phenomenon. Cure for depression comes when individuals come to believe they are not helpless. Symptoms of human depression that seem to parallel the behavior of learned helplessness are passivity (slow response initiation and low amplitude of behavior), negative expectations (depressed persons often construe their actions as having failed or as being futile), and helplessness, hopelessness and powerlessness. The cognitive set of individuals is such that they feel they have little control over events in their lives.

A woman assigned by the courts to visit the Health Clinic expressed these thoughts to the counselor after having watched her child receive an unwanted beating from her husband, "I tried to cope with my situation but nothing I did made a difference. I finally lost hope and just gave up."
Let us suppose that five Pentagon officials individually made a decision about the desirability of direct confrontation with a foreign power. The most risky decision would be a massive confrontation that would result in either external world peace or an international nuclear war. If, after making their individual decisions, the officials met in conference and made an official decision more risky than the average of their individual decisions, a risky shift would have taken place. Such changes have been shown in a variety of situations.

In spite of the robustness of risky shift in various situations, it does not occur in all situations. Roger Brown proposed that any problem situation engages cultural values of risk and caution. If it engages the risk value more strongly than the caution value, individuals making individual decisions about a problem will make a decision they think is risky relative to the decision made by others. After a while, of course, individual members stop trying to be more risky than others in the group because while riskiness is valued, fool-hardiness is not. Using some dilemmas of choice items, Stoner developed six stories that would produce risky shift and six that would induce a conservative shift. According to the hypothesis, subjects should see themselves as more risky on the risky items and more conservative on the conservative items. Subjects saw themselves as risky on the risky items but as conservative on only two of the six conservative items. Those producing a conservative shift involved similar values: one was the value of "your own life," and the other the value of the "physical safety of your husband/wife."

One can think of risky shift in terms of social comparison processes. Just as an individual practices his tennis game because there is a cultural value placed on being slightly better than other people, he changes his risk level in the direction valued by the culture so he can feel he is slightly better than his peers. This does not mean that the individual automatically changes his risk level but that he reinterprets elements in the situation and focuses on arguments favoring risk.
Attribution Theory

Attribution refers to the assignment of causes to events. The basic question being asked is "Why did that effect occur?" By attributional approaches we seek to understand how the individual goes about answering this question and the conditions that lead to certain answers as opposed to others. Imagine that a teacher is surprised that an average student obtained the highest score on a major mid-term math test. The teacher has to decide if the achievement was due to hard work or was it possible for the student to cheat. The need to be able to explain phenomena is a core process in our lives and requires the use of attributional processes.

Heider and Kelley claimed that the reason people search for explanations for events is so they can exercise control over events that occur in his or her life. There is no one grand attribution theory; rather, there is a collection of attributional approaches each more or less focused on a given set or class of social phenomena. Each of the approaches shares the emphasis on causal attribution as an important determinant or mediator of behavior or as an important consequence of some state of affairs. Each also shares some measure of the use of the analog of scientific thinking. The present focus of attribution theory is on factors involved in an individual's attempt to understand events in their own lives including their own actions and actions taken by others. The main tenant of attribution theory is that our cognitions, expectations and actions are based on a mastery of the causal network of the environment. Attributions are always made after some event has occurred. Attributional decisions are also made after careful consideration of the circumstances surrounding the event as well as prior history.

A humorous example of an attributional thought process in action is exemplified by this experience. A driver left a car unattended. It rolled away. Upon returning from the store, the driver explained to the police investigator, "I left my car unattended for a minute when by accident or design it ran away and collided with the stationary tree standing right here."
SOCIAL METHODS OF DESENSITIZATION

What are the social factors that induce man to engage in warfare? Society desensitizes people to war making it more acceptable and justifiable to the people taught to engage in it. Harry was a foot soldier in Viet Nam. Ten years later he is still having nightmares and clearly remembers the faces of both the enemies he was required to kill and his friends who died in battle. Bill was a bomber pilot over Viet Nam. He has re-adjusted to civilian life and cannot understand why people like Harry cannot "make it" in civilian life.

Roger Johnson has investigated this phenomenon and has concluded that levels of desensitization must exist whenever humans must fight humans in a warring situation. Advanced technology has made the atrocities of war more tolerable by removing the people that commit them from the scene of the action. The long range weapons, remote control buttons and the pilots who drop the bombs are all removed from the consequences of their actions. Detachment from the death and destruction in this instance is easier than if one is asked to commit the same actions face to face with the enemy. Pilots who bombed South Viet Nam were sent to Hong Kong, Japan and Australia on leave rather than being allowed to stay in Viet Nam to see the casualties of their bombing.

Tim worked for a major news network in Viet Nam and filed many reports of the war. Although not directly involved in the conflict, Tim became used to filming some unbelievable scenes and events. After filing a particularly brutal piece of film, Tim was recalled to the States by his editors who complained they could no longer air his pieces of film due to the inhumanity of the content. It was months before Time realized how desensitized the war had made him and, as he surveyed his stories of the past two years in chronological order, he finally recognized the changes which had taken place in his choice of stories. After repeated viewings of extreme violence, one's emotional reaction may become nothing more than that engendered by another episode in a police-detective series on television.
Following are 16 multiple choice questions covering the material you have just read. **DO NOT GUESS** ---

**ANSWER ONLY IF YOU ARE SURE YOU ARE RIGHT!!!**

Indicate your level of confidence in your response with an "X" for those you choose to answer.

**TURN THE PAGE AND BEGIN. DO NOT LOOK BACK INTO THE MATERIAL YOU JUST READ FOR HELP IN ANSWERING THE QUESTIONS!!**
1. Which of the following situations best illustrates the concept of desensitization?
   a. Quincy systematically views corpses daily. The police artist, however does not care to work with Quincy.
   b. Use of a buzzer system to successfully treat bedwetters by waking them when the first few drops of urine appear worked to help Nathan stop wetting the bed at night. Beth, however, slept through the alarm
   c. Joan wanted to quit smoking so she removed herself from parties and drinking situations so she wouldn't be tempted.
   d. Jack, a prison inmate, received a token each time he engaged in an academic endeavor. Soon the tokens weren't necessary and Jack continued to learn.

2. Which of the following scenarios best illustrates the concept of desensitization?
   a. Fluffy, a poodle, always yelped at night. Her mistress left the light on. Next she put a flashlight in the bed with Fluffy. Now Fluffy doesn't yelp at night.
   b. Sam tightens brake bolts in an automobile factory. During Sam's first year he made sure each bolt was tight in order to prevent later accidents. He was rushed one day and tightened the bolt only half-way. He didn't bother to report it to his supervisor.
   c. Eleanor worked in the staffing room of the CIA as the only female liason. In the beginning she was very conscious about her presence. She feels comfortable at work now.
   d. Jack was feeling low. He left the party thinking "Nobody loves me." Then he met Jane who adored him. His interest in parties was rekindled.

3. Which best exemplifies the concept of a risky shift?
   a. Jack knew a tequila sunrise gave him a headache but all the guys were drinking them. Jack had one and was sick the next day.
   b. The weather forecast predicted rain but the sun was shining brightly so Dick did not take an umbrella. When he arrived home he was soaking wet and angry.
   c. The tire had little tread but Nancy had no money to buy new ones. She kept riding on the progressively balding tires. Her brother, Ray, offered to loan her money to buy new ones but Nancy continued to ride on the old tires until her next pay check.
   d. Kitty decided to enter the marathon even though her doctor said her knee hadn't healed. Kitty started the race and dropped out halfway through.
4. Which best exemplifies the concept of a risky shift?

a. Hal had the choice of a job overseas for $36,000 a year which would separate him from his family for 6 months or one at home for $15,000. He choose the $15,000 saying another option will come later.

b. The pilot had a half-hours fuel left and had to decide to go back against the wind to an airport 25 minutes away or cross the mountain and try to catch a tail wind and land at a field 35 minutes the other direction. He voted in favor of turning back but the crew convinced him to cross the mountain in case they could land with the help of the tail wind.

c. The doctor was stuck in the snow as the nervous father-to-be paced in the living room. As his wife cried out, he decided it was no use and began to boil water and get scissors and clean towels ready.

d. The gas tank was close to empty but Sam wouldn't pay 75¢ a gallon for gas in the small town. Five hours later he hiked back with a gas can grateful the station was open and would sell gas at any price.

5. Which example best illustrates the concepts explained by attribution?

a. The dog was always fed by five o'clock. By seven there was still no food so the dog tore open the sack himself.

b. The babysitter promised the children a story. They then watched TV and it got late. The sitter put two sad children to bed and reasoned it was just too late for the promised bedtime story.

c. The supervisor wanted to promote a fine employee. It was vetoed by the personnel manager. The supervisor never forgave the personnel manager.

d. Even before the television survey on stereotyping began, James knew what the outcome would be and began to act accordingly.

6. Which illustration describes the concept of learned helplessness?

a. Ham ate and ate until he joined Weight Watchers.

b. ALANON really helped Katherine's teenaged children even though her drinking problem still persisted.

c. Linda often complained her major professor was too much of a perfectionist but she stayed with her just the same.

d. After two weeks of snow and no contact with the outside world Bud and his family were very much on edge.
7. Which of the following situations best defines the concept of attribution theory?

   a. When Jud starts his car he pumps the gas pedal three times, pulls out the choke, turns off the radio and turns the key. It usually starts. His wife can never get it started.

   b. When Sam, a beagle, is hungry he turns around three times while in the kitchen. Food always appears.

   c. Before a test, Maryann always chews gum. Today, on her way to the exam she even borrowed money from a classmate to buy a pack.

   d. Jessica left for work with the clothes washer still running. When she came home she found the laundry room flooded. She quickly declared she had no idea what had happened.

___ a. (very confident)  b.  c.  d. (not very confident)

8. Which of the following best illustrates the notion of social desensitization?

   a. Sarah was convinced she was alone in the world. At first it hurt to be alone but now she rocks back and forth in silence oblivious to her surroundings.

   b. The attentiveness of their five year old to the television ads bothered Bill and Jane. When their daughter was seven, she ignored and criticized them.

   c. Gina was a French correspondent in Viet Nam. Home now, she leaves the pressroom whenever a particularly violent news story appears on the teletype.

   d. Insects were a way of life for Mal who lived in an urban slum as a child. Now, twenty years later, Mal insists his wife maintain a spotless home.

___ a. (very confident)  b.  c.  d. (not very confident)

9. Which situation best exemplifies the concept of learned helplessness?

   a. The horse felt a 200 pound bag on its back. At first it bucked but couldn't get rid of it. Finally it stopped bucking and walked about.

   b. The Xerox machine was used a lot. Today it was broken and the secretaries found they didn't have much to do.

   c. Sam drank a lot and, as a result, lost his job, family and friends.

   d. Since being laid off eight months ago, Alice felt listless and angry. So she began to paint in earnest.

