THE RELATIONSHIP OF LIFE CHANGE AND RISK TAKING TO ACADEMIC ACHIEVEMENT

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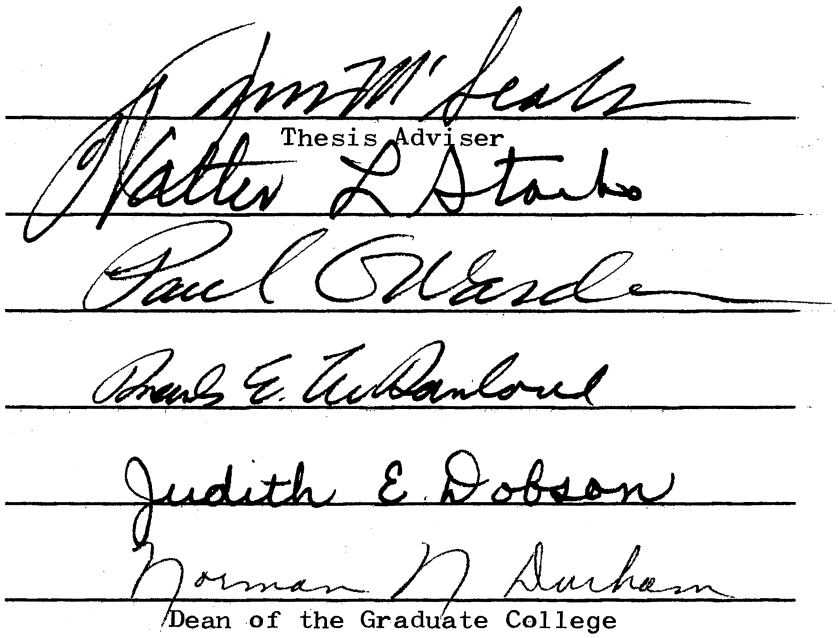

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CHAPTER I

INTRODUCTION

Introduction to the Problem

With the increased emphasis on open admissions in much of post secondary education, colleges and universities must look at the characteristics other than intellect. Earlier around the turn of the century, it was a foregone conclusion as to which candidate would go to college to study what, while the dropout, flunk-out, and transfer rates were low indeed (Fishman, 1962, pp. 666-667).

The above is no longer true today for the educational programs, both in the public schools and post secondary institutions have become so diverse, that the student population is no longer homogeneous. They differ in social composition, geographical origin and educational ability. Colleges and universities have applicants from secondary schools whose offerings vary widely in content and quality. Colleges and universities were forced to adopt certain selection criteria for admissions. According to Fishman (1962, p. 667) the development of the Army Alpha examination provided the country's colleges a reliable and objective measurement to sort applicants.

Admission policies at most colleges were based upon the assumption that there is certain information about the applicant which will assist in the prediction of success or failure for that applicant is that particular institution.

McQuary (1951, p. 1) also observed that it is difficult to determine which individuals will profit by the training offered in most educational institutions. Predicting who will be successful in post secondary institutions has been achieved to a limited degree through the efforts of achievement testing and other measures of intellectual capabilities. However, as Sanford (1970) indicated, there is a growing need to study the non-intellectual variables. Lavin (1965, p. 58) stated that the explained variance in the prediction of academic performance, that is, measures of academic ability accounts for 35 to 45 per cent. No other variable accounts for that much, and the unexplained variance is still over half. Earlier Knoell (1966) indicated that additional research should become involved with the students' personality, environmental pressures, and action programs.

Studies dealing with prediction of academic achievement have traditionally dealt with freshmen. The freshman student is the most vulnerable to dropping out of college. According to Chase (1965) one-half of all college dropouts who leave school during their freshman year fail to return as sophomores. Toffler (1970) indicated the problems of the college freshman can be related to environmental pressures by explaining the effects of decisional stress with sensory and cognitive overload can produce several forms of maladaptive behavior within the individual.

The cost is high for those 40 to 50 per cent of all freshmen who drop out of post secondary education. Not only the cost of lost earning potential but psychological loss is great. Those who did not complete intended degree programs are disappointed in themselves

Much research has been conducted trying to predict which students will drop out (A. W. Astin, 1971, 1972a; H. S. Astin, 1970; Astin and Panos, 1969; Cope, 1969; DeVecchio, 1972; Newman, 1965; Summerskill, 1962; Trent and Medsker, 1967) based on socioeconomic status, educational aspirations, student background characteristics, etc. (Astin, 1975, p. 22). Even with the partial listing of studies mentioned above, it seems little has been implemented. That is, students still seem to suffer from academic illness. According to Baird (1968) academic achievement can be predicted to a useful degree. Robert Nichols of the National Merit Scholarship Corporation proposed that variables other than intellect should be considered such as personality, interest, attitudes, etc. (Nichols, 1966).

According to Holmes, if large volumes of life change can be detected, the resulting physical and/or emotional illnesses can be prevented. He indicates that through counseling and encouraging those with high life change to try to become more stable and try not to have additional life changes during a short period of time this could help prevent additional illness (Time, 1970, p. 54).

Votaw (1938) found that on objective tests low risk takers perform much poorer than high risk takers. That low risk takers would attempt fewer questions even later, when removed from the testing situation they show they could answer them correctly.

It would seem then the above kinds of data could be collected on each student either during or prior to the orientation programs. Before their first semester in school, the information could be effectively integrated into the various types of admissions test and reading tests that are administered to the new students. The Social

and must deal with the disappointment of family and friends (Cope and Hannah, 1975, p. 6).

There is an additional loss, and that is to the institution. The graduate is a credit while the nongraduate erodes institutional credibility (Cope and Hannah, 1975, p. 6). This researcher feels that the effectiveness of higher education can be improved if we can learn why some students are successful and others are not when they have similar intellectual abilities.

Purpose of the Study

The purpose of the study was to investigate the relationship of selected nonintellectual characteristics with academic achievement. The research was an attempt to develop an academic achievement prediction model that could be used in orientation programs or by academic advisors.

Significance of the Study

The transition from high school to post secondary education has been a difficult move for many college freshmen, for Iffert (1957) found that 40 per cent of the entering freshmen never graduate. More recent studies by Summerskill (1962), Skaling (1971), Panos and Astin (1968), Astin (1972), Bayer et al. (1973) reconfirm the findings that about 40 per cent of the entering freshmen nationwide never graduate (Cope and Hannah, 1975, p. 1). Revlin (1965, p. V) and again with Feldman and Newcomb (1970) indicated that the first year of college is a crucial time for the student and has been traditionally characterized by the highest attrition rate of the four undergraduate years.

and Collegiate Life Experience Questionnaire and the Choice Dilemmas Procedure could also be administered. All information would be sent to trained academic advisors for interpretation and advising. Those students found to exhibit the score patterns of previous students who had experienced difficulty would be given the opportunity of a continued orientation group process as well as all the services (in counseling, testing, and reading clinics) and alternatives to help the student become successful in a university setting. Hopefully, the freshman attrition rate would be lessened.

Definition of Terms

Risk Taking - The willingness to take a stand, be less inhibited, and more experimental in behavior.

High Risk Takers - Those students who are in the bottom 27 per cent of the population as measured by the Choice Dilemmas Procedures.

Low Risk Takers - Those students who are in the top 27 per cent of the population as measured by the Choice Dilemmas Procedures.

Life Change - Life change includes any occurrences which requires some form of adaptive or coping behavior of an individual as it is perceived by that individual (Toffler, 1970, p. 292).

Low Academic Risk Population - This population consists of those students who score in top 27 per cent on the American College Test (ACT).

High Academic Risk Population - This population consists of those students who score in the bottom 27 per cent on the American College Test (ACT).

Academic Achievement - This term refers to the level of college success attained by a student as reflected in his cumulative grade point average (ETSU General Catalog, 1975, p. 24).

Statement of the Problem

The problem under investigation in this study is stated as follows: What is the relationship of life change and risk taking to academic achievement?

Research Questions

This dissertation should provide data which will help to answer the following questions.

1. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average in the low risk taking population?
2. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in the low risk taking population?
3. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in the low risk taking population?
4. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average in high risk taking population?
5. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in high risk taking population?

6. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in high risk taking population?
7. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average in low life change population?
8. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in low life change population?
9. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in low life change population?
10. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average in high life change population?
11. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in high life change population?
12. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in high life change population?
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18. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in high academic risk population?
19. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average in total population?
20. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in total population?
21. Does life change, risk taking, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in total population?

Limitations of the Study

This study was limited to individuals who were officially classified as freshmen during the 1975 fall semester at East Texas State University. The results should be generalized only to similar individuals in similar institutions.

The results of this investigation should be interpreted with caution until additional research can verify present findings.

Organization of the Study

The present chapter includes an introduction to subject investigation, the statement of the problem, purpose of the study, significance of the study, definition of terms and limitation. Chapter II contains a review of the literature pertinent to this study. Chapter III describes the procedures, population and the statistical processes used in this study. The fourth chapter contains a discussion of the findings of this study. Chapter V includes a summary, conclusions, and recommendations for further research.

CHAPTER II

A REVIEW OF THE RELATED LITERATURE

Introduction

The purpose of this chapter is to present the relevant literature related to academic achievement, life change and risk taking. Also the concern for the development of nonintellectual characteristics in predicting academic performances will be discussed.

Academic Achievement

Daniel Harris (1940) reviewed 328 investigations of factors that affected college grades which were completed from 1930-1937. He classified these studies into the following types: (1) intelligence versus high school grades versus examination, etc., (2) personal details and background, (3) high school factors, (4) study habits, methods, etc., (5) teaching methods and conditions, (6) incentives and direct motivation, (7) student load, (8) extracurricular factors, (9) curricula and occupational choice, and miscellaneous. Harris was critical with many of the studies for not presenting the results in statistical reliability terms, and for not holding intelligence constant. Harris felt the factors of student achievement in order of importance are as follows (1940, p. 171):

(1) Ability (or intelligence, or scholastic aptitide, etc.).

(2) Effort (or drive, or degree of motivation, etc.).

(3) Circumstances (personal, social, economic, academic, etc.).

McQuary (1951, p. 3) pointed out that in spite of the numerous studies involved with prediction of academic sources, the prediction correlations of nonintellectual variables tend to be low with a range of .30 to .50.

David Lavin (1965, p. 52) pointed out that the best single predictor of academic success have been: rank in high school class, achievement tests and scholastic aptitude tests. Astin (1975, p. 45) said, "By far the greatest predicting factor is the students' past academic record and academic ability." More valid predictions can be obtained when the above measures are combined (Lavin, 1965, p. 52). McQuary (1951, pp. 3-4) concluded even the most effective combinations could not correlate closely enough with success in college to enable guidance personnel to predict academic success with any degree of success.

During the years 1948 and 1958, Fishman and Pasanella (1960) reviewed all college guidance and selection investigations, both published and unpublished. There were a total of 580 investigations conducted during that ten year span. The conclusions are: the most common prediction were high school grades and scores on some standardized measure of scholastic ability, while the grade point average was used as the criteria of success. It was also pointed out that the above prediction had an average multiple correlation of .55 with an additional point .05 added if a personality test was another variable to be included in the regression analysis (Fishman, 1962, p. 669).

