

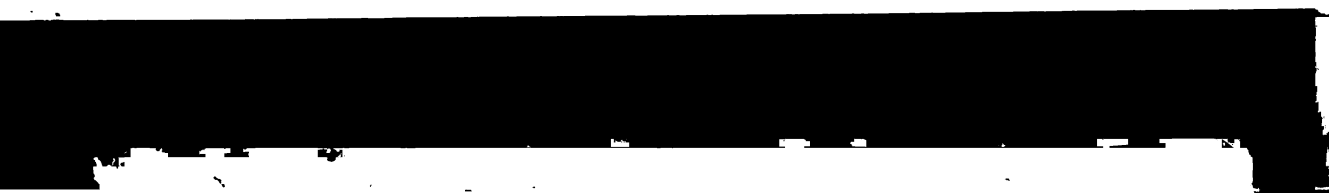
AN INVESTIGATION OF FACTORS
LEADING TO THE WITHDRAWAL OF
WALDORF JUNIOR COLLEGE FRESHMEN

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
Clayton Durward Roa
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ABSTRACT

AN INVESTIGATION OF FACTORS LEADING TO THE WITHDRAWAL OF WALDORF JUNIOR COLLEGE FRESHMEN

by Clayton Durward Roa

The purpose of the study was to describe and attempt identification early in the school year of Waldorf Junior College freshmen who withdrew from the Class of 1963-1964 and who were judged by the faculty to have acute intrapersonal concerns.

The population consisted of 252 students of which 144 were male and 108 female. Of these students, 82 (32%) did not return to Waldorf College for their sophomore year. Of these 252 students, 39 (15) were judged by the faculty to have acute intrapersonal concerns which might jeopardize academic success.

A questionnaire devised for the purpose of this study and three standardized instruments were employed to gather data. A test of academic ability, the ACT, was provided by the college. The Minnesota Multiphasic Personality Inventory and the Lutheran Youth Research Inventory were the two psychometric instruments employed.

A research design was developed which consisted of two parts:

1. Description and exploration of the subjects of interest by the use of the chi square statistic, accumulative contingency tables, and product-moment correlations.
2. Identification of the subjects of interest by the use of multiple regression equations, based on variables selected from factor analytic techniques, followed by cross-validation. The regression equations were employed after testing the hypotheses that the

differences in the multiple R for the groups of interest were statistically significant.

The major findings may be summarized as follows:

1. The primary period of withdrawal is after two semesters at Waldorf College.
2. The primary reason for withdrawal is transfer to another educational institution. A secondary reason is various dissatisfactions.
3. School mobility before college matriculation is most in evidence for female dropouts and males with acute concerns.
4. Students in each group accept full responsibility for the decision to leave Waldorf College.
5. The person most influential in encouraging males to attend Waldorf College is the parish pastor. For females, parents are the primary influence.
6. The questionnaire does not adequately discriminate items that are interpersonal and affective in nature.
7. The ACT English test is the most useful of the five ACT tests for the purposes of this study.
8. Five LYRI and three MMPI scales when used in the four derived multiple regression equations are the most discriminating scales from among the 36 scales selected from the factor analysis.
9. In a cross-validated random sample the multiple regression equation derived from the first half of the dichotomized groups correctly predicts 81% of the dropouts and 60% of the acute

concerns.

10. Students who elected not to release LYRI scores for research purposes are consistently higher on each of the 17 MMPI scales selected for this study. The difference in mean in each case is significant at the .01 level.

AN INVESTIGATION OF FACTORS LEADING
TO THE WITHDRAWAL OF WALDORF
JUNIOR COLLEGE FRESHMEN

By

Clayton Durward Roa

A THESIS

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PREFACE

"Wisdom is the principal thing;

therefore get wisdom:

and with all thy getting

get understanding."

--A Proverb of Solomon

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The investigator expresses his appreciation to his committee chairman and research director, Dr. John E. Jordan, and to the members of his committee, Drs. Norman Abeles, James W. Costar and Walter F. Johnson, for their skillful guidance and encouragement. Acknowledgment is also made to Dr. Carl Frost for serving on the committee before accepting a position at the University of Nigeria and to Dr. Charles A. Blackman for critical review of the thesis.

For motivation to study factors leading to the withdrawal of Waldorf College freshmen the investigator is indebted to students who for six years shared their concerns with him as their chaplain. To the faculty and staff of Waldorf College the investigator is deeply indebted.

For competent statistical consultation Dr. John Felty has earned the investigator's sincere gratitude. For his patient introduction to computerization Mr. Bruce Rogers deserves more than words of appreciation.

Dr. Merton Strommen, developer of the Lutheran Youth Research Inventory, supplied encouragement and consultative competence repeatedly.

A Ph.D. is known as an earned degree. The investigator's wife, Eleanor, deserves a related degree. Competent and affectionate management of a household of four children is a sufficient calling. She willingly added the tedious work of preparing this typescript. Separation from the children for five weeks became part of the sacrifice. To Darel, Paul, Janet and Mark and hospitable relatives the investigator's gratitude in ink feels highly inadequate.