___ a. (very confident)  b.  c.  d. (not very confident)
10. Which of the following situations best exemplifies attribution theory in action?

___ a. Mr. Wersek, a physics teacher, saw a foreign sounding name on the class enrollment list. He immediately identified the student as a problem.

___ b. Nothing was going right for Alex. Then he remembered he got out of bed on the wrong side. That made him madder than ever.

___ c. Jed was promised his car back from the service center on Monday. When he went Tuesday it still hadn't been touched. They told him why it wasn't ready but Jed called his lawyer anyway.

___ d. Ajalo saw the sun go black in the sky. He cried even though his parents told him not to worry.

1 (not very confident) __ 99 (very confident)

11. Which example best illustrates the concept of desensitization?

___ a. Sally is afraid of speaking in front of a group. By practicing in front of her two roomies she is able to gain enough confidence to complete her required speech course.

___ b. Gergan felt frightened whenever it was time to take an exam so he learned to chew gum before each test.

___ c. Bill was a policeman who used to become violently ill when investigating a car accident. Now Bill investigates the incident then stops by the bar on his way home to relax.

___ d. Suzy never meant to cry in front of her instructor but the low grade on her test bothered her. Now Suzy does relaxation exercises before an exam and her grades aren't as low.

1 (not very confident) __ 99 (very confident)

12. Which best illustrates the concept of a risky shift?

___ a. The Bombadeers, a motorcycle club, decided to ride through a campground one evening. Slim decided not to go because he had heard the police had been tipped off.

___ b. Matilda had to make a decision whether to keep her baby or give it up for adoption. Her parents wanted her to keep the child but Matilda decided adoption was best.

___ c. The Spanish club had a steadily declining roster. They had to decide whether to raise initiation fees to $5.00 in order to pay the bills or to keep the fees low and risk financial problems. A ballot indicated a fee change to $3.00 but after much discussion fees were set at $3.50.

___ d. Sam, who had been laid off from work for 3 months, had to decide whether to listen to his child cough or shoplift some medicine. He decided to steal the medicine.

1 (not very confident) __ 99 (very confident)
13. Which of the following scenarios best illustrates the concept of learned helplessness?

- **a.** Three men met Bill one evening and demanded his wallet. Even though he had a knife, Bill gave it to them.
- **b.** Silly, a dog, had been treated very cruelly by a previous master and was totally untrained. After weeks of patient love, Silly learned to behave for her new master.
- **c.** Always told by her father she was fat, Brenda never participated in swimming activities until after she went on a badly needed diet.
- **d.** In spite of the tremendous demands on her time, Mildred always found time to jog and meditate.

(not very confident) (very confident)

14. What situation best exemplifies the concept of learned helplessness?

- **a.** No matter what Susan did she couldn't get better than a "C" on any chemistry test. She finally stopped spending so much time on chemistry and devoted her energies towards her other classes.
- **b.** Nicky kept trying to avoid the drugs readily available in his neighborhood. After being swept up in a raid by mistake he was thrown in jail where he became a patsy for everyone else in prison.
- **c.** Mrs. Smith loved anagrams. Her husband brought home several for her that, unknown to her, were unsolvable. After she worked on them for several days she gave up.
- **d.** Marjorie finished her term paper but received it back with the comment "Re-do or take an F." Marjorie took the "F" and changed her major.

(not very confident) (very confident)

15. Which of the following examples best illustrates attribution theory?

- **a.** Lee just moved to the city. At school she received the lowest grade on the math test. The teacher couldn't decide what to do.
- **b.** Butch never went anywhere without his rabbit foot. He claimed to be lost without it.
- **c.** Before the test Cynthia got sick. She knew then that she would not do well on the exam.
- **d.** John couldn't decide between the blue Ford or the red Chevy. After he purchased the Ford he realized all the faults he found in the Chevy.

(not very confident) (very confident)
16. Which exemplifies the concept of a risky shift?

_____ a. The tigers hadn't been fed but Gunner decided to perform anyway. He barely escaped with his life and vowed never to go inside the cages before feeding them again.

_____ b. Josan thought he was Superman and even though his mother kept telling him people couldn't fly like that, Josan climbed on the roof to try anyway.

_____ c. It was Chuck's last exam in college. He was doing well in the course so he didn't prepare much. Then, twelve hours before the exam, he changed his mind and crammed. He passed with an "A."

_____ d. Judy and Paul were packing up their china for a cross country move. Paul wanted to hire a moving company but Judy wanted to do it herself. Judy had her way.

(not very confident) (very confident)

WHEN YOU HAVE COMPLETED THIS MUCH OF THE TASK, REMAIN IN YOUR SEAT AND RAISE YOUR HAND. THERE IS ONE MORE PART WHICH SHOULD TAKE NO LONGER THAN TEN MINUTES. THANK YOU FOR YOUR PATIENT COOPERATION!
APPENDIX G:

FORM A QUESTION SETS FOR EACH PASSAGE SET
1. Which of the following best illustrates the concept of generalization gradients?
   a. One school child was taught to say yellow when shown a yellow patch. A second child learned to say blue to a blue patch. Both were then shown a green patch. The first child called it yellow and the second blue.
   b. Johnnie was able to solve division problems involving common fractions but did badly on problems involving decimal fractions.
   c. After studying O'Henry's short stories, Sally was able to recognize a surprise ending in novels but not in television shown she saw.
   d. A high school teacher could handle discipline problems in boys quite efficiently but was unable to deal effectively with girls.

2. Which of the following best illustrates the principle of classical conditioning?
   a. If every time a parrot talks, its owner makes it flap its wings, the parrot will soon be flapping its wings instead of talking.
   b. Eating honey will cause a bear to salivate if it had salivated while eating honey in the past.
   c. If every time an elephant is surprised when the wind blows, the elephant will soon appear surprised every time the wind blows.
   d. A tapping sound is made before a light flashes. The light flashing causes Bill to blink his eyes. Bill soon blinks his eyes whenever he hears a tapping sound.

3. Which situation best illustrates a generalization gradient?
   a. When Chuck's mother bought a tall, narrow 10 gallon fish tank, Chuck complained it didn't hold as much water as the low and wide tank they already had.
   b. Richard failed to make the basketball squad because he was too small so he worked hard to win a cheerleaders position.
   c. Suzy becomes frightened whenever she sees a gun. Her boyfriend Homer takes her to see gangster movies a lot. Eventually Suzy got to feel afraid of Homer.
   d. If every time a colt appears startled a humming noise is made, it will soon appear startled every time it hears the humming noise.
4. Which of the following statements best reflects the concept of learning through drive reduction?

   a. When an organism is given a reward it will learn a new set of responses quicker than another organism which is not given a reward.

   b. When there is a reduction in the strength of a drive, the internal state of an organism is calmer and more conducive to learning a new response.

   c. An organism with any strong drive will learn a new response quicker and remember it for longer than will an organism with a weak drive.

   d. When an activity leads to the reduction of a drive, that activity is less likely to recur when the organism is confronted with the same circumstances in the future.

   [not very confident] [very confident]

5. Which of the following situations best illustrates the principle of learning through drive reduction?

   a. A monkey fed every three minutes while working on a puzzle learned to solve it quicker than another monkey which was not fed at all during that time.

   b. A thirsty pigeon pecked at a red disc and a drop of water fell into a small cup nearby. The pigeon was soon observed pecking the disc again and quickly hopping over to the cup.

   c. A dog which had just been well fed was free from unsettling internal drive and learned a new trick more quickly.

   d. A hamster which had not been fed for two hours learned a maze quicker and remembered it longer than one not fed for four hours.

   [not very confident] [very confident]

6. Which example is the best illustration of classical conditioning?

   a. A rat which had to press a bar five times for each pellet continued to press the bar longer when pellets were not available than a rat given a pellet after every bar press.

   b. A dog learned to make a difficult response more easily when it had been rewarded after every tenth attempt at jumping through a hoop.

   c. A parrot learned to talk more quickly when it was fed a piece of grain after every two or three attempts rather than after every attempt.

   d. A four year old boy was unable to tell the difference between circles and squares but an eight year old had learned to do this.

   [not very confident] [very confident]
7. Which of the following situations best illustrates the principle of classical conditioning?

a. If every time a tiger jumps from one bench to another the trainer makes it sit up, the tiger will soon sit up instead of jumping.

b. If every time an owl blinks a gong is sounded, it will soon blink every time the gong is struck.

c. A horse will appear startled if a loud noise is made behind it. If each time before the noise is made, the horse is shown a white flag it will soon look startled just with the appearance of the flag.

d. A monkey will salivate when food is presented if it has salivated while eating food in the past.

(not very confident)  (very confident)

8. Which of the following examples best illustrates the concept of learning through drive reduction?

a. An aspiring basketball player must spend hours practicing layups before she is able to make 95% of her shots.

b. Mrs. Jones tells Jim he must complete all of the assignment to get credit but later she gives him partial credit.

c. Mr. Smith wants Tara to improve the organization on her test papers. Early in the year, he gives Tara one or two bonus points for any improvement.

d. In questioning a witness during a trial, a lawyer was able to determine the witness was unsure of the time of day an event occurred.

(not very confident)  (very confident)

9. Which of the following summarizes what is meant by generalization gradient?

a. Anxiety produced energy is transferred to a less threatening object.

b. The closer the similarity in a new and old situation, the more likely that the organism will make the old response in a new setting.

c. Transfer of a new response to an old situation is positively related to the amount of discrepancy in the two situations.

d. To efficiently train an animal to learn a response successfully, closer and closer approximations of the response should be reinforced.

(not very confident)  (very confident)
10. Which of the following best illustrates the concept of intermittent reinforcement?
   a. A monkey will salivate when food is presented if it had salivated while eating food in the past.
   b. Eating honey three times a day will cause a bear to salivate every time it sees a honey tree.
   c. Jane was able to name six characteristics of a living cell by remembering the word "ceflit." She used each of the six letters to remind her of one of the characteristics.
   d. A dog which had just been fed was now free from unsettling internal drive and learned a new trick more quickly.

(not very confident)  

11. Which of the following best illustrates the concept of intermittent reinforcement?
   a. When the grain supply ran out, chickens which had earned a grain every time they pecked a disc promptly stopped pecking. Chickens which had been rewarded occasionally pecked away indefinitely without pause.
   b. A dog learned to make a difficult response more easily when it had been rewarded after every tenth attempt rather than continuously while training.
   c. A dolphin was given a piece of fish for every third jump through a hoop. A second dolphin was given a piece after every jump. When fish was no longer provided, the first dolphin continued to jump for longer than the second.
   d. A parrot learned to talk more quickly when it was fed a piece of grain after every two or three attempts rather than after every attempt.