When Schroeder and Sledge (1966, pp. 97-98) reviewed, first hand, sixty studies of variables that relate to academic success in college, their conclusions were much the same as the other researchers. They found that high school performance was somewhat better than subject matter tests, and the subject matter tests, in turn, were better than measures of mental ability.

There seems to be a consensus of opinion concerning intellectual factors and academic achievement. Past academic performance, the high school academic record, is the best single prediction of success. At the same time it was also noted that when past performance was combined with other variables, a better prediction could be obtained (Cope and Hannah, 1975).

The American College Test (ACT) is a multidimensional instrument used for the prediction of college success. The ACT is not only a test battery (English Usage, Mathematics Usage, Social Science, and Natural Science), but also a biographical section referred to as the Student Profile section (ACT Technical Report, 1973, pp. 13-14).

The basis for the development of the ACT battery was to measure those skills, as directly as possible, which are applicable to college work (ACT Technical Report, 1973, p. 30). To determine the ability of the ACT data to predict academic achievement, studies were made by Munday (1965; 1967; 1970) and Richards, Holland and Lutz (1967). Munday (1967, p. 404) used ACT test scores and high school grades as predictors, and the criterian variable was the college grade point average. The sample consisted of over 21,300 students from 398 high schools that were in the ACT Research Service in 1963, 1964, or 1965. He concluded that ACT scores and self-reported high school grades

evidenced predictive validity. He also noted that when ACT scores and high school grades were combined, the predictive validity coefficient increased. His results supported those findings elsewhere in the literature.

Merritt (1972) investigated the feasibility of predicting academic success of low socioeconomic students with the ACT. He found that students from low socioeconomic levels on the average scored lower on the ACT than other socioeconomic levels. The predictive validity coefficient was significant at .001 level between predicted and earned grade-point average. He concluded that the ACT composite score was a valid prediction of college grades for low socioeconomic students.

Lavin (1965, p. 58) stated that the explained variance in the prediction of academic performance, that is, measures of academic ability accounts for 35 to 45 per cent. He points out that no other variable accounts for that much, and that unexplained variance is still over half. It is his feeling that nonintellectual characteristics should be investigated as to their contribution to academic achievement. Nichols (1966, p. 872) made a similar recommendation, which was to investigate something other than intellect.

The majority of the investigations that deal with academic achievement use the freshman class as the population to be studied. Henley (1969, p. 21) described the freshman year as a pressure year; academic, social and parental pressures.

Many colleges are developing programs to lessen the drop out rate (Henley, 1969, p. 22). Earlier, Nichols (1966) and, later, Sanford (1970) feel most programs are not able to detect the target populations and cannot identify the student who needs help. This would justify

continued research into the relationship of nonintellectual factors and academic achievement.

There have been many studies dealing with predicting academic achievement with nonintellectual characteristics. Fishman (1962, p. 669) found 168 separate investigations that dealt with non-intellectual factors and academic achievement. Stagner (1933) indicated a slight relationship between personality tests and grade averages. Of the nonintellectual faction studied, motivation was the most important according to Harris (1940, p. 151).

Schroeder and Sledge (1966, p. 98) reviewed over sixty articles first hand and 100 second hand. Their review led them to the following statements:

> Interest and Motivation: overwhelmingly positive in the relationship to achievement. Some measures of interest have been found to correlate with college performances almost as well as measures of attitude. Motivational factors, however, have not as yet been adequately measured.
>
> Attitudes, Beliefs and Values: although considerable variations were found in reference to specifics, authors seemed to agree that those values and attitudes commonly referred to as 'middle class' were conductive to achievement.
>
> Personal and Social Adjustment: rating scales by teachers and administrators were found to be the most promising means of measurement. Personality inventories, on the other hand, were found to be of little value in predicting achievement. Sociability of the students was reported as having both positive and negative relationships. Anxiety was generally reported as having positive effects on grades up to a point above which it acted as a deterrent.
>
> Course and Course Patterns: with a few exceptions, no significant relationship was found.
>
> Control: In all cases, public high school graduates were found to be equal or superior to private high school graduates in terms of college achievement.
>
> Size of High School: generally, no significant relationship was found.

> Family Size and Structure: both large number of siblings and absence of siblings were negatively related to college achievement. Not many studies were reviewed, however.
>
> Socio-Economic Status: the results of studies reviewed were inconclusive. Educational levels of parents were revealed as a more positive force than occupational status.
>
> Religious and Ethnic Group: the findings of the studies were inconclusive.
>
> Characteristics of the Home Community: the findings were inconclusive.
>
> Age: age was found to be negatively related to achievement. This relationship was not maintained, however, when the problem was approached from the standpoint of time span between high school graduation and college enrollment.
>
> Sex: generally, women were found to be superior to men in achievement.
>
> Part-Time Work: authors generally found either no relationships or slightly positive relationships.
>
> Residence: the findings were inconclusive.
>
> College Majors: the findings were inconclusive.
>
> Counseling and Study Habits: a somewhat positive relationship was found in most cases.
>
> Activities and Number of College Units: the findings were inconclusive (p. 98).

Summerskill (1962) found contradictory results in his review of academic and nonintellectual variables associated with attrition. Some of the reasons of poor studies were poor control of variables and lack of fundamental insight into the psychology of the student. He found that the most important factors leading to attrition were academic, motivation and finances.

Again the literature points out the need for additional investigation in the area of nonintellectual contribution to academic success in college. Sanford (1970) believes that post secondary education should look into psychology to better understand the human characteristics that relates to achievement rather than limit ourselves to the academic areas alone. Knoell (1966, pp. 69-70) feels that personality assessment of students and environmental press should be investigated

in the future. Summerskill (1962, p. 648) advocated the need to know what really motivates the successful college student.

Life Change

The latter part of the 1960's and early part of the 1970's has seen a rapid growth in the concern for man and his environment. The various problems that man has been confronted with (i.e. energy crisis, pollution, internal problems within the United States, etc.) have forced him to adapt to his environment at a rapid pace. Man, by his history, has proven to be most adaptable to extreme environments such as living for long periods in the far northern cold to living in the hottest and dryest areas of the deserts. Man, however, remains a biological organism, and must operate within well defined limits (Toffler, 1970, p. 325).

According to Toffler (1970, p. 330), research into the effects of rapid and recurrent change on man is still in relatively primitive states of development. The primary concern of his earlier studies was the implication of life style change and its effect on physical and mental health.

The rapid change of man's environment and man's striving to adjust represents what Hinkle (1957) calls a "human ecology" approach to medicine. He contends that diseases are not caused by a single, specific factor, such as a germ or virus. Diseases are results from an accumulation of many factors, including the general nature of the environment around the organism.

Thomas H. Holmes (1967) has produced research evidence which supports the earlier work of Hinkle. The first instrument capable of

quantifying and qualifying the amount of change which occurs to man was developed by Holmes and Rahe (1967). The name of the instrument is the Social Readjustment Rating Questionnaire. Data has been generated through the use of this instrument that gives evidence that excessive change occurring within a short time span can cause illness, depression (Time, 1970, p. 54) or injury (Bramwell, 1971).

There is a strong positive correlation between magnitude of life change (life crisis) and seriousness of the chronic illness experience (Dohrenwend and Dohrenwend, 1974, p. 58). It is postulated that life change events, by evoking adaptive efforts by the human organism that are faulty in kind and duration, lower "body resistance" and enhance the probability of disease occurrence (Dohrenwend and Dohrenwend, 1974, p. 68).

Many students go through a tremendous life style change in the transition from the somewhat narrow confines of a high school environment to a university environment where much of the responsibility for survival, both academically and physically is placed on the individuals themselves. Independence from parents allows for great readjustment, plus the additional responsibility for their own behavior. Meeting new friends, new time schedules and new activities from which they must constantly be taking risks, when confronted with dilemmas that are new, are just a part of their new experiences.

Adolf Meyer developed what he called a "life chart." It was an organization of medical data in such a unique method so as to show the relationship of biological, psychological and sociological phenomenon to the processes of health and diseases in man. Much of the content used in the research of Holmes was given great attention by Meyer

(Toffler, 1972).

It was Harold G. Wolff who brought to the surface that, "health of the individual is intimately bound up with the adaptive demands placed on him by the environment" (Toffler, 1972, p. 327). Holmes and Masuda (1970) stated it this way, "research indicated that 'stressful' life events, by evoking psychophysiological reaction, played an important causation role in the natural history of many diseases." Holmes contributed the information that maybe not specific change, but rather a general rate of change in one's life could be the most important environmental factor (Toffler, 1970, p. 328).

An instrument was developed by Holmes and Rahe to measure life change. They called their instrument The Social Readjustment Rating Questionnaire, then later the Social Readjustment Rating Scale (Holmes and Masuda, 1973, p. 162). The items that compose the scale are in basically two categories: those indicative of occurrences either positive or negative that involve the individual. There are some commonality to the occurrences of each event, and there are some adaptive or coping behavior on the part of the individual involved (Holmes and Masuda, 1973, p. 162).

Since Meyer, Wolff, Holmes and Rahe all had medical backgrounds, their major concern was to show the relationship between environmental stress and illness (Wildman, 1974, p. 19). Twenty-five hundred officers and enlisted personnel aboard three U. S. Navy cruisers were used in a study by Rahe (Holmes and Masuda, 1973, p. 179). Six months prior to leaving on a cruise the men were asked to report life changes using the SRRS. The high risk group consisted of the upper thirty per cent of the scores and had nearly ninety per cent more first

illnesses than the low risk group. During the six month cruise period, the high risk group consistently reported more illness each month than the low risk group.

In other efforts to predict illness Rahe and Holmes measured the amount of life change and reported illnesses of 84 physicians. Life change data was collected over 18 months. After eight months had elapsed 49 per cent of the high risk group reported illness (Holmes and Masuda, 1973, pp. 178-179).

Studies indicate a positive relationship between increasing amounts of life change and sudden cardiac death (Rahe and Lind, 1971) and the time of onset of myocardial infarcation (Rahe and Paasikini, 1971; Theorell and Rahe, 1971; Lundberg, Ulf, Theorell and Lind, 1975). Holmes and Masuda (1973, p. 178) reported research relating life change to the occurrence of fracture, beginning or pregnancy, and time of incarceration in a federal prison.

Araiyo, Van Arsdel, Holmes and Dudley (1973, p. 360) investigated the relationship between psychosocial assets, life change and the severity of chronic asthma. The Berle Index was used to measure the psychosocial assets and the schedule of recent experiences (SRE) was used to measure life change. Findings were that patients with low psychosocial assets with low life change scores required low doses of steriod, while patients with low psychosocial assets and high life change required high doses of steroids to control their disease.

Dekker and Webb (1974, p. 129) used two psychiatric groups and one normal group with forty members in each of their samples. They used the Social Readjustment and Rating Scale to measure life change. Findings were that life change scores were significantly correlated

with age, manifest anxiety and social desirability. Manifest anxiety and social desirability scores were obtained from the Minnesota Multiphase Personality Inventory (MMPI).