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CHAPTER I

THE PROBLEM

INTRODUCTION

On July 12, 1963, the late President John F. Kennedy allocated \$250,000 from his emergency funds to help 63 selected school districts bring potential or actual dropouts back to school. This presidential action stimulated many other communities throughout the nation to intensify their efforts to keep students in school.

In March, 1965, President Lyndon B. Johnson declared in an address to delegates at a conference sponsored by the National Education Association: "You can sit in your rocking chair; but I am going to use every rostrum to tell the people that we can no longer afford the great waste that comes from the neglect of a single child" (Time, March 12, 1965, p. 22).

Both national and local leadership has been aroused to concerted action in relation to the problem of student attrition. Evidence of increased interest is reflected both in popular and professional publications. Articles on student withdrawal reported in The Readers' Guide to Periodical Literature indicate a striking increase in the sixties both of articulated concern and deliberated action. A comprehensive study by Iffert for the Office of Education showed that only about 40% of all college entrants graduate in four years from the institution they originally entered. This proportion increased to 60% for those who eventually graduated from some college (McQueen, 1964).

While abundant evidence exists for much contemporary concern with student attrition, earlier awareness of the problem is also of interest.

The President of the University of Minnesota reported to his Regents in 1900 that failure of students originated in laziness, bad habits, or lack of ability. In 1947 he reported: "In the judgment of the Administrative Board, failures are the result, not of the lack of mental ability, but of emotional and personal maladjustments. We are trying to help these individual cases...(Torrance, 1963).

The problem of student withdrawal in relation to the emotional needs of college students impinged acutely on the awareness of this investigator in his role as a college chaplain. It appeared necessary at Waldorf College to find economical ways to try to identify early in the school year the students with acute intrapersonal concerns so that appropriate prophylactic assistance might be proffered before withdrawal became actualized. Clinical observations indicated that intrapersonal concerns tended to jeopardize academic success for some students. A positive relationship seemed to exist between such students and those who became dropouts. Such students crowded the appointment calendars of personnel workers at Waldorf College.

The rapid increase in student enrollments has contributed to the problem nationally. The total national increase among college freshmen was 20% for 1964-1965. Steady increases are projected through 1970 (Parker, 1965). Students polled students at the University of Toronto reporting that 50% of the men and 64% of the women had worries for which they would like some kind of professional help (King, 1964). A middle western college indicated successful identification early in the school year of students with acute problems (Woolf and Woolf, 1953).

Some studies report that psychiatric disorders among college students are increasing at an alarming rate:

In those cases where dropping out is a symptom of some kind of emotional conflict, the associated psychological conditions are varied. Apathy, unconscious rebellion, vacillation, indecision, and psychosis are often present. We still do not understand the psychodynamics involved in many cases of dropout, even though we can classify some of the accompanying psychological states. Obviously continuing research is of prime importance (King, 1964, p. 329).

STATEMENT OF THE PROBLEM

The primary purpose of this study is the description and exploration of factors that relate to Waldorf (Junior) College freshmen who withdraw after the freshman year and who have acute intrapersonal concerns. Factors investigated are selected from standard admission data and a questionnaire developed for this purpose.

The second purpose of this study is the testing of two major hypotheses:

1. Selected scales from the Minnesota Multiphasic Personality Inventory (MMPI) and the Lutheran Youth Research Inventory (LYRI) can be used to predict Waldorf College freshmen who withdraw after the freshman year.
2. Selected scales from the Minnesota Multiphasic Personality Inventory (MMPI) and the Lutheran Youth Research Inventory (LYRI) can be used to predict Waldorf Junior College freshmen who have acute intrapersonal concerns, as measured by faculty judgment.

NEED FOR THE STUDY

The Distinctive Role of the Junior College

The rapid expansion of junior colleges in the United States calls attention to their unique role in higher education. Students can be accepted who are less able both intellectually and financially. The urgency of meeting student needs early is reinforced by an awareness that maximum matriculation is two years, not four. Many students in junior colleges attend but one year. A possibility of accelerated maturation exists when sophomores must assume the leadership roles reserved usually for upperclassmen in the four year colleges. These factors help to operationalize the American dream of equality of educational opportunity.

One of the distinctive roles that can be played by the relatively smaller independent colleges is the cultivation of personal relationships and enrichment of interests among students and between them and their teachers. In times when numbers appear to attract public attention and the god of bigness sits high among the gods of education, it may not be entirely out of order to recall the nostalgic idea of the split log. We must beware lest the log be so long that neither end can be heard (Bogue, 1950, pp. 109-114).

Tead (1954) looks to the junior college to help the student interrelate his academic courses with his total outlook and interests, including the vocational. This enhances the character of the learning process making it more realistic and vital than is often true in liberal arts colleges that divorce themselves from vocational concerns.

Less reliance on verbal glibness, a less narrowly intellectual emphasis, a deliberate effort to enrich the emotional life, a greater eagerness to extend the student's guided experience of learning beyond the classroom--these are among the touchstones of good junior college teaching (Ordway Tead, 1954, p. 124).

It appears that the junior college needs to capitalize on its unique potential for individualizing instruction. It seems necessary to explore further the place of skilled counseling and appropriate diagnostic methods.