(Not very confident)  

12. Which is the clearest example of the concept of intermittent reinforcement?
   a. If you get a Coke in the Physics building and always get a Coke from the machine, you may not try again if you didn't get a Coke for your quarter. However, if you usually get Coke from the machine in the Quad (a machine with an irregular reputation for taking quarters and not giving Coke) you may try a second time at the Quad machine.
   b. When food is no longer given to a monkey who received food after every turn of a handle, he will soon stop turning the handle.
   c. Mr. Willis persisted in wanting to live in the Shadowbrook part of town until his wife insisted he go over one morning to hear how loud the train sounded at 3 a.m.
   d. In playing a game of battleship, Gary complained Keith got too many points. Later Gary choose not to participate in a pong tournament held for a charity drive while Keith enthusiastically participated.
13. Which of the following situations best reflects behavior following training under intermittent reinforcement?

a. A racoon which had been rewarded with a pellet of food every time it pressed a bar promptly stopped pressing when the food supply ceased. A racoon which had been rewarded occasionally pressed the bar indefinitely without pause.

b. A chimpanzee learned to solve a complex puzzle more easily when it was rewarded after every three or four attempts rather than after every attempt.

c. An animal trainer was able to teach a dog a new trick more quickly when it was rewarded after every tenth attempt rather than continuously while training.

d. A canary which had to peck a key ten times to obtain a grain of wheat continued to peck at the key even when all the grain was gone far longer than a canary which had received a grain after every peck.

137 (not very confident) (very confident)

14. Which of the following situations best illustrates the principle of learning through drive reduction?

a. A dog given extra food during the time period it was practicing a new trick learned to perform it quicker than one which had only its regular meal.

b. A small piece of fruit fell into his food dish when a hungry monkey bumped against a lever at the end of his cage. Soon after he had eaten his food the monkey began jumping about near the lever again.

c. A thirsty pigeon learned to peck a disc for water more quickly and remembered this response for longer than a pigeon which had just been drinking.

d. After eating their daily meal the big cats seemed more settled and performed better for their trainer.

1 (not very confident) 99 (very confident)

15. Which situation is the best example of a generalization gradient?

a. A rat learns a maze which involves two turns to the left. Later he quickly solves a maze that has two turns to the right but does badly on one involving four left turns.

b. Cats quickly learn to avoid foods that have been poisoned with a chemical that produces stomach upset, but have difficulty learning to press a lever to avoid a shock.

c. A dog is trained to go outside the house by being punished for "accidents." Later he turns out to be a good pointer in hunting but always chews up the birds he retrieves.

d. An elephant raises his trunk to greet the zookeeper who feeds him but not for the child who brings him peanuts.

1 (not very confident) 99 (very confident)
16. Which example best illustrates the concept of classical conditioning?

____a. A music teacher first reinforces a child for making any kind of noise with the violin. Later she gives praise when the song is recognizable.

____b. After playing a game of tennis, Jack stops at an ice cream place and quenches his thirst with a great tasting banana milkshake. The third time after he plays tennis he returns to the ice cream place again.

____c. A hamster which had not been fed for four hours learned a maze quicker and remembered it longer than one not fed for two hours.

____d. A pigeon is taught to play ping-pong by being reinforced first for touching the ping-pong ball, then hitting it and finally for hitting it on the rebound.

(not very confident) 99 (very confident)

CONTINUE ON TO THE NEXT SECTION AND READ THE PARAGRAPHS RELATIVE TO THE FREUDIAN VIEWPOINT IN PSYCHOLOGY TODAY.
1. Which of the following best illustrates the concept of projection?
   a. After Johnny won the tennis tournament he spent a great deal of time imagining himself as a world famous tennis champion.
   b. Sally's mother had wanted to be a ballerina so Sally started dancing lessons at age 3.
   c. When David didn't get the highest mark on a test, he accused the top student of cheating.
   d. Mrs. Smith was afraid she would get fat but she always nagged her husband about eating too much.

2. Which of the following best illustrates the concept of the neurotic nucleus?
   a. Kiri lost the badminton tournament. She didn't play again for three months.
   b. The softball team played and lost in the consolation round. They immediately blamed the official then went on a charity tour.
   c. Don had worked hard on his paper. When his editor told him to re-write a portion of it he left town and never came back.
   d. Sally's club had a bad experience working in a prison. After that they spent their time in the local hospital pediatric wing.

3. Which of the following situations best illustrates the principle of displacement?
   a. Mr. Dupont decided that as a bus driver he was failing to develop his painting talent so he decided to put himself through art school.
   b. Joan was not a good pianist but she developed a keen interest in swimming, history, modern art, jazz and public speaking.
   c. Peter failed to make the baseball team so he decided to give up gymnastics to spend more time practicing his pitching.
   d. When punished for sucking his thumb, Timmy stopped that habit but spent hours chewing gum given him by his grandmother.
4. Which situation best illustrates the concept of projection?
   a. A thirsty cat bumps into a lever and escapes from a cage to reach a saucer of milk. The cat is returned to the cage but is soon observed jumping near the lever again.
   b. A child is bitten by a small dog. Later the child cries when he sees a neighbor's cat but not when his friend brings over a hamster.
   c. A hungry rat finds and eats a small piece of food at the end of a maze. The rat is returned to the start of the maze but is soon observed running towards the end point again.
   d. A young soldier doesn't want to admit he is frightened in battle so he accuses his platoon leader of being too brave.

5. Which of the following best illustrates the principle of displacement?
   a. Sam desires a souped-up car more than anything else. At night he dreams how others will react to him and imagines his popularity will increase if he acquires the car.
   b. Johnny was able to solve division problems involving common fractions but did badly on problems involving decimal fractions.
   c. An elephant raises his trunk to greet the zookeeper when the zookeeper brings food and raises it for the child bringing peanuts as well.
   d. A child is stung by a bee. Later this child demonstrates a high interest in collecting insects.

6. Which of the following best illustrates the concept of the neurotic nucleus?
   a. Chris spent months completing a weaving for the art competition. When it took second place, Chris wrote letters to the jurors and press complaining of duplicity in the judging.
   b. Sally was upset that the mortgage was to be foreclosed on the farm so she arranged for a private farm sale first.
   c. Kelly's team admitted they were angry with the city for closing the park so they disbanded.
   d. Coco, a cat, began to growl and jump at the birds hopping outside on the windowsill. Coco even snarled at birds on television.
7. Which of the following situations best illustrates the concept of extroversion-introversion?

a. After a hard day at school, Helen always enjoyed the chatter and company at the corner drug store but Irene loved to go over to the gym and play a pick-up game of basketball.

b. When Arnold goes to the office to work, he never seems to get any work done because he always spends his time talking with people. Jack is friendly if people speak to him.

c. Because he had been fat and ugly, a young man never achieved the social success he wanted as a child and teenager. As an adult he turned to a life of violent crime.

d. Sam entered the class anxious to start a new life and began to chat with the students on both sides. Jacque, from France, entered the room and sat silently in the back row.

8. The concept of the neurotic nucleus is best exemplified by which of the following examples?

a. Alex, a teacher, ran for office in the teachers union. When calls for a strike came, Alex began to feel anxious. He tried harder than ever in his teaching in order to not let his feelings hurt the progress of his students.

b. Buleah stormed around the factory tearing down posters hung for a pro-union group. When confronted by her superiors with a memo about freedom of speech, she refused to admit wrong-doing and continued to tear down the posters.

c. Smitty continually invented stories about his prowess during the war. During a reunion he got caught in some lies and laughed it off with the rest of his platoon.

d. Sally was so bored at home she color coded the towels in the closet and yelled at the kids whenever they left anything lying about. How she is active in hospital work and enjoys this challenging activity.

9. Which of the following situations best illustrates the principle of displacement?

a. When Carol failed to find any satisfaction in her routine office job she began to take night classes to qualify as a social worker.

b. Not one of Pam's entries in the art contest won a prize so she decided that she would drop out from the school choir in order to give more attention to her painting.

c. Steve Peterson just could not afford a sports car but he made sure his model car collection was the finest and most up to date in the whole town.

d. Although he did not care for schoolwork, John developed an active interest in sports and tinkering with his car.
10. Which of the following situations best illustrates the principle of extroversion-introversion?
   a. Mary's first day at school was a happy one and she looked forward to going the next day. June had been reprimanded for her constant chatter and she was reluctant to reappear.
   b. After the car accident Bill called his friends and they worked on the fender all afternoon. Tom felt depressed at his own carelessness hitting Bill's car and shut himself in his room.
   c. At the social club meetings the men frankly discussed the issues but the women as always were more retiring and hesitated to speak.
   d. The boys from the highest academic track did not take part in group social and sports events. These school activities were managed happily by boys with less academic interests.

11. Which of the following represents an example of projection?
   a. Mr. Falcone, who was very short, subscribed to many he-man magazines.
   b. Jim Balba accused his wife of adultery after he had had an affair.
   c. Betty's parents were very strict so she refused to accept the existence of sex and became an old maid.
   d. Judy used to spend a great deal of time imagining herself as an old maid.

12. Which of the following represents an example of projection?
   a. When a baseball mitt he had wanted badly disappears from his father's store, Pete accuses his older sister of stealing it.
   b. A man eats a meal at a Chinese restaurant. One hour later he is ill with vomiting and upset stomach. The next day he is able to conclude a deal with a Japanese businessman but feels ill watching a Kung-Fu movie set in Hong Kong.
   c. Voters expect politicians to be more moral and strict in their behavior than the voters themselves.
   d. On a test, the chemistry student was able to remember that a certain law dealt with the way atoms combine to form molecules but was unable to remember the chemist's name which was associated with the law.
13. Which of the following best exemplifies the neurotic nucleus?
   a. Sue had an embarrassing encounter with a boy. Whenever she saw him
      coming after that she avoided him but did go out with others.
   b. Sam lost the swim race so he angrily quit the swim team and began
      to participate in cross country track.
   c. Keith lied so much it was hard to tell truth from fiction. Later
      Keith made up for this by making time for working with the local
      community service club.
   d. Philip took sleeping pills every night. Later his friend found
      him dead.