Wildman (1974) investigated life change and its effects on self attitudes toward others, mental health and role performance. He measured mental health by using Longner's Mental Health Inventory. He found that life change had its greatest adverse effect on mental health. He also found consistent but slight adverse effects between life change and attitude toward self and others. To measure attitudes toward self and others he used Berger's Acceptance of Self and Others Scale.

A sample of 262 university students were used by Costantini, Danes, Braun and Iernolino (1973) to investigate the relationship between life style change, personality, and mood factors. The students completed the following instruments: Schedule of Recent Experience (SRE), Psychological Screening Inventory (PSI), and the Profile of Mood States (PMS). Significant positive correlations were found between SRE scores and PMS scores of tension, depression and anger, fatigue, confusion, and total mood disturbance. The SRE scores and the PSI scores of alienation, social nonconformity and expression, and defensiveness were found to correlate significantly (Constantini et al. 1973, p. 1146).

Harris (1972, p. iv) investigated the relationship between life change and "academic illness." To measure the amount of life change he used the Social and Collegiate Readjustment Rating Scale (SRRS). Harris found that high amounts of life change had a direct relationship to significantly lower grade point averages while controlling levels of

college readiness.

Bassetti (1973, p. 77) was able to support some of Harris' (1972) findings. Bassetti (1973) investigated the relationship between life change, trait anxiety, dogmatism and grade point average of freshmen in low, medium and high academic risk populations.

Schuette (1975) found no significant relationship between goal preference and locus of control with life change. However, he recommends that additional research in the area of life change and academic performance should be completed.

Risk Taking

Risk taking behavior occurs where there is a desirable goal and a definite lack of certainty that the goal can be reached (Poe, 1971, p. 8). Luce and Raiffa (1957) discussed two types of decisions that come from situations where the amount of risk is known. The two decisions are "decision under risk" and "decision under uncertainty." "Decision under risk" is where the probabilities of success is known. Gambling is a situation where the probabilities of success can be computed. However, in real life situations, the probabilities of success is not as finite as in gambling. Situations where the individuals are not able to compute their success as accurately is "decision under uncertainty" (Luce and Raiffa, 1957).

Kogan and Wallach (1967) indicate the following as an example of two alternatives in a betting situation:

A
1 chance in 2 of winning 50¢
and
1 chance in 2 of losing 50¢
vs.
B
1 chance in 4 of winning $1.20
and
3 chances in 4 of losing 30¢

> The expected value of bet A equals 1/2 (50¢) + 1/2 (-50¢) = 25¢ = 0, whereas the expected value of bet B equals 1/4 ($1.20) + (-30¢) = 30¢ - 22 1/2 - 7 1/2¢. These values simply indicate that bet A on the average (over an infinite series of plays) will yield nothing, whereas bet B over the same infinite series will produce an average earning of 7 1/2¢. Evidently, from the standpoint of an expected value theory, choosing alternative B would constitute a rational decision. If all decisions could be cased into an expected value framework and if subjects uniformly maximized expected value in their choice behavior, the present essay could be ended at this point. Regrettably, neither of the foregoing conditions holds, and this has enormously complicated the work of those who seek a general model for gambling behavior, let alone decision making conceived more broadly (p. 116).

Individuals do not always make the best decision that would maximize their chances of winning as observed by Edwards (1953). The subjects were observed under three conditions as they utilized rolls on a pinball machine. The conditions were: just imagine they were gambling, gambling for worthless chips, and gambling for real money. Edwards' research showed that his subjects preferred a 4/8 probability of winning while avoiding a 6/8 probability of winning (Edwards, 1953).

Relationships found by Atkinson, Bastian, Earl and Litwin (1960) between need achievement and risk taking were stronger when the risks involved concerned questions of skill rather than chance. This supports the view that decisions in chance and skill situations are not psychologically the same (Kogan and Wallach, 1967, p. 7).

According to Wallach and Kogan (1961) the person who is more cautious in the hypothetical dilemmas of choice situation, also tended to attach lower probability estimates to prediction of how well he would do in a motor performance context. This finding indicated the existence of some generality across decision making tasks (Wallach and Kogan, 1961).

In Littig's (1962) study prize points were awarded instead of a monetary prize. He was criticized by Kogan and Wallach (1967), for they believed that incentives mean more in a skill oriented task than in a chance task. However, studies by Kotz (1962) and Suydom and Myers (1962) failed to provide any conclusive evidence that the use of real as opposed to imaginary incentives have any great effect on the outcome of the subject's behavior.

A study to investigate the relationship between the achievement motive, goal setting, and probability preferences of college students was conducted by Atkinson, Bastion, Earl and Litwin (1960). This study was based on a model constructed by Atkinson (1957) to:

> . . . explain how the motive to achieve and the motive to avoid failure influence behavior in any situation where performance is evaluated against some standard of excellence (p. 371).

In a study conducted by Atkinson et al. (1960), the subjects were male college students. The French Test of Insight was used to measure the strength of N (need) - achievement. The subjects then engaged in a shuffleboard game and a choice of shooting from fifteen lines of varying distance from the goal. The incentive was imaginary money. Atkinson's (1957) theory concerning motivational determinants of risk taking behavior was supported by the results of this study. The very difficult region in the shuffleboard game was preferred by both the

high and low n-achievement groups. The subject high in n-achievement had a preference for intermediate risks where their skill played a part.

Several studies dealing with intellectual performance and risk taking on objective examinations are Votaw (1936) and Swineford (1938, 1941). Both of these studies involved the "guess versus do not guess" test instructions or the "penalty for guessing" instructions. Votaw (1936) found that the type of test instructions which discouraged guessing penalized the submissive individuals much more than the individuals who were willing to take a chance and guess. Even though the research showed the submissive group could answer many of the omitted questions, they would not even attempt them.

In Swineford's (1941) study, he found guessing or gambling behavior was higher on unfamiliar material.

Liverant and Scodel (1960) conducted a study to investigate the relationships between risk in the form of gambling with dice and the personality factor of external and internal control. The results showed the high risk (low probability) bets were chosen more often by those subjects judged to be externally controlled, while a higher level of confidence was shown by the internally controlled group as evidenced by the larger sums of money wagered.

Wallach and Kogan (1961) investigated the level of risk taking as shown by elderly groups and groups of college students. The findings indicated that regardless of sex, the older subjects were more conservative than the younger. Another observation was that men tended to reach their optimum level of conservatism and then tended to level off earlier than women.

Scodel et al. (1959, p. 20), as a result of their studies, concluded that low risk takers as compared with high risk takers "are more other directed, more socially assimilated, more middle-class oriented group."

Summary

The present review of the literature suggests that academic achievement can be predicted to a limited extent using achievement test scores and past academic performance. However, these predictions are not accurate 50 per cent of the time. Also, it is obvious from the literature that life change accumulation has a relationship with the onset of physical illnesses and in some cases, academic illness. The level of conservatism within the individual is related to the amount of risk one will endure. This was observed to have no difference if real rewards or imaginary rewards were given.

CHAPTER III

DESIGN AND METHODOLOGY

Introduction

It was the primary purpose of this study to investigate several nonintellectual characteristics and determine if they would independently or collectively yield a higher prediction of academic success. The dependent variable was the student's grade point average at the end of the Fall semester. The independent variables consisted of the scores obtained from the Social and Collegiate Life Experience Questionnaire, the composite score on the American College Test (ACT), Choice Dilemmas Procedure; also the determination of the subjects' place of residence was obtained to determine if they lived on campus in a residence hall or off campus. Sex of the subjects was also recorded. Each independent variable was divided into the top 27 per cent and bottom 27 per cent and further divided into male and female.

Subjects

The population consisted of 622 freshmen students. The 622 subjects were composed of all freshmen that completed the Choice Dilemmas Procedures, Social and Collegiate Life Experience Questionnaire, and whose American College Test composite scores and grade point averages for the Fall semester were available. The students

had to enroll in and complete the 1975 fall semester at East Texas State University.

Both in the Early Enrollment Conferences and the 1975 Fall Orientation first time freshmen were administered the Choice Dilemmas Procedure and Social and Collegiate Life Experience Questionnaire. They were instructed to be as truthful as possible. Those students who did not complete both instruments or if the ACT composite score could not be obtained were eliminated from the study. Although name and social security number were necessary for additional collection of data, the students were assured that their answers would be maintained confidential and the results would in no way be identified with them.

For those subjects on whom all the data was collected but for some reason they did not complete the fall semester, therefore not having a grade point average of which there were 117. This population was used to answer one research question and is found in Appendix C.

Instrumentation

This section provides a description of the measuring instruments used in this study. The collection of data was approved by the Office of Testing, Orientation and School Relations as well as the office of the Associate Dean for Student Life. The instruments to be used are: The Social and Collegiate Life Experience Questionnaire (SCLEQ) (Appendix A) and the Choice Dilemmas Procedure (Appendix B).

Social and Collegiate Life Experience Questionnaire

The Social and Collegiate Life Experience Questionnaire (SCLEQ) was used to measure the amount of life change for each freshman in the population (Schuette, 1975). The SCLEQ is a modification of a scale developed by Coddington (1972 a,b) for senior high school students which he called the Senior High Life Change Scale from the adult scale, Social Readjustment Rating Scale which Holmes and Rahe developed earlier (Coddington, 1972a,b, pp. 15-16).

When Holmes and Rahe (1967, p. 215) first developed their Social Readjustment Rating Scale they sampled 394 subjects. The following groups were correlated: male vs. female; single vs. married; age 30 vs. ages 30-60; age 30 vs. age 60; ages 30-60 vs. age 60; 1st generation vs. 2nd generation; 1st generation vs. 3rd generation; college vs. four years of college; lower class vs. middle class; white vs. Negro; Protestant vs. Catholic; Protestant vs. Jewish; Protestant vs. other religions; Protestant vs. no religious preference.

All of the coefficients of correlation were above 0.90. The one exception was that between white and Negro which was 0.82.

The data was recalculated using Spearman's rank order correlation coefficient and yielded almost identical results. It was found when using Kendall's coefficient of concordance (W) for the samples, the coefficient was 0.477 which was significant at ($P \leq .005$) (Holmes and Masuda, 1973, p. 167).

Pasley's work (1969) deals with seventh grade, ninth grade and eleventh grade, college freshmen and original samples of adults with

seventh grade being the youngest population to be studied. Inter-correlation between the above mentioned groups yielded a Spearman's rho .78. This indicates that concensus life change is well established in adolescence (Dohrenwend and Dohrenwend, 1974, p. 53).

Casey, Masuda and Holmes (1967) used the Social Readjustment Rating Scale to demonstrate consistency of recall. Fifty-five subjects completed the questionnaire twice, with Time 2 coming nine months after Time 1. Comparison of the data from the two questionnaires indicated that the instrument was reliable. The findings viewed from Time 1 and Time 2 were significant at the .0005 level of confidence. The data indicated that the amount of recall over time decreased and that which was recalled tended to be consistent (Dohrenwend and Dohrenwend, 1974, pp. 55-56).