Student Personnel Practices

Medsker (1960, p. 25) observed that since the beginnings of the junior college movement it has been recognized that students need professional assistance in making sound educational and vocational choices. Before becoming an authority on junior colleges, Medsker assumed that rendering individualized personnel services would be a strong point with two-year schools. Subsequent study forced him to conclude that this is not the case consistently.

Another leader in the junior college movement stated:

If the community college recognizes the fact of individual differences, ... this will demand an organized and well-financed program of personnel services. It is difficult to believe that any professional educator can fail to make this admission of fact; it is more difficult to understand why neglect should be allowed when the fact is admitted. The task is one that is time consuming, because proper counseling and guidance, like diagnostic practices by the physician, cannot be done en masse. It is an individualized, personalized undertaking (Bogue, 1950, p. 321).

The degree of responsibility each junior college accepts in stimulating the total growth of each student needs clarification. An awareness that approximately six out of ten students fail to continue in college raises questions about present policies. McDaniel (1962) identified essential personnel practices for the Commission on Student Personnel of the American Association of Junior Colleges. He noted that the purposes of the college need to be operationalized with

consistency. He concluded that systematic evaluation of all policies is the only protection against mistakes.

A survey of 76 junior colleges found that administrations and boards of control had not placed student personnel services on a par with instruction and that insufficient budget appropriations had been made to ensure a full range of such services. The counseling program in many of these institutions was inadequate. An insufficient number of counselors with professional preparation was observed. Little research to obtain facts about their students was conducted and only limited effort to evaluate their programs was expended.

If the junior college is to provide the first post-high experience . . . to channel students into avenues consistent with their characteristics and likelihood of success, much will depend on the quality of the counseling program. The failure of the junior college in this important responsibility could well mean that the growing dependence on this institution is in error (Medsker, 1960, p. 163).

A survey of guidance practices in selected junior colleges revealed the following characteristics: personal-social guidance had not been developed extensively; lack of trained counselors is a major weakness; extensive use of untrained counselors enlisted from the faculty seems customary; little, if any, research or evaluation was evident (Starr, 1960, p. 489).

An important part of the personnel program should be research to determine characteristics of entering students, the quality and duration of their college experience, and what they do after leaving the college. In spite of the value of such data, only a small amount of it is available. Bogue (1950, p. 326) felt that adequate personnel services are more than a question of efficiency; it is a moral issue. Clear

recognition of the student as a person, the philosophy of individual differences, the claims of personalized education, and the responsibility of the college to guide students into fruitful vocations are essential. Otherwise, the college must assume the risk of society's harsh judgment of moral turpitude. He anticipated that lack of money and understanding of need would be the retort of some administrators.

It is not proposed that the college assimilate the function of the therapeutic clinic or hospital. It is proposed that colleges can meet more of the emotional needs of the students in responsible ways within an educational milieu. The counselor in an educational institution can help students become relatively free from distractions that interfere with learning. A broad spectrum of possible helpfulness exists for sensitized personnel services. Referral to psychological resources outside of the college ought to be the exception rather than the rule.

Academic failure does not generally seem to be associated with classical neuroticism, but rather with a failure in social orientation (Gibbs, 1965, p. 580).

Of the almost 600 cases seen by Harvard's psychiatric service in one academic year, about one-fourth were diagnosed as neuroses and one-fourth were given other psychiatric labels (mostly depression and schizoid states). The remainder of the group were given "Problem Diagnoses" after a system devised for this purpose by Monks and Heath for labeling cases in which there seemed to be no identifiable psychiatric ailment (Elaine and McArthur, 1961, pp. 62-63).

The skilled college counselor can assist in meeting the needs of this later group, the majority of students who seldom approach a psychiatric center. The consulting psychiatrist for a large liberal

arts college in Minnesota reported that the addition of a well-trained counselor to the personnel services staff reduced his "nuisance load" considerably. This permitted psychiatric services in depth for the more acute cases.¹

The Dean of the College of Education, Michigan State University, has observed that the major thrust of our educational system currently deals with so-called "rational faculties" of our population. We specialize in employing facts and logical systems of reasoning. We do a less effective job of dealing with the emotional mechanisms that really control human behavior and help students learn how to discipline these mechanisms effectively in individual and group behavior.

I realize that you can't divide these matters into rational and emotional dichotomies, but, at the same time, if we could learn more about the psychiatric, psychological, sociological and cultural anthropological variables that create a predisposition to behavior emotionally in certain directions, I think we would be much more effective in our educational programs.²

Johnson (1965) has summarized a rationale for junior college personnel programs. He found it difficult to defend the admission of all comers unless counseling adapted to their needs is provided. To fail in this is to develop a "revolving-door" college. By design the junior college is an open-door college. Johnson concluded that the junior college has an obligation to help students achieve a self-understanding that enhances the making of educational-vocational choices.

¹ Personal conversation with the investigator.

² Personal communication from Dr. John E. Ivey, Jr., July 7, 1964.

Considered by some to be the "dean" of contemporary college student personnel workers, Williamson (1949) has proposed that in our American democracy the student's full and balanced maturity is the major goal of education. This involves the total development of the student--socially, emotionally, intellectually, spiritually, and psychologically.