14. Which provides the best example for the concepts of introversion-
    extroversion?
   a. Mildred would speak about her deep thoughts with no one but God. 
      Charlton travelled from area to area and never remained at a job 
      longer than a year because he claimed he enjoyed the challenge.
   b. Although Helene appeared to be a bright child she never did well 
      in school either academically or socially. Mike, on the other 
      hand, excelled academically and became very, very upset when ignored 
      socially.
   c. Comrey prefers to read about a thing rather than experience it while 
      Michale has a background of many job contacts in a relatively short 
      period of time.
   d. Meredith feels comfortable with people she has never met while 
      Eugene sometimes enjoys the company of familiar friends.

15. Which best illustrates the principle of displacement?
   a. Sam enjoys eating and does this at every opportunity.
   b. Joan was married three times before she found the perfect husband.
   c. A young soldier didn't want to admit he is frightened in battle so
      he prayed a lot.
   d. When old people think back on their youth they only remember the good
      times.
16. Which of the following situations best illustrates the concept of extroversion-introversion?

a. The successful scholars in the class did not like to play team sports because they did not enjoy taking part in organized activities with others. Most team members were less successful at schoolwork.

b. Ron and Andy soon made friends with their new neighbors but like all girls their sisters were more hesitant to make the first move.

✓c. Following the final examination Nancy and her friends enjoyed a meal together and went to a movie. Jean treated herself to an expensive dinner and relaxed in front of the television.

d. Susan was anxious to begin her second dance lesson because her group had been so friendly. Francis had found the routine rather boring and wished she could avoid going.

1
(not very confident)

99 (very confident)

CONTINUE ON TO THE NEXT SECTION AND READ THE PARAGRAPHS RELATIVE TO CURRENT TOPICS IN THE FIELD OF SOCIAL PSYCHOLOGY.
1. Which of the following situations best illustrates the concept of desensitization?

- a. Quincy systematically views corpses daily. The police artist, however does not care to work with Quincy.
- b. Use of a buzzer system to successfully treat bedwetters by waking them when the first few drops of urine appear worked to help Nathan stop wetting the bed at night. Beth, however, slept through the alarm
- c. Joan wanted to quit smoking so she removed herself from parties and drinking situations so she wouldn't be tempted.
- d. Jack, a prison inmate, received a token each time he engaged in an academic endeavor. Soon the tokens weren't necessary and Jack continued to learn.

(very confident)

2. Which of the following scenarios best illustrates the concept of desensitization?

- a. Fluffy, a poodle, always yelped at night. Her mistress left the light on. Next she put a flashlight in the bed with Fluffy. Now Fluffy doesn't yelp at night.
- b. Sam tightens brake bolts in an automobile factory. During Sam's first year he made sure each bolt was tight in order to prevent later accidents. He was rushed one day and tightened the bolt only half-way. He didn't bother to report it to his supervisor.
- c. Eleanor worked in the staffing room of the CIA as the only female liason. In the beginning she was very conscious about her presence. She feels comfortable at work now.
- d. Jack was feeling low. He left the party thinking "Nobody loves me." Then he met Jane who adored him. His interest in parties was rekindled.

(very confident)

3. Which best exemplifies the concept of a risky shift?

- a. Jack knew a tequila sunrise gave him a headache but all the guys were drinking them. Jack had one and was sick the next day.
- b. The weather forecast predicted rain but the sun was shining brightly so Dick did not take an umbrella. When he arrived home he was soaking wet and angry.
- c. The tire had little tread but Nancy had no money to buy new ones. She kept riding on the progressively balding tires. Her brother, Ray, offered to loan her money to buy new ones but Nancy continued to ride on the old tires until her next pay check.
- d. Kitty decided to enter the marathon even though her doctor said her knee hadn't healed. Kitty started the race and dropped out halfway through.

(very confident)
4. Which best exemplifies the concept of a risky shift?

a. Hal had the choice of a job overseas for $36,000, a year which would separate him from his family for 6 months or one at home for $15,000. He choose the $15,000, saying another option will come later.

b. The pilot had a half-hours fuel left and had to decide to go back against the wind to an airport 25 minutes away or cross the mountain and try to catch a tail wind and land at a field 35 minutes the other direction. He voted in favor of turning back but the crew convinced him to cross the mountain in case they could land with the help of the tail wind.

c. The doctor was stuck in the snow as the nervous father-to-be paced in the living room. As his wife cried out, he decided it was no use and began to boil water and get scissors and clean towels ready.

d. The gas tank was close to empty but Sam wouldn't pay 75¢ a gallon for gas in the small town. Five hours later he hiked back with a gas can grateful the station was open and would sell gas at any price.

5. Which example best illustrates the concept explained by attribution?

a. The dog was always fed by five o'clock. By seven there was still no food so the dog tore open the sack himself.

b. The babysitter promised the children a story. They then watched TV and it got late. The sitter put two sad children to bed and reasoned it was just too late for the promised bedtime story.

c. The supervisor wanted to promote a fine employee. It was vetoed by the personnel manager. The supervisor never forgave the personnel manager.

d. Even before the television survey on stereotyping began, James knew what the outcome would be and began to act accordingly.

6. Which illustration describes the concept of learned helplessness?

a. Ham ate and ate until he joined Weight Watchers.

b. ALANON really helped Katherine's teenaged children even though her drinking problem still persisted.

c. Linda often complained her major professor was too much of a perfectionist but she stayed with her just the same.

d. After two weeks of snow and no contact with the outside world Bud and his family were very much on edge.
7. Which of the following situations best defines the concept of attribution theory?

a. When Jud starts his car he pumps the gas pedal three times, pulls out the choke, turns off the radio and turns the key. It usually starts. His wife can never get it started.

b. When Sam, a beagle, is hungry he turns around three times while in the kitchen. Food always appears.

c. Before a test, Maryann always chews gum. Today, on her way to the exam she even borrowed money from a classmate to buy a pack.

d. Jessica left for work with the clothes washer still running. When she came home she found the laundry room flooded. She quickly declared she had no idea what had happened.

1 (not very confident) 99 (very confident)

8. Which of the following best illustrates the notion of social desensitization?

a. Sarah was convinced she was alone in the world. At first it hurt to be alone but now she rocks back and forth in silence oblivious to her surroundings.

b. The attentiveness of their five year old to the television ads bothered Bill and Jane. When their daughter was seven, she ignored and criticized them.

c. Gina was a French correspondent in Viet Nam. Home now, she leaves the pressroom whenever a particularly violent news story appears on the teletype.

d. Insects were a way of life for Mai who lived in an urban slum as a child. Now, twenty years later, Mai insists his wife maintain a spotless home.

1 (not very confident) 99 (very confident)

9. Which situation best exemplifies the concept of learned helplessness?

a. The horse felt a 200 pound bag on its back. At first it bucked but couldn't get rid of it. Finally it stopped bucking and walked about.

b. The Xerox machine was used a lot. Today it was broken and the secretaries found they didn't have much to do.

c. Sam drank a lot and, as a result, lost his job, family and friends.

d. Since being laid off eight months ago, Alice felt listless and angry. So she began to paint in earnest.

1 (not very confident) 99 (very confident)
10. Which of the following situations best exemplifies attribution theory in action?

____ a. Mr. Wersek, a physics teacher, saw a foreign sounding name on the class enrollment list. He immediately identified the student as a problem.

____ b. Nothing was going right for Alex. Then he remembered he got out of bed on the wrong side. That made him madder than ever.

____ c. Jed was promised his car back from the service center on Monday. When he went Tuesday it still hadn't been touched. They told him why it wasn't ready but Jed called his lawyer anyway.

____ d. Ajalo saw the sun go black in the sky. He cried even though his parents told him not to worry.

(not very confident) (very confident) 99

11. Which example best illustrates the concept of desensitization?

____ a. Sally is afraid of speaking in front of a group. By practicing in front of her two roomies she is able to gain enough confidence to complete her required speech course.

____ b. Gergan felt frightened whenever it was time to take an exam so he learned to chew gum before each test.

____ c. Bill was a policeman who used to become violently ill when investigating a car accident. Now Bill investigates the incident then stops by the bar on his way home to relax.

____ d. Suzy never meant to cry in front of her instructor but the low grade on her test bothered her. Now Suzy does relaxation exercises before an exam and her grades aren't as low.

(not very confident) (very confident) 99

12. Which best illustrates the concept of a risky shift?

____ a. The Bombadeers, a motorcycle club, decided to ride through a campground one evening. Slim decided not to go because he had heard the police had been tipped off.

____ b. Matilda had to make a decision whether to keep her baby or give it up for adoption. Her parents wanted her to keep the child but Matilda decided adoption was best.

____ c. The Spanish club had a steadily declining roster. They had to decide whether to raise initiation fees to $5.00 in order to pay the bills or to keep the fees low and risk financial problems. A ballot indicated a fee change to $3.00 but after much discussion fees were set at $3.50.

____ d. Sam, who had been laid off from work for 3 months, had to decide whether to listen to his child cough or shoplift some medicine. He decided to steal the medicine.

(not very confident) (very confident) 99
13. Which of the following scenarios best illustrates the concept of learned helplessness?

- a. Three men met Bill one evening and demanded his wallet. Even though he had a knife, Bill gave it to them.
- b. Silly, a dog, had been treated very cruelly by a previous master and was totally untrained. After weeks of patient love, Silly learned to behave for her new master.
- c. Always told by her father she was fat, Brenda never participated in swimming activities until after she went on a badly needed diet.
- d. In spite of the tremendous demands on her time, Mildred always found time to jog and meditate.

1 (not very confident) 99 (very confident)

14. What situation best exemplifies the concept of learned helplessness?

- a. No matter what Susan did she couldn't get better than a "C" on any chemistry test. She finally stopped spending so much time on chemistry and devoted her energies towards her other classes.
- b. Nicky kept trying to avoid the drugs readily available in his neighborhood. After being swept up in a raid by mistake he was thrown in jail where he became a patsy for everyone else in prison.
- c. Mrs. Smith loved anagrams. Her husband brought home several for her that, unknown to her, were unsolvable. After she worked on them for several days she gave up.
- d. Marjorie finished her term paper but received it back with the comment "Re-do or take an F." Marjorie took the "F" and changed her major.

1 (not very confident) 99 (very confident)

15. Which of the following examples best illustrates attribution theory?

- a. Lee just moved to the city. At school she received the lowest grade on the math test. The teacher couldn't decide what to do.
- b. Butch never went anywhere without his rabbit foot. He claimed to be lost without it.
- c. Before the test Cynthia got sick. She knew then that she would not do well on the exam.
- d. John couldn't decide between the blue Ford or the red Chevy. After he purchased the Ford he realized all the faults he found in the Chevy.

1 (not very confident) 99 (very confident)
16. Which exemplifies the concept of a risky shift?

_____ a. The tigers hadn't been fed but Gunner decided to perform anyway. He barely escaped with his life and vowed never to go inside the cages before feeding them again.