Bromwell modified the Social Readjustment Rating Scale, to become the Social and Athletic Readjustment Scale. His study was used to evaluate life change and injuries in college athletes. He used Spearman's rank-order correlation coefficient and found it to be 0.85 (Holmes and Masuda, 1973, p. 167).

Coddington, Professor of Psychiatry and Pediatrics at Ohio State University, College of Medicine (1972, pp. a, b) modified the Social Readjustment Rating Scale so it would contain statements related to childhood life style. Interrater agreement was very good with rank-order correlations of 0.90 or greater (Holmes and Masuda, 1973, p. 170).

After Coddington completed the revisions he changed the name to the Senior High Life Change Scale. The revisions Coddington made were so the statements would be appropriate for high school students (1972 a, pp. 15-16).

Harris (1972) developed a Social and Collegiate Readjustment Rating Scale that was derived from the Social Readjustment Rating Scale. However, Schuette (1975) in his investigation of the instrument felt that it would not be appropriate for first time freshmen (1975, p. 38). Schuette did incorporate two statements contained in Harris' work, but not found in Coddington's scale. The statements are: a minor violation of the law (traffic ticket, disturbing the peace, etc.) and a major violation of the law which required formal court proceeding (1975, p. 39). Coddington's original scale had 42 items which after including the above two statements brought the total to 44 items. The items were added in the following places: "Minor violations of the law," in number four and "Major violations of the law," in number 25.

To determine the amount of contribution to life change a numerical value was determined for each. Residence masters' degree students enrolled in Practicum in Pupil Personnel and Guidance were asked to categorize the two items relative to the original 42 items. An arithmetic mean was determined on the items in order to obtain their value. With the addition of the two items the following questionnaire resulted: Social and Collegiate Life Experience Questionnaire (Schuette, 1975, p. 39).

Choice Dilemmas Procedure

The Choice Dilemmas Procedure was used to measure the risk taking level of each freshman in the population. This instrument was developed by Wallach and Kogan and is of a semiprojective nature, the subject being asked how he would advise others in the situations as

presented (1964, p. 25). The instrument is composed of 12 items, each representing a choice dilemma between a risky and safe course of action.

> The twelve everyday situations are presented to the subjects. The central person is forced with the choice of two courses of action, one which is more risky than the other, also more rewarding if successful. The subject must indicate how desirable he feels it would be for the person to follow the more risky course of action and succeed by selecting the probability of success that is deemed sufficient to warrant the risky alternative. Hence the index measures the relative disutility or deterence of failure vs. the utility of success regarding the more risky alternative (1961, p. 27).

Wallach and Kogan conducted a study concerned with decision making and change with age and at the same time developed the following reliability coefficients for the Choice Dilemmas Procedure. An odd-even reliability coefficient was determined using the Spearman-Brown formula. The following was computed .53 for young males, .63 for young females, .80 for older males, and .80 for older females (Wallach and Kogan, 1961, pp. 29-30).

Concerning the instruments, construct validity as a risk taking measure, Wallach and Kogan indicate their findings are consistent with a risk taking interpretation. For example, degree of conservatism as measured with the present instrument, increases with age from young adulthood to old age (Wallach et al., 1962, p. 78).

The response categories were arranged from chances of one in ten upward for the odd items and from high probabilities down to changes of one in ten for the even items. Refusal to recommend the risky alternative no matter what the probability of success was scored as ten. It can be observed that higher scores are associated with greater conservatism (Kogan and Wallach, 1964, p. 25).

Other Data

The office of Testing, Orientation and School Relations at East Texas State University provided the ACT composite score on each student in the study. At the end of the semester the office of Testing, Orientation and School Relations assisted in providing the grade point average on each of the subjects in the study. The University Housing system provided the information concerning the residency status of the subjects in the population.

Setting of the Study

The setting was East Texas State University which is situated in the northeast part of Texas at Commerce. The University is a multi-purpose regional institution serving students from Texas, other states and several foreign countries (East Texas State University, 1975). Degrees are offered at the bachelor, masters, and doctoral levels. The University is divided into the College of Business Administration, the College of Education, the College of Liberal and Fine Arts, the College of Sciences and Technology, the Graduate School and the Division of Continuing Education.

A wide variety of backgrounds is represented in the student population. The population is primarily composed of Caucasions, Blacks and Mexican-Americans.

Research Procedures

The purpose of this study was to investigate the effects of life change and risk taking on academic achievement. It was hoped that

with the inclusion of these two nonintellectual variables it would be possible to make predictions of academic success even more accurate; thus enabling advisors to assist students in making better academic decisions, such as taking four courses instead of five or starting a study skills program initially rather than waiting until after the semester has begun.

All freshmen who attended one of the four early enrollment conferences or the regular Fall Orientation program were asked to complete the Social and Collegiate Life Experience Questionnaire and the Choice Dilemmas Procedures. Also, to the scores from the above named instruments, American College Testing Program (ACT) composite scores were obtained on each student. In addition, the grade point average (gpa) for the Fall semester, their residency status, living in a residence hall or not living in a residence hall and sex will also be recorded. The data was then codes on code sheets for keypunching.

According to Kelly (1939, p. 17) the greatest discrimination between high and low scores in a group of data occurs between the upper and lower 27 per cent of scores. Therefore, the students were divided into two academic risk groups. The low academic risk group was composed of the top 27 per cent of the population as measured by the ACT. Those students scoring at the bottom 27 per cent of the population as measured by the ACT composed of the high academic risk group. The scores on the Social and Collegiate Life Experience Questionnaire and the Choice Dilemmas Procedure were divided as mentioned above. The top 27 per cent was the high life change group and high risk taking group while the bottom 27 per cent was the low life change and low risk taking group. Furthermore, each of the three

groups: (1) life style change, (2) risk taking, (3) ACT were divided by sex and also by their living status, that is, living in the residence hall or not living in the residence hall.

Treatment of Data

Two statistical procedures were selected for use in the analysis of the data operation; a step-wise multiple regression analysis and a Pearson product-moment correlation. The computations were performed in the Computer Center at East Texas State University using an I.B.M. 360 model 50 computer. The program source was the Bio Medical Data Program from the University of California at Los Angeles.

A step-wise multiple regression analysis was used to determine the best combination of variables in predicting success (N=622). That procedure was used to analyze data extracted from student responses to three instruments. Separate prediction models were developed for Males (N=283) and females (N=339) as well as single prediction models utilizing all present variables. Additional prediction models were developed for the following populations: top 27 per cent life change (N=168); top 27 per cent males life change (N=76); top 27 per cent females life change (N=92); bottom 27 per cent life change (N=168); bottom 27 per cent males life change (N=76); bottom 27 per cent females life change (N=92); top 27 per cent risk taking (N=168); top 27 per cent males risk taking (N=76); top 27 per cent females risk taking (N=92); bottom 27 per cent risk taking (N=168); bottom 27 per cent males risk taking (N=76); bottom 27 per cent females risk taking (N=92); top 27 per cent high academic risk (N=168); top 27 per cent males high academic risk (N=76); top 27 per cent females high academic risk (N=92);

bottom 27 per cent low academic risk (N=168); bottom 27 per cent males low academic risk (N=76); bottom 27 per cent females low academic risk (N=92). The ($p \leq 0.05$) level was employed to determine the significance for each of the research questions.

In addition to the above data analysis operation a data treatment procedure was used in order to determine the relationship between the population with grade point averages and that population without grade point averages. While this treatment was not a major concern of the present study, it showed that the relationship between the two populations were not dissimilar (see Appendix C).

Summary

There were 622 subjects that comprized the population of the study. The instruments used in the study, Choice Dilemmas Procedures and the Social and Collegiate Life Experience Questionnaire were administered to first time freshmen that attended one of the four Early Enrollment Conferences or the 1975 Fall Orientation.

There was a discussion of the instruments used in the study with information concerning validity and reliability of each. A step-wise multiple regression analysis was used to determine the best single predictor and best combination of predictors of academic success. This statistic was used with all of the subpopulations.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this chapter is to present the statistical analysis of the data. Following a statement of each research question the results of the obtained statistical computations relevant to each question will be presented.

The primary intent of the present investigation was to develop an improved prediction model of academic achievement using nonintellectual characteristics. The variables included by this researcher are: life change accumulation, risk taking behavior, location of residence, and academic achievement (ACT composite). Appropriate F tables were consulted to determine if the variables were significant at the ($p \leq 0.05$) level of confidence.

Research Questions

Question Number One

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average in the low risk taking population?

In answer to question number one the investigation indicates that academic achievement (ACT composite) is a significant predictor in

excess of the ($p \leq 0.001$) level of confidence. However, the variable life change was not significant at the ($p \leq 0.05$) level but was approaching significance. Location of residence and the individual risk taking behavior did not contribute to the prediction model as is illustrated in Table I.

TABLE I

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO IN LOW RISK TAKING POPULATION (N=168)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.6334	0.4011	111.1908***
2	LC	0.6376	0.4065	1.4874
3	RH	0.6376	0.4066	0.0265
4	RT	0.6377	0.4066	0.0147

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/163

Question Number Two

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly

predict grade point average for males in the low risk taking population?

In the prediction model for males in the low risk taking population the data reveals that ACT composite score is significant at the ($p \leq 0.001$) level of confidence. Life change, risk taking and location of residence make little contribution as is illustrated in Table II.

TABLE II

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR MALES IN THE LOW RISK TAKING POPULATION (N=76)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.6786	0.4605	63.1730***
2	LC	0.6885	0.4741	1.8778
3	RT	0.6912	0.4778	0.5176
4	RH	0.6915	0.4781	0.0442

*$p \leq 0.05$

**$p \leq 0.01$

***$p \leq 0.001$

df = 4/71

Question Number Three

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in the low risk taking population?

Academic achievement was significant at the ($p \leq 0.001$) level of confidence. Life change accumulation, location of residence and risk taking behavior made some contribution but they were not significant at the ($p \leq 0.05$) level of confidence as is illustrated in Table III.

TABLE III

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR FEMALES IN THE LOW RISK TAKING POPULATION (N=92)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.6049	0.3659	51.9225***
2	LC	0.6113	0.3737	1.1109
3	RH	0.6165	0.3801	0.9123
4	RT	0.6166	0.3802	0.0191

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/87

Question Number Four

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average in the high risk taking population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.001$) level of confidence. Location of residence was significant at ($p \leq 0.01$) level of confidence. Risk taking behavior and life change contribute to the model but was not significant at the ($p \leq 0.05$) level of confidence.

TABLE IV

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO IN THE HIGH RISK TAKING POPULATION (N=168)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.4779	0.2284	49.1405***
2	RH	0.5009	0.2509	4.9475**
3	RT	0.5061	0.2562	1.1693
4	LC	0.5081	0.2581	0.4287

* $p \leq 0.05$

** $p \leq 0.01$

*** $p \leq 0.001$

df = 4/163

Question Number Five

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in the high risk population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.001$) level of confidence. Life change and location of residence did contribute to the regression model, but was not significant at the ($p \leq 0.05$) level of confidence. Risk taking behavior did not contribute, therefore, was not included in the model.