Both the quality of education and the quantity of students contribute to the need for further research. Merlo (1964) has observed that one out of every five college students in the United States now attends a junior college. California, the leader in the field, now enrolls 84 of every 100 freshmen and sophomores in the state in public two-year colleges. About 25 new two-year colleges are opening each fall, with the rate of growth expected to increase.

William G. Dwyer, president of the Massachusetts Board of Regional Community Colleges, summarized: "On a university campus, a student sinks or swims but on a community college campus, we try to teach him how to swim (Time, March 5, 1965, p. 60).

Attrition Rates

The need for study of college student emotionality has been documented by the unique goals of junior college education and the inadequate way student personnel programs have been meeting these goals. Further evidence for need will be derived from interpretation of data on withdrawals.

McNeely (1937) studied entering freshmen at 25 universities in 1931-1932. Follow-up studies indicated that 62% left the university without a degree. Of these, 17% transferred to other institutions or

later returned to complete their degrees. The highest dropout rate occurred during the freshman year, exactly one-third of the total.

Twenty-five years later Iffert (1958) completed a study with results that are consistent with those of McNealey. Only 40% of college entrants graduated from the institution they entered. This proportion increased to 60% for those who eventually graduated from some college. Medsker (1964, p. 53) reported that a California survey showed a 66% loss between the first and second year in colleges in that state. Approximately one-third of entering junior college students in the nation graduate in two years.

The emotional anguish experienced by students and parents, when added to the vast investment in "failure" by the colleges in relation to the 40% who never complete what they began, underscores the need of research on student attrition. These gross statistics cannot convey causality. Major causes of Waldorf College student withdrawal are reported in Appendix A.

DEFINITION OF TERMS

Academic success: At Waldorf College students who fail to earn a grade point average of 1.5 or above on a 4.0 scale by the end of their first semester in attendance are not permitted to continue. Excluding the first semester, any student whose grade point average falls below 1.7 is not permitted to register for the following semester.

Counseling: Counseling is defined as a dynamic face-to-face relationship designed to assist persons in making significant choices.

Faculty judgment: Working independently, each faculty member at Waldorf College identified students with whom they had personal

interaction, i.e., a first-hand face-to-face encounter, not merely hearsay. The location was immaterial: classroom, office, home, or casual contact that was informal and unstructured.

Intrapersonal concerns: This term was broadly defined to suggest the full range of attitudes variously labeled emotional, mental, social, psychological, or spiritual.

Junior college: For the purposes of this study the following terms are used interchangeably--junior college, community college, two-year college.

Standard admissions data: After considerable study the investigator concluded that much of the biographical, familial, medical, and appraisal information available in each student's admissions file was not sufficiently precise for correlational purposes. Data used is limited to American College Testing scores (hereafter identified as ACT).

Withdrawal: A student who matriculated at Waldorf College as a freshman in September, 1963, and who did not enroll as a sophomore in 1964 is considered a withdrawal or a dropout (interchangeable terms).

LIMITATIONS OF THE STUDY

Assumptions

Scientific methodology is not devoid of presuppositions. An awareness of the assumptions that a researcher makes tends to minimize some of the subjectivity that can distort the findings. Three assumptions are utilized in the following discussion.

The use of measurement instruments in their present stage of refinement to assess human behavior and personality necessitates caution. It

is assumed that the instruments selected for use in this study have limitations. Their use does not imply a lack of awareness that behavior is complex. Specific personality variables need to be studied in relation to detailed background and behavioral data.

The use of approximately thirty faculty members on a highly homogeneous campus to make independent judgments about student emotionality may afford questionable validity. A subsequent discussion under the heading of "faculty rating" indicates attempts to be aware of this hazard. A similar question could be asked regarding variation in the understanding of items on the questionnaire.

A final assumption relates to the value of a self-study by a college faculty. Learnings may be obtained by observation of students who withdraw that may be vital to the enrichment of retained students. At the conclusion of their extensive study on adolescent personality and behavior using the MMPI, Hathaway and Monachesi (1961, p. 150) observed: "Possibly the clearest data emerging from our complex of tables are evidences predicting normal adjustment. The average lives turn out to be more solidly predictable than are deviant lives."

Generalizability

The sample under investigation is the freshman class of one mid-western junior college. Further restriction on generalization to the total junior college population in America is the denominational nature of this independent school. It is possible that the 272 independent church-related junior colleges in America would find these results more useful than the 422 public junior colleges. If only the size of the

college under study is considered, additional generalization might be possible. Of the 272 independent junior colleges, Waldorf College ranks 58th in size of student body.

ORGANIZATION OF THE THESIS

Chapter I has stated the problem, the purposes, and the need for the study. The need was resident in the distinctive purposes of the student personnel program of the junior college in relation to contemporary attrition rates and reasons for withdrawal. Definition of terms and limitations of the study were followed by an outline of the thesis.

Chapter II is devoted to a review of the literature related to the problem under study. Attention is given to research dealing with the historical development of personality assessment. Concentration is on studies of attrition among college freshmen.

Chapter III contains the design and procedures. The instrumentation used for gathering data is described and the procedures for statistical analysis are outlined.

Chapter IV includes the analysis of the data and a discussion of the significant findings.

Chapter V contains a summary of the study, conclusions reached, and implications for further research.