_____ b. Josan thought he was Superman and even though his mother kept telling him people couldn't fly like that, Josan climbed on the roof to try anyway.

_____ c. It was Chuck's last exam in college. He was doing well in the course so he didn't prepare much. Then, twelve hours before the exam, he changed his mind and crammed. He passed with an "A."

_____ d. Judy and Paul were packing up their china for a cross country move. Paul wanted to hire a moving company but Judy wanted to do it herself. Judy had her way.

(not very confident) (very confident)

WHEN YOU HAVE COMPLETED THIS MUCH OF THE TASK, REMAIN IN YOUR SEAT AND RAISE YOUR HAND. THERE IS ONE MORE PART WHICH SHOULD TAKE NO LONGER THAN TEN MINUTES. THANK YOU FOR YOUR PATIENT COOPERATION!
APPENDIX H:

FORM B QUESTION SETS FOR EACH PASSAGE SET
1. Which example best illustrates the concept of classical conditioning?

a. A music teacher first reinforces a child for making any kind of noise with the violin. Later she gives praise when the song is recognizable.

b. After playing a game of tennis, Jack stops at a ice cream place and quenches his thirst with a great tasting banana milkshake. The third time after he plays tennis he returns to the ice cream place again.

c. A hamster which had not been fed for four hours learned a maze quicker and remembered it longer than one not fed for two hours.

d. A pigeon is taught to play ping-pong by being reinforced first for touching the ping-pong ball, then hitting it and finally for hitting it on the rebound.

(not very confident) (very confident)

2. Which situation best illustrates a generalization gradient?

a. When Chuck's mother bought a tall, narrow 10 gallon fish tank, Chuck complained it didn't hold as much water as the low and wide tank they already had.

b. Richard failed to make the basketball squad because he was too small so he worked hard to win a cheerleaders position.

c. Suzy becomes frightened whenever she sees a gun. Her boyfriend Homer takes her to see gangster movies a lot. Eventually Suzy got to feel afraid of Homer.

d. If everytime a colt appears startled a humming noise is made, it will soon appear startled everytime it hears the humming noise.

(not very confident) (very confident)

3. Which situation is the best example of a generalization gradient?

a. A rat learns a maze which involves two turns to the left. Later he quickly solves a maze that has two turns to the right but does badly on one involving four left turns.

b. Cats quickly learn to avoid foods that have been poisoned with a chemical that produces stomach upset, but have difficulty learning to press a lever to avoid a shock.

c. A dog is trained to go outside the house by being punished for "accidents." Later he turns out to be a good pointer in hunting but always chews up the birds he retrieves.

d. An elephant raises his trunk to greet the zookeeper who feeds him but not for the child who brings him peanuts.

(not very confident) (very confident)
4. Which of the following summarizes what is meant by generalization gradient?

a. Anxiety produced energy is transferred to a less threatening object.  

b. The closer the similarity in a new and old situation, the more likely that the organism will make the old response in a new setting.  

c. Transfer of a new response to an old situation is positively related to the amount of discrepancy in the two situations.  

d. To efficiently train an animal to learn a response successfully, closer and closer approximations of the response should be reinforced.  

5. Which is the clearest example of the concept of intermittent reinforcement?

a. If you get a Coke in the Physics building and always get a Coke from the machine, you may not try again if you didn't get a Coke for your quarter. However, if you usually get Coke from the machine in the Quad (a machine with an irregular reputation for taking quarters and not giving Coke) you may try a second time at the Quad machine.  

b. When food is no longer given to a monkey who received food after every turn of a handle, he will soon stop turning the handle.  

c. Mr. Willis persisted in wanting to live in the Shadowbrook part of town until his wife insisted he go over one morning to hear how loud the train sounded at 3 a.m.  

d. In playing a game of battleship, Gary complained Keith got too many points. Later Gary choose not to participate in a pong tournament held for a charity drive while Keith enthusiastically participated.  

6. Which of the following best illustrates the principle of classical conditioning?

a. If everytime a parrot talks, its owner makes it flap its wings, the parrot will soon be flapping its wings instead of talking.  

b. Eating honey will cause a bear to salivate if it had salivated while eating honey in the past.  

c. If everytime an elephant is surprised when the wind blows, the elephant will soon appear surprised everytime the wind blows.  

d. A tapping sound is made before a light flashes. The light flashing causes Bill to blink his eyes. Bill soon blinks his eyes whenever he hears a tapping sound.  

7. Which of the following statements best reflects the concept of learning through drive reduction?

a. When an organism is given a reward it will learn a new set of responses quicker than another organism which is not given a reward.

b. When there is a reduction in the strength of a drive, the internal state of an organism is calmer and more conducive to learning a new response.

c. An organism with any strong drive will learn a new response quicker and remember it for longer than will an organism with a weak drive.

d. When an activity leads to the reduction of a drive, that activity is less likely to recur when the organism is confronted with the same circumstances in the future.

8. Which of the following best illustrates the concept of intermittent reinforcement?

a. A monkey will salivate when food is presented if it had salivated while eating food in the past.

b. Eating honey three times a day will cause a bear to salivate everytime it sees a honey tree.

c. Jane was able to name six characteristics of a living cell by remembering the word "ceflit." She used each of the six letters to remind her of one of the characteristics.

d. A dog which had just been fed was now free from unsettling internal drive and learned a new trick more quickly.

9. Which of the following situations best reflects behavior following training under intermittent reinforcement?

a. A racoon which had been rewarded with a pellet of food every time it pressed a bar promptly stopped pressing when the food supply ceased. A racoon which had been rewarded occasionally pressed the bar indefinitely without pause.

b. A chimpanzee learned to solve a complex puzzle more easily when it was rewarded after every three or four attempts rather than after every attempt.

c. An animal trainer was able to teach a dog a new trick more quickly when it was rewarded after every tenth attempt rather than continuously while training.

d. A canary which had to peck a key ten times to obtain a grain of wheat continued to peck at the key even when all the grain was gone far longer than a canary which had received a grain after every peck.
10. Which of the following situations best illustrates the principle of classical conditioning?

a. If every time a tiger jumps from one bench to another the trainer makes it sit up, the tiger will soon sit up instead of jumping.

b. If every time an owl blinks a gong is sounded, it will soon blink every time the gong is struck.

c. A horse will appear startled if a loud noise is made behind it. If each time before the noise is made, the horse is shown a white flag it will soon look startled just with the appearance of the flag.

d. A monkey will salivate when food is presented if it has salivated while eating food in the past.

(very confident)

11. Which of the following best illustrates the concept of intermittent reinforcement?

a. When the grain supply ran out, chickens which had earned a grain every time they pecked a disc promptly stopped pecking. Chickens which had been rewarded occasionally pecked away indefinitely without pause.

b. A dog learned to make a difficult response more easily when it had been rewarded after every tenth attempt rather than continuously while training.

c. A dolphin was given a piece of fish for every third jump through a hoop. A second dolphin was given a piece after every jump. When fish was no longer provided, the first dolphin continued to jump for longer than the second.

d. A parrot learned to talk more quickly when it was fed a piece of grain after every two or three attempts rather than after every attempt.

(very confident)

12. Which of the following examples best illustrates the concept of learning through drive reduction?

a. An aspiring basketball player must spend hours practicing layups before she is able to make 95% of her shots.

b. Mrs. Jones tells Jim he must complete all of the assignment to get credit but later she gives him partial credit.

c. Mr. Smith wants Tara to improve the organization on her test papers. Early in the year, he gives Tara one or two bonus points for any improvement.

d. In questioning a witness during a trial, a lawyer was able to determine the witness was unsure of the time of day an event occurred.
13. Which of the following situations best illustrates the principle of learning through drive reduction?
   a. A dog given extra food during the time period it was practicing a new trick learned to perform it quicker than one which had only its regular meal.
   b. A small piece of fruit fell into his food dish when a hungry monkey bumped against a lever at the end of his cage. Soon after he had eaten his food the monkey began jumping about near the lever again.
   c. A thirsty pigeon learned to peck a disc for water more quickly and remembered this response for longer than a pigeon which had just been drinking.
   d. After eating their daily meal the big cats seemed more settled and performed better for their trainer.

14. Which of the following situations best illustrates the principle of learning through drive reduction?
   a. A monkey fed every three minutes while working on a puzzle learned to solve it quicker than another monkey which was not fed at all during that time.
   b. A thirsty pigeon pecked at a red disc and a drop of water fell into a small cup nearby. The pigeon was soon observed pecking the disc again and quickly hopping over to the cup.
   c. A dog which had just been well fed was free from unsettling internal drive and learned a new trick more quickly.
   d. A hamster which had not been fed for two hours learned a maze quicker and remembered it longer than one not fed for four hours.

15. Which of the following best illustrates the concept of generalization gradients?
   a. One school child was taught to say yellow when shown a yellow patch. A second child learned to say blue to a blue patch. Both were then shown a green patch. The first child called it yellow and the second blue.
   b. Johnnie was able to solve division problems involving common fractions but did badly on problems involving decimal fractions.
   c. After studying O'Henry's short stories, Sally was able to recognize a surprise ending in novels but not in television shown she saw.
   d. A high school teacher could handle discipline problems in boys quite efficiently but was unable to deal effectively with girls.

16. **Which example is the best illustration of classical conditioning?**

   a. A rat which had to press a bar five times for each pellet continued to press the bar longer when pellets were not available than a rat given a pellet after every bar press.

   b. A dog learned to make a difficult response more easily when it had been rewarded after every tenth attempt at jumping through a hoop.

   c. A parrot learned to talk more quickly when it was fed a piece of grain after every two or three attempts rather than after every attempt.

   d. A four year old boy was unable to tell the difference between circles and squares but an eight year old had learned to do this.

1 99
(not very confident) (Very confident)

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CONTINUE ON TO THE NEXT SECTION AND READ THE PARAGRAPHS RELATIVE TO THE FREUDIAN VIEWPOINT IN PSYCHOLOGY TODAY.
1. Which of the following best illustrates the concept of the neurotic nucleus?

   a. Kiri lost the badminton tournament. She didn’t play again for three months.
   b. The softball team played and lost in the consolation round. They immediately blamed the official then went on a charity tour.
   c. Don had worked hard on his paper. When his editor told him to re-write a portion of it he left town and never came back.
   d. Sally’s club had a bad experience working in a prison. After that they spent their time in the local hospital pediatric wing.