TABLE V

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR MALES IN THE HIGH RISK TAKING POPULATION (N=76)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.5250	0.2756	28.1591***
2	LC	0.5295	0.2804	0.4841
3	RH	0.5306	0.2816	0.1176

* $p \leq 0.05$
** $p \leq 0.01$
*** $p \leq 0.001$
df = 3/73

Question Number Six

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in the high risk population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.001$) level of confidence. Location of residence at the ($p < 0.01$) level of confidence. Risk taking behavior and life change contributed to the model but was not significant at the ($p \leq 0.05$) level of confidence.

TABLE VI

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR FEMALES IN THE HIGH RISK TAKING POPULATION (N=92)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.5339	0.2850	35.8804***
2	RH	0.5748	0.3304	6.0290**
3	RT	0.5836	0.3406	1.3569
4	LC	0.5876	0.3453	0.6331

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/87

Question Number Seven

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average in the low life change population?

Academic achievement (ACT composite) is significant at the ($p \leq 0.001$) level of confidence while the risk taking variable is approaching significance. Life change variable contributed some, while location of residence made little contribution as is illustrated by the following table.

TABLE VII

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO IN THE LOW LIFE CHANGE POPULATION (N=168)

Step No.	Entered	Multiple R	Multiple R^2	F
1	ACT	0.4978	0.2478	54.6840***
2	RT	0.5057	0.2557	1.7621
3	LC	0.5093	0.2593	0.7973
4	RH	0.5096	0.2596	0.0859

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/163

Question Number Eight

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in the low life change population?

Academic achievement is significant at the ($p \leq 0.001$) level of confidence while location of residence is approaching significance. Risk taking and life change variables contribute little in that order.

TABLE VIII

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR MALES IN THE LOW LIFE CHANGE POPULATION (N=76)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.5422	0.2940	30.8108***
2	RH	0.5585	0.3119	1.9060
3	RT	0.5638	0.3178	0.6214
4	LC	0.5698	0.3246	0.7172

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/71

Question Number Nine

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in the low life change population?

The data shows that academic achievement (ACT composite) is significant beyond the ($p \leq 0.001$) level of confidence. In addition, the risk taking variable is significant at the ($p \leq 0.01$) level of confidence. Location of residence was approaching significance, however, the life change variable made little contribution to grade point average.

TABLE IX

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR FEMALES IN THE LOW LIFE CHANGE POPULATION (N=92)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.5186	0.2690	33.1154***
2	RT	0.5569	0.3101	5.3087**
3	RH	0.5725	0.3278	2.3151
4	LC	0.5787	0.3349	0.9276

* $p \leq 0.05$

** $p \leq 0.01$

*** $p \leq 0.001$

df = 4/87

Question Number Ten

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average in the high life change population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.001$) level of confidence. Risk taking behavior was significant at the ($p \leq 0.05$) level of confidence. Location of residence was not significant at the ($p \leq 0.05$) level of confidence while life change accumulation made some contribution.

TABLE X

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO IN THE HIGH LIFE CHANGE POPULATION (N=168)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.6949	0.4830	155.0534***
2	RT	0.7045	0.4964	4.3953*
3	RH	0.7099	0.5039	2.4935
4	LC	0.7115	0.5063	0.7787

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/163

Question Number Eleven

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in the high life change population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.001$) level of confidence. Risk taking behavior and location of residence contributed some but was not significant at the ($p \leq 0.05$) level of confidence. Life change accumulation made no contribution, therefore was not entered in the model.

TABLE XI

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR MALES IN THE HIGH LIFE CHANGE POPULATION (N=76)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.7386	0.5465	88.8524***
2	RT	0.7411	0.5493	0.5993
3	RH	0.7415	0.5497	0.0715

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 3/72

Question Number Twelve

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in the high life change population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.001$) level of confidence. Risk taking, location of residence and life change accumulation was not significant at the ($p \leq 0.05$) level of confidence.

TABLE XII

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR FEMALES IN THE HIGH LIFE CHANGE POPULATION (N=92)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.6810	0.4637	77.8152***
2	RH	0.6915	0.4781	2.4570
3	RT	0.7010	0.4914	2.2943
4	LC	0.7061	0.4986	1.2600

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/87

Question Number Thirteen

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average in the low academic risk population?

Academic achievement was significant at the ($p \leq 0.01$) level of confidence. Location of residence was significant at the ($p \leq 0.05$) level of confidence. Life change and risk taking behavior contributed to the regression model but was not significant at the ($p \leq .05$) level of confidence.

TABLE XIII

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR THE LOW ACADEMIC RISK POPULATION (N=168)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.2266	0.0513	8.9813**
2	RH	0.2733	0.0747	4.1649*
3	LC	0.2851	0.0813	1.1801
4	RT	0.2905	0.0845	0.5697

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/163

Question Number Fourteen

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in the low risk population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.01$) level of confidence. Risk taking behavior was also significant at the ($p \leq 0.01$) level of confidence. Life change made some contribution while location of residence made little contribution, but neither was significant at the ($p \leq 0.05$) level of confidence.

TABLE XIV

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR MALES IN THE LOW ACADEMIC RISK POPULATION (N=76)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.3144	0.0988	8.1159**
2	RT	0.3969	0.1575	5.0866**
3	LC	0.4149	0.1722	1.2376
4	RH	0.4164	0.1734	0.1062

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/71

Question Number Fifteen

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in the low academic risk population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.01$) level of confidence. Location of residence was significant at the ($p \leq 0.05$ level of confidence. Risk taking behavior and life change were not significant at the ($p \leq 0.05$) level of confidence.

TABLE XV

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR FEMALES IN THE LOW ACADEMIC RISK POPULATION (N=92)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.3002	0.0901	8.9152**
2	RH	0.3535	0.1249	3.5411*
3	RT	0.3786	0.1433	1.8876
4	LC	0.3813	0.1454	0.2081

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/87

Question Number Sixteen

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average in high academic risk population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.01$) level of confidence. Risk taking behavior and life change contributed to the regression model but was not significant at the ($p \leq 0.05$) level of confidence. Location of residence did not contribute to the model, therefore, was not included in the equation.

TABLE XVI

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO IN THE HIGH ACADEMIC RISK POPULATION (N=168)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.2088	0.0436	7.5691**
2	RT	0.2445	0.0598	2.8398
3	LC	0.2562	0.0656	1.0225

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 3/164

Question Number Seventeen

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in the high academic risk population?

Academic achievement was significant at the ($p \leq 0.01$) level of confidence. While risk taking behavior and location of residence contributed to the regression model but was not significant at the ($p \leq 0.05$) level of confidence. Life change made no contribution, therefore, was not included in the equation.

TABLE XVII

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR MALES IN THE HIGH ACADEMIC RISK POPULATION (N=76)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.3428	0.1175	9.8539**
2	RT	0.3524	0.1242	0.5559
3	RH	0.3572	0.1276	0.2809

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 3/72

Question Number Eighteen

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in the high academic risk population?

Academic achievement (ACT composite) was significant at the ($p \leq 0.05$) level of confidence. Life change accumulation and risk taking behavior contributed to the regression model but was not significant at the ($p \leq 0.05$) level of confidence. Location of residence did not contribute, therefore, was not included in the equation.

TABLE XVIII

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR FEMALES IN THE HIGH ACADEMIC RISK POPULATION (N=92)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.2447	0.0599	5.7303*
2	LC	0.2670	0.0713	1.0976
3	RT	0.2883	0.0831	1.1329

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 3/88

Question Number Nineteen

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average in the total population?

The data indicates that academic achievement is significant well in excess of the ($p \leq 0.001$) level of confidence, while location of residence is significant at the ($p \leq 0.01$) level of confidence and risk taking behavior is significant at the ($p \leq 0.05$) level of confidence. Life change made little contribution to the model.

TABLE XIX

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE^2 AND F RATIO FOR THE TOTAL POPULATION (N=622)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.5643	0.3184	289.6877***
2	RH	0.5692	0.3240	5.0889**
3	RT	0.5718	0.3270	2.7243*
4	LC	0.5726	0.3279	0.8543

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/617

Question Number Twenty

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for males in the total population?

For males in the total population academic achievement was significant at the ($p \leq 0.001$) level of confidence. Risk taking behavior was not significant at the ($p \leq 0.05$) level of confidence. While location of residence and life change made no contribution, therefore, was not included in the equation.

TABLE XX

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR MALES IN THE TOTAL POPULATION (N=283)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.5999	0.3599	154.4110***
2	RT	0.6006	0.3608	0.3895

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 2/280

Question Number Twenty-One

Does life change accumulation, risk taking behavior, academic achievement (ACT composite) and location of residence significantly predict grade point average for females in total population?

For females in the total population academic achievement (ACT composite) was significant in excess of the ($p \leq 0.001$) level of confidence. Location of residence was also significant at the ($p \leq 0.001$) level of confidence. While risk taking behavior and life change accumulation was significant at the ($p \leq 0.05$) level of confidence.

TABLE XXI

VARIABLES AS THEY ENTERED THE EQUATION MULTIPLE R, MULTIPLE R^2 AND F RATIO FOR FEMALES IN THE TOTAL POPULATION (N=339)

Step No.	Entered	Multiple R	R^2	F
1	ACT	0.5747	0.3303	166.2363***
2	RH	0.5883	0.3461	8.1037***
3	RT	0.5943	0.3532	3.6771*
4	LC	0.5990	0.3588	2.8925*

*$p \leq 0.05$
**$p \leq 0.01$
***$p \leq 0.001$
df = 4/334

Summary of Results

In the course of this study, 21 questions were presented. Regression models were developed for each of the 21 research questions. The criterion variable was grade point average and the predicting variables were academic achievement (ACT composite), life change, risk taking behavior and location of residence. Life change, risk taking behavior and academic achievement (ACT composite) were divided into the top 27 per cent and bottom 27 per cent. Each of the predicting variables was evaluated with an F test to determine significance at the ($p \leq 0.05$) level of confidence.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The present study was proposed in view of the need for research in the development of a better prediction model of academic achievement for entering freshmen. It is through this type of research that post secondary education can hope to reduce the percentage of those freshmen who never return to their sophomore year. The percentage of those freshmen is estimated to be between 40 and 50 per cent.

Through a more accurate prediction model by including non-intellectual characteristics, post secondary institutions will be able to individualize and personalize the educational process. The inclusion of non-intellectual components could be assessed during the universities' orientation programs. The results could then be interpreted to the students' trained academic advisors. Then if a special program was needed (i.e. group work dealing with assertiveness training, developing a more positive self concept or assisting the student with involvement in organizations) it could be accomplished through the resources available to the advisors.

As previously indicated in the review of the literature, it was pointed out that measures of academic ability only account for 35 to 45 per cent of the explained variance in the prediction of academic

performance. The inclusion of non-intellectual characteristics in the prediction model have been recommended by earlier researchers (see Chapter II). The examination of the variables in this investigation included life change accumulation, risk taking behavior, academic achievement (ACT composite), and location of residence. The Social and Collegiate Life Experience Questionnaire was used to measure the amount of life change accumulation and was developed by Schuette (1975). That scale was based on the work of Holmes and Rahe (1967).