CHAPTER II

REVIEW OF RELATED RESEARCH

PSYCHOMETRIC THEORY AND PRACTICE

Historical Development

As recently as one century ago psychology was still intertwined with philosophy. An arm-chair, non-experimental discussion of the nature of the mind did not involve measurement until the beginning of this century. Ties with philosophy yielded to new affiliations with the biological sciences.

Thorndike and Hagen (1961) identify three merging contributions to measurement in psychology and education: the nineteenth century physiological and experimental psychology originating in Germany, Darwinian biology, and clinical concern for maladjusted persons.

Wilhelm Wundt at Leipzig in 1879 has been credited with the first experimental laboratory for psychology. An outgrowth of experimental psychology has been precision of techniques, rigorous statistical designs, and an appreciation of the need to operationalize concepts.

Darwin's emphasis on individual differences was applied to human behavior by Sir Francis Galton, an English biologist. Anastasi (1961, p. 7) credits Galton with being "primarily responsible for launching the testing movement on its course." Galton recognized the need to measure the characteristics of persons, related and unrelated. He pioneered in applying rating scales and questionnaires as well as statistical methods to the analysis of individual differences. One of his students, Karl Pearson, further refined these methods.

Reinforced by contact with Wundt and Galton, James Cattell, an American psychologist, merged experimental psychology and the new testing movement. Cattell first used the term, mental test. A student of Cattell, E. L. Thorndike, became a primary influence in the development of standardized educational tests.

Clinical interest in the individual was especially strong in France. Binet experimented with direct, though crude, ways to measure complex intellectual functions. Lewis Terman in 1916 built on Binet's work to produce the influential Stanford-Binet version.

Psychological measurement in America in this century appears to divide into four stages. Up to 1915 initial development of methods was explored. World War I stimulated the need for measurement advances. Rapid classification of many recruits prompted the development of the Army Alpha and the Army Beta group tests. Standardized tests became available for many school skills and content areas. In this wave of enthusiasm for testing, uncritical use led to reactions regarding the whole philosophy of quantification and the use of numbers to express psychological qualities.

Critical appraisal followed from about 1930 to 1945. Measurement of a limited range of skills yielded to evaluation of the whole range of educational goals. Global projective methods of personality assessment came into focus. Thorndike and Hagen (1961) predict that the present period, since 1945, will be characterized by test batteries and testing programs. The successful use of integrated aptitude batteries during World War II and the large-scale testing programs such as the College Entrance Examination Board are evidences offered.

Measurement of Personality

Still in its infancy is the psychological measurement of the non-intellectual varieties of human behavior such as emotional adjustment, motivation, attitudes, interests, and social relationships. Kraepelin (1895) used a free association test with abnormal patients. Another prototype was developed during World War I, a self-report inventory known as the Personal Data Sheet. Hartshorne and May (1930) approached personality measurement through the application of performance or situational tests. A more recent approach has been the use among clinicians of projective techniques. Anastasi (1961, p. 13) has cautioned, "All the available types of personality test present serious difficulties, both practical and theoretical."

Special difficulties in personality testing include these three: one, the possibility of faking and malingering affects test reliability; two, specificity of responses is required yet behavior varies with time and place; three, adequate criterion data for establishing validity is quite limited. The present practice favors correlations with other tests (concurrent validity) and internal consistency (content validity).

Solutions to these problems include these two possibilities: one, continued exploration in the improvement of personality inventories; two, recognizing for the present the crude stage of contemporary development and restrict applications accordingly.

The personality theory favored by each test constructor affects the amount of experimental verification to which the test is subjected. Psychoanalytic theory, for example, does not readily admit to testing. The principle of indeterminacy provides a serious problem for the

phenomenological theorist. Among the personality theories that have stimulated test development rather widely is the manifest need system of H. A. Murray. The Edwards Personal Preference Schedule is the most comprehensive inventory designed to assess the strength of such needs.

This survey of the historical development of measurement and discussion of personality assessment is an encouragement to be cautious in drawing conclusions from the data gathered by instruments used in this study. The vast variations in personality theory indicate an additional reason for accepting tentatively the conclusions drawn under any one system. It is especially important that interpretations be confined to the operationally defined terms of the criteria against which validity was established. These cautions introduce a review of literature applicable to this study.

ATTRITION STUDIES

Guilford (1954, p. 341) stated that "no other contribution of psychology has had the social impact equal to that created by the psychological test. No other technique and no other body of theory in psychology has been so fully rationalized from the mathematical point of view." The discussion that follows partially documents Guilford's rather strong statement.

A veteran dean of personnel services, E. G. Williamson (1964), has noted that Meehl established empirically that certain kinds of personality description and diagnoses are as accurately made by means of standard and generalized interpretations of personality test profiles as by interpretations of clinical psychologists. Sarbin (1960) earlier

reported a similar finding. Predictions of grades using a battery of tests and high school grades were compared with predictions made by psychologists with knowledge of these tests and traditional case data following personal interviews with students. The counselor's interview and knowledge of case data, including tests, added little to the statistical accuracy of prediction when the test battery only was used for prediction.