2. Which of the following represents an example of projection?

   a. When a baseball mitt he had wanted badly disappears from his father’s store, Pete accuses his older sister of stealing it.
   b. A man eats a meal at a Chinese restaurant. One hour later he is ill with vomiting and upset stomach. The next day he is able to conclude a deal with a Japanese businessman but feels ill watching a Kung-Fu movie set in Hong Kong.
   c. Voters expect politicians to be more moral and strict in their behavior than the voters themselves.
   d. On a test, the chemistry student was able to remember that a certain law dealt with the way atoms combine to form molecules but was unable to remember the chemist’s name which was associated with the law.

3. Which of the following best illustrates the concept of projection?

   a. After Johnny won the tennis tournament he spent a great deal of time imagining himself as a world famous tennis champion.
   b. Sally’s mother had wanted to be a ballerina so Sally started dancing lessons at age 3.
   c. When David didn’t get the highest mark on a test, he accused the top student of cheating.
   d. Mrs. Smith was afraid she would get fat but she always nagged her husband about eating too much.
4. Which of the following situations best illustrates the concept of extroversion-introversion?

a. The successful scholars in the class did not like to play team sports because they did not enjoy taking part in organized activities with others. Most team members were less successful at schoolwork.

b. Ron and Andy soon made friends with their new neighbors but like all girls their sisters were more hesitant to make the first move.

c. Following the final examination Nancy and her friends enjoyed a meal together and went to a movie. Jean treated herself to an expensive dinner and relaxed in front of the television.

d. Susan was anxious to begin her second dance lesson because her group had been so friendly. Francis had found the routine rather boring and wished she could avoid going.

5. Which of the following situations best illustrates the principle of displacement?

a. When Carol failed to find any satisfaction in her routine office job she began to take night classes to qualify as a social worker.

b. Not one of Pam's entries in the art contest won a prize so she decided that she would drop out from the school choir in order to give more attention to her painting.

c. Steve Peterson just could not afford a sports car but he made sure his model car collection was the finest and most up to date in the whole town.

d. Although he did not care for schoolwork, John developed an active interest in sports and tinkering with his car.

6. Which provides the best example for the concepts of introversion-extroversion?

a. Mildred would speak about her deep thoughts with no one but God. Charlton travelled from area to area and never remained at a job longer than a year because he claimed he enjoyed the challenge.

b. Although Helene appeared to be a bright child she never did well in school either academically or socially. Mike, on the other hand, excelled academically and became very, very upset when ignored socially.

c. Comrey prefers to read about a thing rather than experience it while Michale has a background of many job contacts in a relatively short period of time.

d. Meredith feels comfortable with people she has never met while Eugene sometimes enjoys the company of familiar friends.
7. Which of the following situations best illustrates the concept of extroversion-introversion?

a. After a hard day at school, Helen always enjoyed the chatter and company at the corner drug store but Irene loved to go over to the gym and play a pick-up game of basketball.

b. When Arnold goes to the office to work, he never seems to get any work done because he always spends his time talking with people. Jack is friendly if people speak to him.

c. Because he had been fat and ugly, a young man never achieved the social success he wanted as a child and teenager. As an adult he turned to a life of violent crime.

d. Sam entered the class anxious to start a new life and began to chat with the students on both sides. Jacque, from France, entered the room and sat silently in the back row.

(very confident) 99
(not very confident) 1

8. Which of the following situations best illustrates the principle of displacement?

a. Mr. Dupont decided that as a bus driver he was failing to develop his painting talent so he decided to put himself through art school.

b. Joan was not a good pianist but she developed a keen interest in swimming, history, modern art, jazz and public speaking.

c. Peter failed to make the baseball team so he decided to give up gymnastics to spend more time practicing his pitching.

d. When punished for sucking his thumb, Timmy stopped that habit but spent hours chewing gum given him by his grandmother.

(very confident) 99
(not very confident) 1

9. Which of the following represents an example of projection?

a. Mr. Falcone, who was very short, subscribed to many he-man magazines.

b. Jim Balba accused his wife of adultery after he had had an affair.

(c. Betty's parents were very strict so she refused to accept the existence of sex and became an old maid.

d. Judy used to spend a great deal of time imagining herself as an old maid.

(very confident) 99
(not very confident) 1
10. Which of the following situations best illustrates the principle of extroversion-introversion?

a. Mary's first day at school was a happy one and she looked forward to going the next day. June had been reprimanded for her constant chatter and she was reluctant to reappear.

b. After the car accident Bill called his friends and they worked on the fender all afternoon. Tom felt depressed at his own carelessness hitting Bill's car and shut himself in his room.

c. At the social club meetings the men frankly discussed the issues but the women as always were more retiring and hesitated to speak.

d. The boys from the highest academic track did not take part in group social and sports events. These school activities were managed happily by boys with less academic interests.

1 (not very confident) 99 (very confident)

11. Which situation best illustrates the concept of projection?

a. A thirsty cat bumps into a lever and escapes from a cage to reach a saucer of milk. The cat is returned to the cage but is soon observed jumping near the lever again.

b. A child is bitten by a small dog. Later the child cries when he sees a neighbor's cat but not when his friend brings over a hamster.

c. A hungry rat finds and eats a small piece of food at the end of a maze. The rat is returned to the start of the maze but is soon observed running towards the end point again.

d. A young soldier doesn't want to admit he is frightened in battle so he accuses his platoon leader of being too brave.

1 (not very confident) 99 (very confident)

12. The concept of the neurotic nucleus is best exemplified by which of the following examples?

a. Alex, a teacher, ran for office in the teachers union. When calls for a strike came, Alex began to feel anxious. He tried harder than ever in his teaching in order to not let his feelings hurt the progress of his students.

b. Buleah stormed around the factory tearing down posters hung for a pro-union group. When confronted by her superiors with a memo about freedom of speech, she refused to admit wrong-doing and continued to tear down the posters.

c. Smitty continually invented stories about his prowess during the war. During a reunion he got caught in some lies and laughed it off with the rest of his platoon.

d. Sally was so bored at home she color coded the towels in the closet and yelled at the kids whenever they left anything lying about. How she is active in hospital work and enjoys this challenging activity.

1 (not very confident) 99 (very confident)
13. Which of the following best exemplifies the neurotic nucleus?

____ a. Sue had an embarrassing encounter with a boy. Whenever she saw him coming after that she avoided him but did go out with others.

____ b. Sam lost the swim race so he angrily quit the swim team and began to participate in cross country track.

____ c. Keith lied so much it was hard to tell truth from fiction. Later Keith made up for this by making time for working with the local community service club.

____ d. Philip took sleeping pills every night. Later his friend found him dead.

(not very confident) (very confident)

19 Which of the following best illustrates the concept of the neurotic nucleus?

____ a. Chris spent months completing a weaving for the art competition. When it took second place, Chris wrote letters to the jurors and press complaining of duplicity in the judging.

____ b. Sally was upset that the mortgage was to be foreclosed on the farm so she arranged for a private farm sale first.

____ c. Kelly's team admitted they were angry with the city for closing the park so they disbanded.

____ d. Coco, a cat, began to growl and jump at the birds hopping outside on the windowsill. Coco even snarled at birds on television.

(not very confident) (very confident)

15. Which of the following best illustrates the principle of displacement?

____ a. Sam desires a souped-up car more than anything else. At night he dreams how others will react to him and imagines his popularity will increase if he acquires the car.

____ b. Johnny was able to solve division problems involving common fractions but did badly on problems involving decimal fractions.

____ c. An elephant raises his trunk to greet the zookeeper when the zookeeper brings food and raises it for the child bringing peanuts as well.

____ d. A child is stung by a bee. Later this child demonstrates a high interest in collecting insects.

(not very confident) (very confident)
16. Which best illustrates the principle of displacement?

____a. Sam enjoys eating and does this at every opportunity.
____b. Joan was married three times before she found the perfect husband.
____c. A young soldier didn't want to admit he is frightened in battle so he prayed a lot.
____d. When old people think back on their youth they only remember the good times.

(not very confident)                                       (very confident)
1. Which illustration describes the concept of learned helplessness?
   a. Ham ate and ate until he joined Weight Watchers.
   b. ALANON really helped Katherine's teenaged children even though her drinking problem still persisted.
   c. Linda often complained her major professor was too much of a perfectionist but she stayed with her just the same.
   d. After two weeks of snow and no contact with the outside world Bud and his family were very much on edge.

2. Which of the following best illustrates the notion of social desensitization?
   a. Sarah was convinced she was alone in the world. At first it hurt to be alone but now she rocks back and forth in silence oblivious to her surroundings.
   b. The attentiveness of their five year old to the television ads bothered Bill and Jane. When their daughter was seven, she ignored and criticized them.
   c. Gina was a French correspondent in Viet Nam. Home now, she leaves the pressroom whenever a particularly violent news story appears on the teletype.
   d. Insects were a way of life for Mai who lived in an urban slum as a child. Now, twenty years later, Mai insists his wife maintain a spotless home.

3. Which of the following scenarios best illustrates the concept of learned helplessness?
   a. Three men met Bill one evening and demanded his wallet. Even though he had a knife, Bill gave it to them.
   b. Silly, a dog, had been treated very cruelly by a previous master and was totally untrained. After weeks of patient love, Silly learned to behave for her new master.
   c. Always told by her father she was fat, Brenda never participated in swimming activities until after she went on a badly needed diet.
   d. In spite of the tremendous demands on her time, Mildred always found time to jog and meditate.
4. Which of the following situations best exemplifies attribution theory in action?

_____ a. Mr. Wersek, a physics teacher, saw a foreign sounding name on the class enrollment list. He immediately identified the student as a problem.

_____ b. Nothing was going right for Alex. Then he remembered he got out of bed on the wrong side. That made him madder than ever.

_____ c. Jed was promised his car back from the service center on Monday. When he went Tuesday it still hadn't been touched. They told him why it wasn't ready but Jed called his lawyer anyway.

_____ d. Ajalo saw the sun go black in the sky. He cried even though his parents told him not to worry.

5. Which exemplifies the concept of a risky shift?

_____ a. The tigers hadn't been fed but Gunner decided to perform anyway. He barely escaped with his life and vowed never to go inside the cages before feeding them again.

_____ b. Josan thought he was Superman and even though his mother kept telling him people couldn't fly like that, Josan climbed on the roof to try anyway.

_____ c. It was Chuck's last exam in college. He was doing well in the course so he didn't prepare much. Then, twelve hours before the exam, he changed his mind and crammed. He passed with an "A."

_____ d. Judy and Paul were packing up their china for a cross country move. Paul wanted to hire a moving company but Judy wanted to do it herself. Judy had her way.

6. Which situation best exemplifies the concept of learned helplessness?

_____ a. The horse felt a 200 pound bag on its back. At first it bucked but couldn't get rid of it. Finally it stopped bucking and walked about.