Risk taking behavior was measured with the Choice Dilemmas Procedure. This instrument was developed by Wallach and Kogan (1961). The instrument consists of 12 items with each representing a safe and risky course of action.

The total population of 622 first time freshman students were grouped into the following sub-populations: 1. total, 2. total female, 3. total male; 4. top 27 per cent life change; 5. males in top 27 per cent life change; 6. females in top 27 per cent life change; 7. bottom 27 per cent life change; 8. males bottom per cent life change; 9. females bottom 27 per cent life change; 10. top 27 per cent risk taking; 11. males top 27 per cent risk taking; 12. females top 27 per cent risk taking; 13. bottom 27 per cent risk taking; 14. males bottom 27 per cent risk taking; 15. females bottom 27 per cent risk taking; 16. top 27 per cent academic risk; 17. males top 27 per cent academic risk; 18. females top 27 per cent academic risk; 19. bottom 27 per cent academic risk; 20. males bottom 27 per cent academic risk; 21. females bottom 27 per cent academic risk. A regression model was developed for each of the above populations. Each variable: life change, risk taking behavior, academic achievement (ACT composite), and location

of residence was tested with an $\underline{F}$ test at the ($p \leq 0.05$) level of confidence.

Conclusions

Building on past research, the present investigation supports the use of non-intellectual variables in decisions concerned with predicting academic achievement in higher education. It was clearly evident from results of this study that measures of academic aptitude remain the single best predictor of success in college.

The findings based on non-intellectual variables indicated that data based on life change and risk taking behavior did not provide significant information for prediction at the present time. This conclusion seems to imply that regardless of the type of experience a year prior to entering college, it has no effect on grade point average. While risk taking behavior was not significant as a predictor, it appeared to be a more relevant variable for males than for females. Freshmen males who exhibit more assertive behavioral responses tend to be better students than those who are more inhibited, while freshmen females tend to be less assertive, more conservative in their decisions concerning desired goals. This may also reflect the maturity level of the freshmen students.

The non-intelligent variable of location of residence was not significant for males, but proved to be highly significant for females. Thus, it may be concluded that where a female lives during her first year of college is relevant to her academic success. While more research is called for, the present study does support the need for sex differentiation in academic counseling programs for male and

female freshmen.

Females living in residence halls had higher grade point averages than females living off campus. Perhaps a university-based living environment is more important to females than to males. It may also be that living in the mainstream of college activities could produce a higher level of motivation for freshmen women.

In addition, women possibly are more comfortable in conforming to the requirements of residence hall living than are men. Hopefully, the present study will stimulate durther reserch concerning the influence of living environment and academic success.

Recommendations

Research in the area of developing prediction models for academic success should be continued. In this researcher's opinion the use of multiple regression analysis is the appropraite method for use in future studies. Additional variables to be included in new research could be as follows:

1. financial assistance (campus employment, work study, grants, loans, scholarships.
2. size of high school.
3. size of community.
4. subject's age.
5. educational decision as to their proposed major.
6. extra curricular activities participated in in their first semester of post secondary education.

The additional variables mentioned above are by no means complete, but suggestions that in this author's opinion will strengthen future prediction models.

A SELECTED BIBLIOGRAPHY

American College Testing Program.

1972 Assessing Students on the Way to College: Technical Report for the Assessment Program, Vol. I. Iowa City: ACT Publications.

Araugo, G.

1973 "Life Change, Coping Ability and Chronic Intrinsic Asthma." Journal of Psychosomatic Research, 17, 359-363.

Astin, A.

1975 Preventing Students From Dropping Out. San Francisco: Jossey-Bass, Inc.

Atkinson, J. W.

1957 "Motivational Determinants of Risk-Taking Behavior." Journal of Abnormal and Social Psychology, 64, 359-372.

Atkinson, J. W., J. R. Bastion, R. W. Earl, and G. H. Litwin.

1960 "The Achievement Motive, Goal Setter and Probability Preferences." Journal of Abnormal and Social Psychology, 60, 27-34.

Baird, L. and J. Richards, Jr.

1968 "The Effects of Selecting College Students by Various Kinds of High School Achievement." ACT Research Report, No. 23. Iowa City: ACT publications.

Bassetti, R.

1973 "Life Change, Trait Anxiety, Dogmatism, and Academic Performance." (Unpublished Ed.D. dissertation, East Texas State University.)

Bromwell, S.

1971 "Personality and Psychosocial Variables in College Athletes." (Unpublished Thesis, University of Washington.)

Chase, C. T.

1965 "The University Freshman Dropout." Unpublished report, (ERIC Research in Education Abstract, ED 003 672).

Coddington, R. D.

1972 "The Significance of Life Events as Etiological Factors in the Diseases of Children, I - A Survey of Professional Workers." Journal of Psychosomatic Research, 16, 7-18.

1972b "The Significance of Life Events as Etiological Factors in the Diseases of Children, II - A Study of a Normal Population." Journal of Psychosomatic Research, 16, 205-213.

Cope, R. G. and W. Hannah.

1975 Revolving College Doors. New York: John Wiley and Sons.

Costantini, A. F. et al.

1973 "Personality and Mood Correlates of Schedule of Recent Experience Scores." Psychological Reports, 32, 1143-1150.

Dekker, D. J. and J. T. Webb.

1974 "Relationship of the Social Readjustment Rating Scale to Psychiatric Patient Status, Anxiety and Social Desirability." Journal of Psychosomatic Research, 19, 125-130.

Dixon, W. J.

1975 Biomedical Computer Programs. Los Angeles: University of California Press.

Dohrenwend, B. and B. Dohrenwend.

1974 Stressful Life Events. New York: John Wiley and Sons.

1974 East Texas State University General Catalog, Vol. LVIII, No. 1. Commerce, Texas: East Texas State University.

Edwards, W.

1953 "Probability Preferences in Gambling." American Journal of Psychology, 66, 349-365.

Feldman, K. A. and T. M. Newcomb.

1970 The Impact of College on Students, Vol. I. San Francisco: Jossey-Bass, Inc.

Fishman, J. A.

1962 "Some Social-Psychological Theory for Selecting and Guiding College Students." In the American College. Edited by Nevitt Sanford. New York: John Wiley and Sons, pp. 666-667.

Fishman, J. A. and A. K. Pasanella.

1960 "College Admission Selection Studies." Review of Educational Research, 30, 298-310.

Guilford, J. P.

1965 Fundamental Statistics in Psychology Education. New York: McGraw-Hill Book Co.

Harris, D.

1940 "Factors Affecting College Grades: A Review of Literature." Psychological Bulletin, 37, 125-166.

Harris, P.

1972 "The Relationship of Life Change to Academic Performance Among Selected College Freshmen at Varying Levels of College Readiness." (Unpublished Ed. D. dissertation, East Texas State University.)

Henley, A.

1969 "A Survival for College Freshmen." Today's Health, 47, 20-23, 83.

Hinkle, L. E., Jr.

1957 "Studies in Human Ecology: Factors Relevant to the Occurrence of Bodily Illness and Disturbances in Mood, Thought, and Behavior in Three Homogeneous Population Groups." American Journal of Psychiatry, 114, 212-220.

Holmes, T. H. and M. Masuda.

1970 "Life Change and Illness Susceptibility." A Report to the American Association for the Advancement of Science.

Holmes, T. H. and R. H. Rahe.

1967 "The Social Readjustment Rating Scale." Journal of Psychosomatic Research, 11, 213.

Katz, L.

1962 "Monetary Incentive and Range of Payoffs as Determiners of Risk Taking." Journal of Experimental Psychology, 64, 591-594.

Kelley, T. L.

1939 "The Selection of Upper and Lower Groups for the Validation of Test Items." Journal of Educational Psychology, 30, 17-24.

Knoell, D. A.

1966 "A Critical Review of Research on the College Dropout." The College Dropout and the Utilization of Talent. Edited by Lawrence Pervin, Louis Reik and Willard Dalrymple. Princeton, N. J.: Princeton University Press, p. 38.

Lavin, D. E.

1965 The Prediction of Academic Performance. New York: Russell Sage Foundation.

Littig, L. W.

1962 "Effects of Skill and Chance Orientations on Probability Preferences." Psychological Reports, 10, 67-70.

Liverant, S. and A. Scodel.

1960 "Internal and External Control as Determinants of Decision Making Under Conditions of Risk." Psychological Reports, 7, 59-67.

Luce, R. and H. Raiffer.

1957 Games and Decisions. New York: Wiley Press.

Lundberg, U., T. Theorell, and E. Lind.

1975 "Life Changes and Myocardial Infarction: Individual Differences in Life Change Scaling." Journal of Psychosomatic Research, 19, 27-32.

Malloy, J.

1955 "The Prediction of College Achievement with Life Experience Inventory." Educational and Psychological Measurement, 15, 170-180.

McQuary, J. P.

1951 "Relationship Between Non-Intellectual Characteristics and Academic Achievement." (Unpublished Ph.D. dissertation, University of Wisconsin.)

Mechanic, R.

1962 Students Under Stress. Glencoe, Illinois: Free Press.

Merritt, R.

1972 "The Predictive Validity of the American Test for Students from Low Socioeconomic Levels." Educational and Psychological Measurement, 32, 443-445.

Munday, L.

1965 Comparative Predictive Validities of the American College Tests and Two Other Scholastic Aptitude Tests. ACT Research Reports, No. 6. Iowa City, Iowa: ACT publications.

1967 "Predicting College Grades Using ACT Data." Educational and Psychological Measurement, 27, 401-406.

1970 "Factors Influencing the Predictability of College Grades." American Educational Research Journal, 7, 99-108.

Nichols, R. C.

1966 "Non-Intellective Predictors of Achievement in College." Educational and Psychological Measurement, 26, 866-915.

Poe, B. J.

1971 "The Effect of Sensitivity Training on the Relationship Between Risk Taking and Other Selected Behavioral Factors." (Unpublished Ph.D. dissertation, East Texas State University.)

Rahe, R. H. and E. Lind.

1971 "Psychosocial Factors and Sudden Cardiac Death: A Pilot Study." Journal of Psychosomatic Research, 15, 19-24.

Rahe, R. H. and J. Pasikivi.

1971 "Psychosocial Factors and Myocardial Infarction. II - An Out-patient Study in Sweden." Journal of Psychosomatic Research, 15, 33-39.

Ravlin, H. W.

1965 The First Years in College: Preparing Students for a Successful College Career. Boston: Little, Brown and Co.

Sanford, N.

1970 "Loss of Talent." Issues of the Seventies. F. F. Harcleroud (Ed.). San Francisco: Jossey-Bass, Inc., p. 68.

Schuette, C.

1975 "Life Change, Lows of Control, Needs and Academic Performance of College Freshmen." (Unpublished doctoral dissertation, East Texas State University.)

Schroeder, W. L. and G. W. Sledge.

1966 "Factors Related to Collegiate Academic Success." Journal of College Student Personnel, 7, 97-104.

Scodel, A., P. Ratoosh, and J. S. Minas.

1959 "Some Personality Correlates of Decision Making Under Conditions of Risk." Behavior Science, 4, 19-28.