College Freshmen

The plethora of studies made of high school dropouts is not duplicated when the population under study is limited to college freshmen. This is particularly significant when compared with the finding that most college attrition takes place during and following the freshman year. Studies reported on junior college freshmen attrition are almost non-existent. Matson (1955) completed the most comprehensive study of twenty two-year colleges between the years 1949-1957. In comparing a group of students who withdrew with a group who did not withdraw but had similar characteristics, Matson found no significant differences. She concluded that the student who withdraws from junior college may lack a sense of belonging or identification with the college environment.

Following this hypothesis the work of Erik Erikson becomes useful in the assessment of the effects of varying college environments on personality change. The tasks of establishing a stable identity and developing patterns of intimacy are of major concern to college freshmen. Erickson (1950) understands problems to be difficulties that grow out of attempts to resolve these tasks.

Motivated by a high attrition rate among college freshmen, Lang et al (1962) compared the Edwards Personal Preference Schedule with instructors' estimates of academic achievement. For females, academic achievement correlated positively with achievement and dominance but negatively with nurturance. For males, academic achievement correlated positively with order and negatively with dominance. Lang's study was made on a limited sample of 49 females and 38 males.

The academic abilities of junior college students were the interest of Seashore (1958). In a comparison of academic aptitudes as measured by the College Qualification Test (CQT) of students in two and four-year colleges, Seashore found the following: one, the median score for junior college freshmen is near the 25th percentile for senior college freshmen; two, about 24 per cent of the junior college men and 20 per cent of junior college women are above the respective medians for freshmen in four-year colleges; three, there are many junior college students whose scores would be considered superior in senior colleges, and many low-scoring college freshmen would also rate low in junior colleges. These findings indicate the importance of research on a junior college population and the need for individualized instruction through counseling of junior college students.

Funkenstein et al (1959) observed that extreme scores on the Brownfain Self-Concept Test were significantly associated with visits to the psychiatric clinic during the freshmen year. King sees as one outcome of the Harvard Student Study an evaluation of tests or test items that are potent in predicting the need for help from the psychiatric service or the counseling service at Harvard: "Already

our experience has indicated an association between certain extreme scores on the Myers-Briggs Type Indicator in the freshman year and later occurrence of emotional disturbance" (King, 1964, p. 330).

On the subject of freshman failure the humanities have a spokesman in Ridlor (1961, p. 59). He found that the relationship of good reading to success in college is primary. A second skill is the ability to listen constructively coupled with candid, dispassionate, objective thinking. The attitudes which block successful completion of the freshman year "all revolve around the central pole of self-consciousness. Fear, anxiety, selfishness, aggressiveness, timidity, lethargy--these often spring from unwholesome conceptions of a relationship between self and society." Anxiety for the adolescent is a regular part of their traveling equipment, Ridlor concluded.

Minnesota Multiphasic Personality Inventory Related Studies

Buros (1959) has documented 779 references to the use of the MMPI. An estimate of MMPI research in the past six years would increase this number. The following discussion isolates the most significant recent findings that relate to this study under these headings: College Screening Studies, Achievement Studies, Deviant Behavior Studies, and Studies Incorporating Conflicting Results.

College Screening Use of the MMPI. Among the earliest attempts to use the MMPI as a psychometric tool for diagnosing personality disorders among college students is the work of Hampton (1947). He found the MMPI "very helpful" in determining areas of student deviation. This tended to confirm similar use of this instrument in military and industrial settings documented by Mann (1949).

Roessel (1954) made an extensive study of 763 dropouts and graduates from among 2835 students in Minneapolis public schools. On nine of ten MMPI scales the dropouts showed significantly more abnormal scores. The single exception was on the masculinity-femininity (Mf) scale. When grade level of the withdrawal was considered, pupils whose MMPI scores were higher tended to withdraw from a lower grade. Tenth grade dropouts were more abnormal on the MMPI than those who dropped from the eleventh or twelfth grades. He also observed that, for both dropouts and graduates, with an increase in the number of children in the family the mean MMPI scores increased.

Drake (1954) compared evaluations by counselors of college students with MMPI scores. Those students who were rated to be difficult (e.g., aggressive or opinionated) had achieved elevated Psychopathic deviation and Hypomania. A "shy" group was characterized by high Social introversion. The nonresponsive group coded high.

Goodstein (1954) found a striking similarity when testing regional differences in MMPI responses among male college students. He concluded that the development of regional norms was unnecessary.

Grace (1957) found that certain MMPI scales correspond positively with attrition and test scores. Hawkes (1959) drew two experimental groups from among 1100 entering freshmen. MMPI scores for one group deviated two standard deviations above the mean. The control group was matched for age, sex, class rank, and other test scores within the range of the normal profile on the MMPI. The MMPI was found to be an accurate predictor to the extent that the student's curriculum was concordant with his Kuder Preference Record interest scores.

The most prolific reporter of research on the identification of maladjusted college students is Kleinmuntz. In 1960 he reported an item analysis of the MMPI records of two criterion samples that yielded 43 discriminating items. The maladjusted college student appeared as an ineffectual, pessimistic, procrastinating, anxious, and worried person. He also found (1960b) that the mean Ego Strength (Es) scores for adjusted college students (defined as having no counseling contacts) was significantly higher than the mean for maladjusted students (defined as having personal counseling).