_____ b. The Xerox machine was used a lot. Today it was broken and the secretaries found they didn't have much to do.

_____ c. Sam drank a lot and, as a result, lost his job, family and friends.

_____ d. Since being laid off eight months ago, Alice felt listless and angry. So she began to paint in earnest.
7. Which of the following situations best defines the concept of attribution theory?

   a. When Jud starts his car he pumps the gas pedal three times, pulls out the choke, turns off the radio and turns the key. It usually starts. His wife can never get it started.

   b. When Sam, a beagle, is hungry he turns around three times while in the kitchen. **Food always appears.**

   c. Before a test, Maryann always chews gum. Today, on her way to the exam she even borrowed money from a classmate to buy a pack.

   d. Jessica left for work with the clothes washer still running. When she came home she found the laundry room flooded. She quickly declared she had no idea what had happened.

1 (not very confident) 99 (very confident)

8. What situation best exemplifies the concept of learned helplessness?

   a. No matter what Susan did she couldn't get better than a "C" on any chemistry test. She finally stopped spending so much time on chemistry and devoted her energies towards her other classes.

   b. Nicky kept trying to avoid the drugs readily available in his neighborhood. After being swept up in a raid by mistake he was thrown in jail where he became a patsy for everyone else in prison.

   c. Mrs. Smith loved anagrams. Her husband brought home several for her that, unknown to her, were unsolvable. After she worked on them for several days she gave up.

   d. Marjorie finished her term paper but received it back with the comment "Re-do or take an F." Marjorie took the "F" and changed her major.

1 (not very confident) 99 (very confident)

9. Which of the following scenarios best illustrates the concept of desensitization?

   a. Fluffy, a poodle, always yelped at night. Her mistress left the light on. Next she put a flashlight in the bed with Fluffy. Now Fluffy doesn't yelp at night.

   b. Sam tightens brake bolts in an automobile factory. During Sam's first year he made sure each bolt was tight in order to prevent later accidents. He was rushed one day and tightened the bolt only half-way. He didn't bother to report it to his supervisor.

   c. Eleanor worked in the staffing room of the CIA as the only female liason. In the beginning she was very conscious about her presence. She feels comfortable at work now.

   d. Jack was feeling low. He left the party thinking "Nobody loves me." Then he met Jane who adored him. His interest in parties was rekindled.

1 (not very confident) 99 (very confident)
10. Which best exemplifies the concept of a risky shift?

   a. Jack knew a tequila sunrise gave him a headache but all the guys were drinking them. Jack had one and was sick the next day.

   b. The weather forecast predicted rain but the sun was shining brightly so Dick did not take an umbrella. When he arrived home he was soaking wet and angry.

   c. The tire had little tread but Nancy had no money to buy new ones. She kept riding on the progressively balding tires. Her brother, Ray, offered to loan her money to buy new ones but Nancy continued to ride on the old tires until her next pay check.

   d. Kitty decided to enter the marathon even though her doctor said her knee hadn't healed. Kitty started the race and dropped out halfway through.

11. Which best exemplifies the concept of a risky shift?

   a. Hal had the choice of a job overseas for $36,000 a year which would separate him from his family for 6 months or one at home for $15,000. He choose the $15,000 saying another option will come later.

   b. The pilot had a half-hours fuel left and had to decide to go back against the wind to an airport 25 minutes away or cross the mountain and try to catch a tail wind and land at a field 35 minutes the other direction. He voted in favor of turning back but the crew convinced him to cross the mountain in case they could land with the help of the tail wind.

   c. The doctor was stuck in the snow as the nervous father-to-be paced in the living room. As his wife cried out, he decided it was no use and began to boil water and get scissors and clean towels ready.

   d. The gas tank was close to empty but Sam wouldn't pay 75¢ a gallon for gas in the small town. Five hours later he hiked back with a gas can grateful the station was open and would sell gas at any price.

12. Which example best illustrates the concepts explained by attribution?

   a. The dog was always fed by five o'clock. By seven there was still no food so the dog tore open the sack himself.

   b. The babysitter promised the children a story. They then watched TV and it got late. The sitter put two sad children to bed and reasoned it was just too late for the promised bedtime story.

   c. The supervisor wanted to promote a fine employee. It was vetoed by the personnel manager. The supervisor never forgave the personnel manager.

   d. Even before the television survey on stereotyping began, James knew what the outcome would be and began to act accordingly.
13. Which of the following examples best illustrates attribution theory?
____ a. Lee just moved to the city. At school she received the lowest grade on the math test. The teacher couldn't decide what to do.
____ b. Butch never went anywhere without his rabbit foot. He claimed to be lost without it.
____ c. Before the test Cynthia got sick. She knew then that she would not do well on the exam.
✓ d. John couldn't decide between the blue Ford or the red Chevy. After he purchased the Ford he realized all the faults he found in the Chevy.

(not very confident) (very confident)

14. Which best illustrates the concept of a risky shift?
____ a. The Bombadeers, a motorcycle club, decided to ride through a campground one evening. Slim decided not to go because he had heard the police had been tipped off.
____ b. Matilda had to make a decision whether to keep her baby or give it up for adoption. Her parents wanted her to keep the child but Matilda decided adoption was best.
✓ c. The Spanish club had a steadily declining roster. They had to decide whether to raise initiation fees to $5.00 in order to pay the bills or to keep the fees low and risk financial problems. A ballot indicated a fee change to $3.00 but after much discussion fees were set at $3.50.
____ d. Sam, who had been laid off from work for 3 months, had to decide whether to listen to his child cough or shoplift some medicine. He decided to steal the medicine.

(not very confident) (very confident)

15. Which of the following situations best illustrates the concept of desensitization?
____ a. Quincy systematically views corpses daily. The police artist, however, does not care to work with Quincy.
____ b. Use of a buzzer system to successfully treat bedwetters by waking them when the first few drops of urine appear worked to help Nathan stop wetting the bed at night. Beth, however, slept through the alarm.
____ c. Joan wanted to quit smoking so she removed herself from parties and drinking situations so she wouldn't be tempted.
____ d. Jack, a prison inmate, received a token each time he engaged in an academic endeavor. Soon the tokens weren't necessary and Jack continued to learn.

(not very confident) (very confident)
16. Which example best illustrates the concept of desensitization?

a. Sally is afraid of speaking in front of a group. By practicing in front of her two roomies she is able to gain enough confidence to complete her required speech course.

b. Gergan felt frightened whenever it was time to take an exam so he learned to chew gum before each test.

c. Bill was a policeman who used to become violently ill when investigating a car accident. Now Bill investigates the incident then stops by the bar on his way home to relax.

d. Suzy never meant to cry in front of her instructor but the low grade on her test bothered her. Now Suzy does relaxation exercises before an exam and her grades aren't as low.

(not very confident) (very confident)
APPENDIX I:

PROSE LEARNING SCORE SHEET
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<th>SOCIAL PSYCHOLOGY</th>
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APPENDIX J:

CONFIDENCE LEVEL SCORE SHEET
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</table>

"Yes" indicates that this is confidence level including 0.00 for all responses which respondent omitted.
1. cottontail  7. evoke  13. placate  19. curtailment
   A. squirrel  A. wake-up  A. rehabilitate  A. expenditure
   B. poplar  B. surrender  B. plagiarize  B. abandonment
   C. boa  C. reconnoiter  C. depredate  C. abridgment
   D. marshy plant  D. transcend  D. apprise  D. improvement
   E. rabbit  E. call forth  E. conciliate  E. forgery

2. marketable  8. unobtrusive  14. surcease  20. perversity
   A. partisan  A. unintelligent  A. enlightenment  A. adversity
   B. jocular  B. epileptic  B. cessation  B. perviousness
   C. marriageable  C. illogical  C. inattention  C. travesty
   D. salable  D. lineal  D. censor  D. waywess
   E. essential  E. modest  E. substitution  E. gentility

3. boggy  9. terrain  15. apathetic  21. calumnious
   A. afraid  A. ice cream  A. wandering  A. complimentary
   B. false  B. final test  B. impassive  B. analogous
   C. marshy  C. tractor  C. hateful  C. slanderous
   D. dense  D. area of ground  D. prophetic  D. tempestuous
   E. black  E. weight  E. overflowing  E. magnanimous

4. gruesomeness  10. capriciousness  16. paternoster  22. illiberality
   A. blackness  A. stubbornness  A. paternalism  A. bigotry
   B. falseness  B. courage  B. patricide  B. imbecility
   C. vindictiveness  C. whimsicality  C. maldeiction  C. illegibility
   D. drunkenness  D. amazement  D. benediction  D. cautery
   E. ghastliness  E. greediness  E. prayer  E. immaturity

5. loathing  11. malestrom  17. opalescence  23. clabber
   A. diffidence  A. slander  A. opulence  A. rejoice
   B. laziness  B. whirlpool  B. sensecence  B. gossip
   C. abhorrence  C. enmity  C. bankruptcy  C. curdle
   D. cleverness  D. armor  D. iridescence  D. crow
   E. comfort  E. majolica  E. assiduity  E. hobble

6. bantam  12. tentative  18. lush  24. sedulousness
   A. fowl  A. critical  A. stupid  A. diligence
   B. ridcula  B. conclusive  B. luxurious  B. credulousness
   C. cripple  C. authentic  C. hazy  C. seduction
   D. vegetable  D. provisional  D. putrid  D. persiousness
   E. ensign  E. apprehensive  E. languishing  E. frankness
25. shortcake
A. condiment
B. pastry
C. fruit
D. sweetmeat
E. vegetable

31. demoniacal
A. aloof
B. mythical
C. thoughtful
D. fiendish
E. eccentric

37. corroboratory
A. plausible
B. anticipatory
C. confirmatory
D. explanatory
E. esoteric

43. aggrandize
A. the
B. imp
C. der
D. ama
E. enl

26. hardtack
A. nail
B. textile
C. weapon
D. wood
E. biscuit

32. highroad
A. mountain road
B. right of way
C. main road
D. roadbed
E. concrete road

38. figurine
A. metaphor
B. wine
C. poem
D. organ
E. statuette

44. effulge
A. pre
B. ou
C. ch£
D. rac
E. ene

27. commendable
A. pleasurable
B. charitable
C. lucrative
D. prescriptive
E. laudable

33. defog
A. dampen
B. forget
C. whip
D. mystify
E. belittle

39. rancorous
A. malignant
B. jubilant
C. abashed
D. inglorious
E. careless

45. aphasie
A. los
B. dri
C. ane
D. los
E. ras

28. nonchalant
A. sarcastic
B. discourteous
C. noble
D. unconcerned
E. unsophisticated

34. platoon
A. tableland
B. bridge of boats
C. body of soldiers
D. commonplace remark
E. frigate

40. inveteracy
A. habitualness
B. migration
C. bravery
D. covering
E. hatefulness

29. coloration
A. pigmentation
B. alternation
C. configuration
D. prevention
E. taint

35. dullard
A. peon
B. duck
C. braggart
D. thief
E. dunce

41. cholar
A. anger
B. chorister
C. guard
D. saliva
E. refrigerator

30. aridity
A. bitterness
B. surface
C. sonority
D. dryness
E. torridity

36. momentously
A. frivolously
B. moderately
C. weightily
D. momentarily
E. modishly

42. vacillation
A. purification
B. wavering
C. expulsion
D. tempting
E. foolishness

48. prurier
A. mo(
B. sa{
C. lu<
D. lus
E. see(
APPENDIX L:

INFORMED CONSENT FORM
APPENDIX B: PARTICIPANT INFORMATION FORM: TEST TAKING SKILLS

The purpose of this research is to explore some of the many characteristics adults returning to college bring into a test taking situation.