Slakter, R.

1967 "Risk Taking an Objective Examination." American Educational Research Journal, 4, 31-43.

Stagner, R.

1933 "The Relation of Personality to Academic Aptitude and Achievement." Journal of Educational Research, 26, 562-559-648.

Suydom, M. and J. L. Myers.

1962 "Some Parameters of Risk Taking Behavior." Psychological Reports, 10, 559-562.

Swineford, F.

1938 "The Measure of a Personality Trait." Journal of Educational Psychology, 29, 295-300.

1949 "Analysis of a Personality Trait." Journal of Educational Psychology, 32, 438-444.

1972 "The Hazards of Change," Time, 97, 54.

Theorell, T. and R. H. Rahe.

1971 "Psychosocial Factors and Myocardian Infarction. I - An Outpatient Study in Sweden." Journal of Psychosomatic Research, 15, 25-31.

Toffler, A.

1970 Future Shock. New York: Random House.

Votaw, D. F.

1936 "The Effect of Do-Not-Guess Directions on the Validity of True-False of Multiple Choice Tests." Journal of Educational Psychology, 27, 698-703.

Wallach, M. A. and N. Kogan.

1964 Risk Taking: A Study in Cognition and Personality. New York: Holt, Rinehart, and Winston.

1959 "Sex Differences and Judgment Processes." Journal of Personality, 27, 555-564.

1961 "Aspects of Judgment and Decision Making: Interrelationship and Changes With Age." Behavioral Science, 6, 22-26.

Wallach, M. A., N. Kogan, and D. Bem.

1962 "Group Influence on Individual Risk Taking." Journal of Abnormal and Social Psychology, Vol. 65, No. 2, 75-86.

Ward, J. H. and E. Jennings.

1973 Introduction to Linear Models. New Jersey: Prentice-Hall, Inc.

Wilda, R., J. Hubble, and E. E. Kennedy.

1971 "Life Change and Infectious Mononucleosis." Journal of American College Health Association, 20, 115-119.

Wildman, R. C.

1974 "The Effects of Life Change on Self-Attitudes Towards Others, Mental Health, and Role Performance in a College Sample." (Unpublished Ph.D. dissertation, University of Nebraska.)

Ziller, R. C.

1975 "Vocational Choice and Utility for Risk." Journal of Counseling Psychology, 4, 61-64.

APPENDIX A

SOCIAL AND COLLEGIATE LIFE EXPERIENCE

QUESTIONNAIRE

Name _____ Social Security Number _____

Social and Collegiate Life Experience

Questionnaire

Read the following items carefully. Place a check (✓) in the space beside each event which you have experienced within one year of today's date.

_____ 1. Breaking up with a boyfriend or girlfriend.

_____ 2. Increase in number of arguments with parents

_____ 3. Preparing to enter college

_____ 4. Minor violation of the law (traffic ticket, disturbing the peace, etc.)

_____ 5. Beginning to date

_____ 6. Outstanding personal achievement

_____ 7. Becoming involved with drugs or alcohol

_____ 8. Brother or sister leaving home

_____ 9. Not making an extracurricular activity he/she wanted to be involved in

_____10. Decrease in number of arguments with parents

_____11. Decrease in number of arguments between parents

_____12. Change in parents' financial status

_____13. Death of a close friend

_____14. Increase in number of arguments between parents

_____15. Death of a grandparent

_____16. Mother beginning to work

_____17. Suspension from school

_____18. Becoming a full fledged member of a church

_____19. Serious illness requiring hospitalization of parent

_____ 20. Change in child's acceptance by peers

_____ 21. Move to a new school district

_____ 22. Change in father's occupation requiring increased absence from home

_____ 23. Failure of a grade in school

_____ 24. Serious illness requiring hospitalization of brother or sister

_____ 25. Major violation of the law which required formal court proceedings

_____ 26. Loss of job by parent

_____ 27. Being accepted at a college of his/her choice

_____ 28. Pregnancy in unwed teenage sister

_____ 29. Birth of a brother or sister

_____ 30. Marital separation of parents

_____ 31. Serious illness requiring hospitalization of child

_____ 32. Divorce of parents

_____ 33. Fathering an unwed pregnancy

_____ 34. Addition of third adult to family

_____ 35. Marriage of parent to step-parent

_____ 36. Unwed pregnancy of child

_____ 37. Having a visible congenital deformity

_____ 38. Getting married

_____ 39. Death of parent

_____ 40. Discovery of being an adopted child

_____ 41. Death of a brother or sister

_____ 42. Jail sentence of a parent for 30 days or less

_____ 43. Acquiring a visible deformity

_____ 44. Jail sentence of a parent for one year or more

APPENDIX B

CHOICE DILEMMAS PROCEDURE

Name _____ Social Security No. _____

Choice Dilemmas Procedure

Instructions. On the following pages, you will find a series of situations that are likely to occur in everyday life. The central person in each situation is faced with a choice between two alternative courses of action, which we might call X and Y. Alternative X is more desirable and attractive than alternative Y, but the probability of attaining or achieving X is less than that of attaining or achieving Y.

For each situation on the following pages, you will be asked to indicate the minimum odds of success you would demand before recommending that the more attractive or desirable alternative, X, be chosen.

Read each situation carefully before giving your judgment. Try to place yourself in the position of the central person in each of the situations. There are twelve situations in all. Please do not omit any of them.

1. Mr. A, an electrical engineer, who is married and has one child, has been working for a large electronics corporation since graduating from college five years ago. He is assured of a lifetime job with a modest, though adequate, salary, and liberal pension benefits upon retirement. On the other hand, it is very unlikely that his salary will increase much before he retires. While attending a convention, Mr. A is offered a job with a small, newly founded company which has a highly uncertain future. The new job would pay more to start and would offer the possibility of a share in the ownership if the company survived the competition of the larger firms.

Imagine that you are advising Mr. A. Listed below are several probabilities or odds of the new company's proving financially sound.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. A to take the new job.

_____ The chances are 1 in 10 that the company will prove financially sound.
_____ The chances are 3 in 10 that the company will prove financially sound.
_____ The chances are 5 in 10 that the company will prove financially sound.
_____ The chances are 7 in 10 that the company will prove financially sound.
_____ The chances are 9 in 10 that the company will prove financially sound.
_____ Place a check here if you think Mr. A should not take the new job no matter what the probabilities.

2. Mr. B, a 45-year-old accountant, has recently been informed by his physician that he has developed a severe heart ailment. The disease would be sufficiently serious to force Mr. B to change many of his strongest life habits--reducing his work load, drastically changing his diet, giving up favorite leisure-time pursuits. The physician suggests that a delicate medical operation could be attempted which, if successful, would completely relieve the heart condition. But its success could not be assured, and in fact, the operation might prove fatal.

Imagine that you are advising Mr. B. Listed below are several probabilities or odds that the operation will prove successful.

Please check the lowest probability that you would consider acceptable for the operation to be performed.

_____ Place a check here if you think Mr. B should not have the operation no matter what the probabilities.
_____ The chances are 9 in 10 that the operation will be a success.
_____ The chances are 7 in 10 that the operation will be a success.
_____ The chances are 5 in 10 that the operation will be a success.
_____ The chances are 3 in 10 that the operation will be a success.
_____ The chances are 1 in 10 that the operation will be a success.

3. Mr. C, a married man with two children, has a steady job that pays him about $6000 per year. He can easily afford the necessities of life, but few of the luxuries. Mr. C's father, who died recently, carried a $4000 life insurance policy. Mr. C would like to invest this money in stocks. He is well aware of the secure "blue-chip" stocks and bonds that would pay approximately 6% on his investment. On the other hand, Mr. C has heard that the stocks of a relatively unknown Company X might double their present value if a new product currently in production is favorably received by the buying public. However, if the product is unfavorably received, the stocks would decline in value.

Imagine that you are advising Mr. C. Listed below are several probabilities or odds that Company X stocks will double their value.

Please check the lowest probability that you would consider acceptable for Mr. C to invest in Company X stocks.

_____ The chances are 1 in 10 that the stocks will double their value.
_____ The chances are 3 in 10 that the stocks will double their value.
_____ The chances are 5 in 10 that the stocks will double their value.
_____ The chances are 7 in 10 that the stocks will double their value.
_____ The chances are 9 in 10 that the stocks will double their value.
_____ Place a check here if you think Mr. C should not invest in Company X stocks, no matter what the probabilities.

4. Mr. D is the captain of College X's football team. College X is playing its traditional rival, College Y, in the final game of the season. The game is in its final seconds, and Mr. D's team, College X, is behind in the score. College X has time to run one more play. Mr. D, the captain, must decide whether it would be best to settle for a time score with a play which would be almost certain to work, or on the other hand, should he try a more complicated and risky play which could bring victory if it succeeded, but defeat if not.

Imagine that you are advising Mr. D. Listed below are several probabilities or odds that the risky play will work.

Please check the lowest probability that you would consider acceptable for the risky play to be attempted.

_____ Place a check here if you think Mr. D should not attempt the risky play no matter what the probabilities.
_____ The chances are 9 in 10 that the risky play will work.
_____ The chances are 7 in 10 that the risky play will work.
_____ The chances are 5 in 10 that the risky play will work.
_____ The chances are 3 in 10 that the risky play will work.
_____ The chances are 1 in 10 that the risky play will work.

5. Mr. E is president of a light metals corporation in the United States. The corporation is quite prosperous, and has strongly considered the possibilities of business expansion by building an additional plant in a new location. The choice is between building another plant in the U. S., where there would be a moderate return on the initial investment, or building a plant in a foreign country. Lower labor costs and easy access to raw materials in that country would mean a much higher return on the initial investment. On the other hand, there is a history of political instability and revolution in the foreign country under consideration. In fact, the leader of a small minority party is committed to nationalizing, that is, taking over, all foreign investments.

Imagine that you are advising Mr. E. Listed below are several probabilities or odds of continued political stability in the foreign country under consideration.

Please check the lowest probability that you would consider acceptable for Mr. E's corporation to build a plant in that country.

_____ The chances are 1 in 10 that the foreign country will remain politically stable.
_____ The chances are 3 in 10 that the foreign country will remain politically stable.
_____ The chances are 5 in 10 that the foreign country will remain politically stable.
_____ The chances are 7 in 10 that the foreign country will remain politically stable.

_____ The chances are 9 in 10 that the foreign country will remain politically stable.
_____ Place a check here is you think Mr. E's corporation should not build a plant in the foreign country, no matter what the probabilities.

6. Mr. F is currently a college senior who is very eager to pursue graduate study in chemistry leading to the Doctor of Philosophy degree. He has been accepted by both University X and University Y. University X has a world-wide reputation for excellence in chemistry. While a degree from University X would signify outstanding training in this field, the standards are so very rigorous that only a fraction of the degree candidates actually receive the degree. University Y, on the other hand, has much less of a reputation in chemistry, but almost everyone admitted is awarded the Doctor of Philosophy degree, though the degree has much less prestige than the corresponding degree from University X.

Imagine that you are advising Mr. F. Listed below are several probabilities or odds that Mr. F would be awarded a degree at University X, the one with the greater prestige.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. F to enroll in University X rather than University Y.