Parker (1961) studied the predictive use of the MMPI in a college counseling center. He regarded the test as a valid indicator of motivation for treatment especially if it is administered at the time counseling is requested. He also observed that the complete form is more useful than the short form for this purpose.

Kleinmuntz (1961) has developed a college maladjustment scale (Mt) designed for screening purposes. It can be used to identify persons most in need of counseling. The normative data for the Mt scale was based on 208 teachers' college candidates and 825 entering freshmen. The marked differences on Mt scales between various college groups suggested that separate norms be computed before the scale is applied to any one group. From a group of 126 freshmen at a counseling center using MMPI scores from an orientation battery two counselors judged 81 to be seeking vocational-academic counseling and 45 to be seeking "emotional" counseling. Using a cutting score of 15 on the Mt scale of 43 items, Kleinmuntz achieved 84% accuracy. Parker (1961, p. 89) tested this Mt scale with samples of engineering students. He achieved

accuracy of 46% of the students who later requested "emotional counseling" from among students tested at matriculation. He concluded from further study that the Mt scale discriminates between adjusted and maladjusted students at the time of counseling but "it will likely not do so in a routine battery."

The extensive interest of Kleinmuntz is indicated by his experiment in personality test interpretation by digital computer. A set of decision rules was devised for interpreting the profile patterns of the MMPI of "maladjusted" and "adjusted" college students. The procedure used divided students into that dichotomy based on the decisions of an expert test interpreter. His decision-making processes were tape recorded while he was thinking aloud during the sorting of the profiles of the 126 college students. The programmed decision rules yielded greater accuracy than the decisions of the original interpreter (Kleinmuntz, 1963, p. 416).

Heilbrun (1963) investigated the possibility of a better system of weighting the ten clinical scales of the MMPI to enhance their usefulness as measures of adjustment level within a grossly normal college population. He used a two-group discriminant analysis, the sexes being considered separately, and found that his revised system differed greatly from the standard system. Heilbrun's study is a sample of the plethora of work being done with the MMPI.

Achievement Studies with the MMPI. It appears that use of the MMPI for the screening of college students is both less intensive and extensive than the use of this instrument for studies of under and over-achievement. The review that follows identifies significant studies in chronological order.

Clark (1953) studied the grade achievement of female college students in relation to nonintellective factors. He concluded that although poor grades were not related to any syndrome measured by the MMPI in randomly selected samples of college women, a group of items can be selected which will separate achievers from nonachievers.

Hackett (1955) administered the MMPI to 32 college freshmen on the assumption that nonability factors play an important role in determining college achievement. He tested the hypothesis that scores on the MMPI were related to later achievement in college. Course grades were the criteria of achievement. Hackett found that scales K, 1, 4, and 9 on the MMPI were valid predictors of academic achievement.¹ The number of negative correlations between grades and MMPI scores tended to substantiate the assumption that good adjustment is important to college achievement.

Frick (1955) tried to improve the prediction of academic achievement by adding the clinical scores on the MMPI to the ACE (the American Council on Education Psychological Examination for College Freshmen) in a multiple correlation. The coefficient of determination afforded by the ACE alone was .23. Adding selected MMPI scales increased the correlation to .41. The 12% index of forecasting efficiency by the ACE alone increased to 23% by including certain MMPI scales. While this evidences a positive gain in adding the MMPI, the results are only fairly discriminating.

¹Scale names and characteristics are identified in Appendix G.

Anderson (1956) compared an experimental group having a paranoia (Pa) T-score of 40 or more and at least one counseling contact with a randomly selected group of normal college students. The Pa group had more academic difficulty than the control group both in the non and underachiever categories. A significantly lower Pa was reported for students who had some difficulty with their parents. Anderson ventured that low Pa represents repressed or denied hostility.

Bendig and Klugh (1956) reported a validation of Gough's scale in the prediction of academic achievement. Gough's scale and high school rank in class correlated .32 with self-reported quality point averages. QPA was .45.

Stone and Ganung (1956) divided 317 female freshmen into two groups. Sixty-eight were placed in the normal group, T-scores being 40-60. One hundred twenty-six were placed in the high group, defined as having a T-score on one of the clinical MMPI scales over 70. Thirty-eight per cent of the normal and twenty per cent of the high group graduated, a difference that is significant at the .05 level. The mean grade point average for the "normal" group was 1.9 and for the "high" group, 1.5, a difference that is significant at the .01 level.

Drake and Oetting (1957) administered the group form of the MMPI to 3480 entering male college freshmen. The GPA for this group was computed for the first semester. The MMPI was coded according to the Hathaway system and all profiles with scales 8 and 9 paired high and low on Si were separated from the total group and divided into two--5 high and 5 not high. The GPA distributions were tabulated for the two sub-groups and the total group and tested for significance. These researchers

concluded that a rather complex pattern was necessary to predict the criterion. No single scale in this pattern differentiated the subgroups from the total group.

Drasgow and McKenzie (1958) in a study of college transcripts, graduation, and the MMPI found nongraduates significantly higher in the direction of maladjustment on scales 8 and 9.

Zeaman (1958) compared men and women students on some of the personality attributes related to achievement in college. Low achievers of both sexes were found to be significantly more hypomanic and less conventional than high achievers.