The learning task packet includes a series of 12 paragraphs typical of those found in college level textbooks. You will be asked to read the paragraphs and take a multiple choice test related to the material. As you answer each question, you will be asked to mark with an "x" on a line numbered from 1 to 9 how confident you are your answer was correct with "1" indicating a low degree of confidence in your response and "9" indicating a high degree of confidence in your response.

At the conclusion of this task you will be given a brief vocabulary test.

All information gathered for this study will be kept confidential. There will be no need to identify volunteers on the test materials. Your participation in this study is completely voluntary and you may choose not to participate at any point.

If you are willing to complete the accompanying task, please sign and date the blank spaces below.

I have read the description of the purposes and procedures of this study and understand that my participation is voluntary.

__________________________
Signature

__________________________
Date
APPENDIX M:

DEBRIEFING SHEET
A concern that ranks high on a list of fears about returning to school is how one will cope with the examination setting and whether the multiple choice tests will really assess what one has assimilated from the lectures and readings. One of the prime reasons for adult student drop-outs is that success on the exams did not match up with their perceptions of their capabilities. Those who "stick it out" gradually learn how to take tests and consequently grades tend to improve over time. Of course, other skills develop as well such as how to take notes, how to read more effectively and how to organize one's time.

The purpose of this research project is to explore one of the many characteristics an adult returning to college brings into a test taking situation. One attribute commonly observed in elderly adults placed in a test taking or risk taking situation is that rather than miss an answer and take the risk of being wrong, the elderly adult will choose not to respond to the question. This is termed an error of omission. There is a sound data base to indicate that errors or omission also indicate greater cautiousness on the part of the elderly individual making larger numbers of errors of omission.

There presently is no literature relative to adult students in risky test taking situations. The question addressed by this research is: "Will adults returning to school, when faced with a pressured multiple choice test situation choose to omit those responses when they are not sure of the answer or will they choose to guess?" In not taking complete advantage of probability guessing techniques, it is suspected that adults may try to be "too sure" of an answer before responding and consequently leave spaces blank on a test when a good guess may have help to improve the score.

In the task which you just completed, levels of guessing were controlled by the directions which told you to answer the questions in your own personal style, to guess or not to guess. Comparisons in the don't guess and guess conditions will be compared to your own personal style of test taking. In addition, your reactions to the directions will be compared to those of other students. The three categories of students who are participating in this experiment include: "typical" freshmen (18-19 year old entering college immediately after high school); scholastically normal adults (students 25 years of age and older who have not taken any post secondary credits); and, experienced adult students (students 25 years of age and older who have less than 45 quarter hour credits).

If you felt at all anxious during this experimental experience, I would suggest that you take advantage of the program offered by the ADULT STUDENT INFORMATION office (Kay Holmberg, 3rd Floor, Student Service Building 294-5056) or visit the ADULT STUDENT OFFICE 92nd floor, Memorial Union and inquire about taking advantage of the study skills program developed specifically for adults returning to school. They also offer a test anxiety relief program that is excellent. I participated in both upon my return to school four years ago. I found the information most helpful in learning to cope with the multiple pressures of school, work, marriage and parenthood.

I would be happy to supply you with a summary of what this project discovered relative to the concept of cautiousness and test taking skills of adult students. If you are interested in this report, please see me after you are finished reading this and I will place you name on a list to receive a project report. Thank you for participating in this project.

Joanne (Jodi) Engel  Department of Psychology  Spring 1979
APPENDIX N:

RATED CONFIDENCE LEVEL INCLUDING 0.00 FOR ALL OMITTED RESPONSES
Confidence level including 0.00 for all omitted responses

3 (Group) x 6 (Order) x 2 (Answer) x 3 (Instruction). In examining confidence level data for all responses including a score of 0.00 for all those omitted responses, main effects were found for both Answer \( F (1,72) = 31.39, p < .001 \) and Instructions, \( F (2,144) = 3.96, p < .02 \) conditions. There were higher \( (p < .001) \) confidence levels expressed for Answerable \( (\bar{x} = 58.4) \) than Non-answerable \( (\bar{x} = 53.4) \) questions. There were no significant differences in the confidence levels among the three instructional Sets \( (\bar{x} \text{ Don't Guess} = 53.4, \bar{x} \text{ Guess} = 58.0, \bar{x} \text{ Personal Style} = 56.2). \)

The Order by Instruction interaction was also significant \( F (10,144) = 3.37, p < .001 \). The means between the Don't Guess and Personal Style instruction were all significantly \( (p < .01) \) different except in Order Five \( (DG, P, G) \). The means are found in Table A-1. The Answer by Order by Instruction rated confidence level interaction was also significant, \( F (10,144) = 3.19, p < .001 \). The means for this complicated interaction are found in Table A-2.

3 (Group) x 2 (Sex) x 2 (Answer) x 3 (Instruction). Level of confidence for all questions with a 0.00 rated confidence level assigned to those questions respondents did not answer was also analyzed. Two significant factors emerged from this analysis. There was a significant main effect for Answer, \( F (1,84) = 22.97, p < .001 \). Higher confidence levels were expressed for Answerable \( (\bar{x} = 58.8) \) than Non-answerable questions \( (\bar{x} 53.7) \). The second main effect was for type of instruction, \( F (2,168) = 3.87, p < .05 \). The Rated Confidence Level mean for the
Table A-1

Means for Order by Instruction Interaction for Confidence Level Including 0.00 for All Omitted Responses on Prose Learning Task

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Order 1</th>
<th>Order 2</th>
<th>Order 3</th>
<th>Order 4</th>
<th>Order 5</th>
<th>Order 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't Guess</td>
<td>45.4</td>
<td>61.2</td>
<td>53.0</td>
<td>52.2</td>
<td>50.2</td>
<td>58.5</td>
</tr>
<tr>
<td>Guess</td>
<td>61.0</td>
<td>58.4</td>
<td>64.7</td>
<td>50.8</td>
<td>50.4</td>
<td>63.0</td>
</tr>
<tr>
<td>Personal Style</td>
<td>59.0</td>
<td>60.9</td>
<td>63.7</td>
<td>47.6</td>
<td>55.6</td>
<td>50.5</td>
</tr>
</tbody>
</table>
Table A-2
Means for Answer x Order x Instruction Interaction for Confidence Level
Including 0.00 for All Omitted Responses on Prose Learning Task

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Order</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Don't Guess</td>
<td>47.3</td>
<td>59.5</td>
<td>55.7</td>
<td>53.0</td>
<td>56.6</td>
<td>65.1</td>
</tr>
<tr>
<td>Guess</td>
<td>63.3</td>
<td>59.8</td>
<td>68.7</td>
<td>55.0</td>
<td>51.5</td>
<td>63.6</td>
</tr>
<tr>
<td>Personal Style</td>
<td>63.9</td>
<td>62.4</td>
<td>65.7</td>
<td>49.1</td>
<td>59.7</td>
<td>51.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Order</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Don't Guess</td>
<td>43.5</td>
<td>62.9</td>
<td>50.2</td>
<td>51.4</td>
<td>43.8</td>
<td>51.9</td>
</tr>
<tr>
<td>Guess</td>
<td>53.8</td>
<td>57.0</td>
<td>60.6</td>
<td>46.6</td>
<td>49.2</td>
<td>62.5</td>
</tr>
<tr>
<td>Personal Style</td>
<td>45.2</td>
<td>59.5</td>
<td>61.7</td>
<td>46.1</td>
<td>51.5</td>
<td>50.0</td>
</tr>
</tbody>
</table>
Guess instruction ($\bar{X} = 58.9$) was significantly different ($p < .05$) from the mean in the Don't Guess instruction ($\bar{X} = 53.4$) but not from the mean of the Personal Style instruction ($\bar{X} = 56.6$). There were no other significant differences among means in the instruction condition.
APPENDIX O:

HUMAN SUBJECTS APPROVAL FORM
1. Title of project (please type): Cautiousness as a Factor in the Test Taking Skills of Adult Students

2. I agree to provide the proper surveillance of this project to insure that the health and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

Joanne B. (Jodi) Engel 1/26/79
Typed Name of Principal Investigator Date Signature of Principal Investigator

152 Quadrangle - Psychology
Campus Address

4-1742 leave message
Campus Telephone

3. Signatures of others (if any), Date Relationship to Principal Investigator

On C. A. Cole 1/26/79 Major Professor

4. ATTACH an additional page(s) (A) describing your proposed research and (B) the subjects to be used, (C) indicating any risks or discomforts to the subjects, (D) covering any topics checked below. CHECK all boxes applicable.

- Medical clearance necessary before subjects can participate
- Samples (blood, tissue, etc.) from subjects
- Administration of substances (foods, drugs, etc.) to subjects
- Physical exercise or conditioning for subjects
- Deception of subjects (In a sense: debriefing sheet provided)
- Subjects under 14 years of age and/or
- Subjects 14-17 years of age
- Subjects in institutions
- Research must be approved by another institution or agency

5. ATTACH an example of the material to be used to obtain informed consent and which type will be used.

- Signed informed consent will be obtained.
- Modified informed consent will be obtained.

6. Anticipated date on which subjects will be first contacted: 2 5 79

Anticipated date for last contact with subjects: 5 1 79

7. If Applicable: Anticipated date on which audio or visual tapes will be erased or identifiers will be removed from completed survey instruments:

- not applicable

8. Signature of Head or Chairperson Date Department or Administrative Unit

- 1/26/79 Psychology

9. Decision of the University Committee on the Use of Human Subjects in Research

- Project Approved
- Project not approved
- No action required

George G. Karas 2/1/79