_____ Place a check here if you think Mr. F should not enroll in University X, no matter what the probabilities.
_____ The chances are 9 in 10 that Mr. F would receive a degree from University X.
_____ The chances are 7 in 10 that Mr. F would receive a degree from University X.
_____ The chances are 5 in 10 that Mr. F would receive a degree from University X.
_____ The chances are 3 in 10 that Mr. F would receive a degree from University X.
_____ The chances are 1 in 10 that Mr. F would receive a degree from University X.

7. Mr. G, a competent chess player, is participating in a national chess tournament. In an early match he draws the top-favored player in the tournament as his opponent. Mr. G has been given a relatively low ranking in view of his performance in previous tournaments. During the course of his play with the top-favored man, Mr. G notes the possibility of a deceptive though risky maneuver which might bring him a quick victory. At the same time, if the attempted maneuver should fail, Mr. G would be left in an exposed position and defeat would almost certainly follow.

Imagine that you are advising Mr. G. Listed below are several probabilities or odds that Mr. G's deceptive play would succeed.

Please check the lowest probability that you would consider acceptable for the risky play in question to be attempted.

_____ The chances are 1 in 10 that the play would succeed.
_____ The chances are 3 in 10 that the play would succeed.
_____ The chances are 5 in 10 that the play would succeed.
_____ The chances are 7 in 10 that the play would succeed.
_____ The chances are 9 in 10 that the play would succeed.
_____ Place a check here if you think Mr. G should not attempt the risky play, no matter what the probabilities.

8. Mr. H, a college senior, has studied the piano since childhood. He has won amateur prizes and given small recitals, suggesting that Mr. H has considerable musical talent. As graduation approaches, Mr. H has the choice of going to medical school to become a physician, a profession which would bring certain prestige and financial rewards, or entering a conservatory of music for advanced training with a well-known pianist. Mr. H realizes that even upon completion of his piano studies, which would take many more years and a lot of money, success as a concert pianist would not be assured.

Imagine that you are advising Mr. H. Listed below are several probabilities or odds that Mr. H would succeed as a concert pianist.

Please check the lowest probability that you would consider acceptable for Mr. H to continue with his musical studies.

_____ Place a check here if you think Mr. H should not pursue his musical training, no matter what the probabilities.
_____ The chances are 9 in 10 that Mr. H would succeed as a concert pianist.
_____ The chances are 7 in 10 that Mr. H would succeed as a concert pianist.
_____ The chances are 5 in 10 that Mr. H would succeed as a concert pianist.
_____ The chances are 3 in 10 that Mr. H would succeed as a concert pianist.
_____ The chances are 1 in 10 that Mr. H would succeed as a concert pianist.

9. Mr. J is an American captured by the enemy in World War II and placed in a prisoner-of-war camp. Conditions in the camp are quite bad, with long hours of hard physical labor and a barely sufficient diet. After spending several months in this camp, Mr. J notes the possibility of escape by concealing himself in a supply truck that shuttles in and out of the camp. Of course, there is no guarantee that the escape would prove successful. Recapture by the enemy could well mean execution.

Imagine that you are advising Mr. J. Listed below are several probabilities or odds of a successful escape from the prisoner-of-war camp.

Please check the lowest probability that you would consider acceptable for an escape to be attempted.

_____ The chances are 1 in 10 that the escape would succeed.
_____ The chances are 3 in 10 that the escape would succeed.
_____ The chances are 5 in 10 that the escape would succeed.
_____ The chances are 7 in 10 that the escape would succeed.
_____ The chances are 9 in 10 that the escape would succeed.
_____ Place a check here if you think Mr. J should not try to escape no matter what the probabilities.

10. Mr. K is a successful business who has participated in a number of civic activities of considerable value to the community. Mr. K has been approached by the leaders of his political party as a possible congressional candidate in the next election. Mr. K's party is a minority party in the district, though the party has won occasional elections in the past. Mr. K would like to hold political office, but to do so would involve a serious financial sacrifice, since the party has insufficient campaign funds. He would also have to endure the attacks of his political opponents in a hot campaign.

Imagine that you are advising Mr. K. Listed below are several probabilities or odds of Mr. K's winning the election in his district.

Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. K to run for political office.

_____ Place a check here if you think Mr. K should not run for political office no matter what the probabilities.
_____ The chances are 9 in 10 that Mr. K would win the election.
_____ The chances are 7 in 10 that Mr. K would win the election.
_____ The chances are 5 in 10 that Mr. K would win the election.
_____ The chances are 3 in 10 that Mr. K would win the election.
_____ The chances are 1 in 10 that Mr. K would win the election.

11. Mr. L, a married 30-year-old research physicist, has been given a five-year appointment by a major university laboratory. As he contemplates the next five years, he realizes that he might work on a difficult, long-term problem which, if a solution could be found, would resolve basic scientific issues in the field and bring high scientific honors. If no solution were found, however, Mr. L would have little to show for his five years in the laboratory, and this would make it hard for him to get a good job afterwards. On the other hand, he could, as most of his professional associates are doing, work on a series of short-term problems where solutions would be easier to find, but where the problems are of lesser scientific importance.

Imagine that you are advising Mr. L. Listed below are several probabilities or odds that a solution would be found to the difficult, long-term problem that Mr. L has in mind.

Please check the lowest probability that you would consider acceptable to make it worth while for Mr. L to work on the more difficult long-term problem.

_____ The chances are 1 in 10 that Mr. L would solve the long-term problem.
_____ The chances are 3 in 10 that Mr. L would solve the long-term problem.
_____ The chances are 5 in 10 that Mr. L would solve the long-term problem.
_____ The chances are 7 in 10 that Mr. L would solve the long-term problem.
_____ The chances are 9 in 10 that Mr. L Would solve the long-term problem.
_____ Place a check here if you think Mr. L should not choose the long-term, difficult problem, no matter what the probabilities.

12. Mr. M is contemplating marriage to Miss T, a girl whom he has known for a little more than a year. Recently, however, a number of arguments have occurred between them, suggesting some sharp differences of opinion in the way each views certain matters. Indeed, they decide to seek professional advice from a marriage counselor as to whether it would be wise for them to marry. On the basis of these meetings with a marriage counselor, they realize that a happy marriage, while possible, would not be assured.

Imagine that you are advising Mr. M and Miss T. Listed below are several probabilities or odds that their marriage would prove to be a happy and successful one.

Please check the lowest probability that you would consider acceptable for Mr. M and Miss T to get married.

_____ Place a check here if you think Mr. M and Miss T should not marry, no matter what the probabilities.
_____ The chances are 9 in 10 that the marriage would be happy and successful.
_____ The chances are 7 in 10 that the marriage would be happy and successful.
_____ The chances are 5 in 10 that the marriage would be happy and successful.
_____ The chances are 3 in 10 that the marriage would be happy and successful.
_____ The chances are 1 in 10 that the marriage would be happy and successful.

APPENDIX C

Z SCORES FOR TWO POPULATIONS WITH AND WITHOUT GRADE POINT AVERAGES ON SELECTED VARIABLES

Z SCORES FOR TWO POPULATIONS WITH AND WITHOUT GRADE POINT AVERAGES ON SELECTED VARIABLES

Selected Variables	Z Scores
ACT/RT	.10
ACT/LC	.07
RT/LC	-.05

With gpa N = 622

Without gpa N = 117

APPENDIX D

POPULATIONS AND REGRESSIONS FOR EACH

Populations and Regressions for Each

1.	Low Risk Taking Population	$Y = .561 + (.109)\ X_1 + (.001)\ X_2 + (-.001)\ X_3 + (-.003)\ X_4$
2.	Males in Low Risk Taking Population	$Y = .426 + (.127)\ X_1 + (-.002)\ X_2 + (-.001)\ X_3 + (-.041)\ X_4$
3.	Females in Low Risk Taking Population	$Y = .939 + (.097)\ X_1 + (-.002)\ X_2 + (-.001)\ X_3 + (.023)\ X_4$
4.	High Risk Taking Population	$Y = .649 + (.078)\ X_1 + (.007)\ X_2 + (-.001)\ X_3 + (-.042)\ X_4$
5.	Males in High Risk Taking Population	$Y = .945 + (.077)\ X_1 + (-.001)\ X_2 + (.010)\ X_3$
6.	Females in High Risk Taking Population	$Y = .280 + (.099)\ X_1 + (.010)\ X_2 + (-.001)\ X_3 + (.061)\ X_4$
7.	Low Life Change Population	$Y = .402 + (.089)\ X_1 + (.005)\ X_2 + (.001)\ X_3 + (-.006)\ X_4$
8.	Males in Low Life Change Population	$Y = .987 + (.100)\ X_1 + (-.005)\ X_2 + (-.002)\ X_3 + (.034)\ X_4$
9.	Females in Low Life Change Population	$Y = .028 + (.095)\ X_1 + (.011)\ X_2 + (.002)\ X_3 + (-.038)\ X_4$
10.	High Life Change Population	$Y = .241 + (.108)\ X_1 + (.008)\ X_2 + (-.001)\ X_3 + (-.025)\ X_4$
11.	Males in High Life Change Population	$Y = .064 + (.118)\ X_1 + (.004)\ X_2 + (-.007)\ X_3$
12.	Females in High Life Change Population	$Y = .681 + (.102)\ X_1 + (.008)\ X_2 + (-.001)\ X_3 + (-034)\ X_4$

13. Low Academic Risk Population

$$Y = 1.819 + (.060)\ X_1 + (-.003)\ X_2 + (0.001)\ X_3 + (-.038)\ X_4$$

14. Males in Low Academic Risk Population

$$Y = .838 + (.112)\ X_1 + (-.013)\ X_2 + (.001)\ X_3 + (-.009)\ X_4$$

15. Females in Low Academic Risk Population

$$Y = .952 + (.081)\ X_1 + (.007)\ X_2 + (-.001)\ X_3 + (-.037)\ X_4$$

16. High Academic Risk Population

$$Y = .604 + (.067)\ X_1 + (.007)\ X_2 + (-.001)\ X_3$$

17. Males in High Academic Risk Population

$$Y = .012 + (.107)\ X_1\ (.003)\ X_2 + (.013)\ X_3$$

18. Females in High Academic Risk Population

$$Y = .667 + (.091)\ X_1 + (.006)\ X_2 + (-.001)\ X_3$$

19. Total Population

$$Y = .663 + (.095)\ X_1 + (.003)\ X_2 + (-.0002)\ X_3 + (-.022)\ X_4$$

20. Males in Total Population

$$Y = .537 + (.103)\ X_1 + (-.002)\ X_2$$

21. Females in Total Population

$$Y = .794 + (.096)\ X_1 + (.005)\ X_2 + (-.001)\ X_3 + (-.034)\ X_4$$

Y = Grade Point Average (gpa)

VITA

Joseph Ralph Helton, Jr.

Candidate for the Degree of

Doctor of Education

Thesis: THE RELATIONSHIP OF LIFE CHANGE AND RISK TAKING TO ACADEMIC ACHIEVEMENT

Major Field: Student Personnel and Guidance

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