Jensen (1958) administered the MMPI to 458 students at a western denominational college. Scholastic ability was measured by the ACE and high school GPA plus college grades. The most consistent trend identified was for nonachievers of low scholastic ability to obtain higher MMPI scores than the achieving students of high scholastic ability. On scales F, 8 and 9 the nonachieving students of low ability scored significantly higher than the achievers of low scholastic ability. The suggestion was made that scholastic ability favors adjustment and low scholastic ability obstructs it.

McKenzie (1962) attempted development of MMPI scales predictive of academic over and underachievement. He found that underachieving students scored higher than normals on 4 and 7, lower on L and K. The overachieving students scored higher on 2, 5, 7 and lower on 9. McKenzie concluded that both groups were more anxious than normal students. The underachievers, he hypothesized, internalized anxiety while the overachievers externalized their conflicts.

Drake (1962) found that scales 4 and 9 were significantly associated with low achievement especially when scale 5 was not high. This pattern evidenced hostility, Drake suggested, and a consequent need for empathic counseling rather than legalistic demands. Drake favored a pattern interpretation of MMPI scores rather than individual scale interpretations.

McKenzie (1964) has reported the most recent study on the dynamics of deviant achievement. Underachievers among college males were compared with a group defined as normal on the MMPI clinical and validity scales. N for each group was 75. The means for the underachievers were significantly higher on scales 1 and 7, lower on L and K. The higher scale 7 scores seem to indicate that underachievers are more anxious than normal achievers. The higher scale 4 score suggests that underachievers tend to be antagonistic to authority, to reject socially accepted values, and to incline toward impulsive behavior. The antisocial orientation of the underachievers may be seen as a way of handling anxiety. A lower degree of defensiveness would be consonant with an attitude of antagonism toward authority figures and socially accepted values. McKenzie observed that since some need to flout these values, the underachievers are willing to admit information about themselves that may not be consistent. In such people underachievement could be viewed as a way of expressing rejection of parental and societal values. Underachievers respond to a number of items in a direction that suggests harboring a good deal of aggression. Another cluster of items indicated that underachievers are dependent for direction upon people who may be perceived as having little respect for their rights. This tendency to subserve their own wishes to those of other people may be important in generating hostility, an important dynamic with underachievers.

Studies on Deviant Behavior. Of the numerous studies of delinquency and abnormal emotionality using the MMPI, the following have been selected from the past decade for their value to this investigation.

Glasscock (1955) investigated the value of the MMPI as a prognostic instrument with institutionalized psychotics. Using three out of nine empirically derived identification criteria he correctly identified 77% of the subjects.

Gottesman (1959) found the Ego Strength (Es) scale to broadly discriminate between psychiatric and nonpsychiatric adults and adolescents. He did not find a discrimination between different degrees of psychiatric incapacity nor between delinquent and nondelinquent behavior.

Silver (1961) observed that it was characteristic of state hospital chronic patients to have extremely elevated F scales, an indicator of psychosis.

Hathaway and Monachesi (1963) have published a longitudinal study of 15,300 ninth grade students. An attempt was made to isolate premonitory signs of delinquency for accuracy in prediction. MMPI patterns were correlated with other data like teacher evaluation, socio-economic status, school achievement, and type of residential community. "Bad conduct" was associated generally with high scores on the 4, 8, and 9 scales. It was observed that personality patterns of delinquency-prone adolescents are diverse and not monotonic. These investigators found very generally that scale 4 with its implications of rebellion and immaturity predicts delinquency most sensitively. By contrast, the neurotic and schizoid triads of scales 1, 2, 3 and 8 are more indicative of dropouts.

Jurjevich (1963) used two groups of 70 and 100 delinquent girls to establish unbiased estimates of the means and standard deviations of the clinical, validation and 38 additional MMPI scales. The values obtained were compared with standard scales. Delinquent girls were found to differ from the normal population in being more anxious, less self-controlled, and less able to inhibit hostility. Their ego strength was lower. They were more excitable and more ready to admit the existence of some pathological traits. They were less socially responsible and less repressive.

Hathaway, one of the originators of the MMPI is quoted in a recent University of Kentucky publication, Social Deviancy and Adolescent Personality: "Professor Ball's findings again demonstrate that the MMPI is a useful instrument in the study of the personality patterns of nonconforming and conforming groups of adolescents" (Ball, 1962, p. VIII).

Halroyd (1964) attempted to identify with a new MMPI scale (PDF), defensive paranoids. Seventy-six per cent of the females tested were properly classified; 19% misclassified. Seventy-eight per cent of the males tested were properly classified; 15% misclassified.

Johnson and McNeal (1964) with data available on 316 psychiatric patients soon after admission used a multiple regression formula to predict length of stay. Demographic and MMPI predictors made possible early identification of long stay patients with greater than base rate frequency. The asymptote of prediction was reached when 6 of 24 variables had been included, suggesting that further research in the area would be redundant. Prediction with the five predictor schema was stable on a cross-validation sample of 352.

Incorporating Conflicting Results. Not all researchers find the MMPI so useful. Among the studies which report less positive findings are the following.

Brown (1948) wanted to determine whether a University of Minnesota freshman group could be considered a sample of the original normal population of college students used by Hathaway and McKinley in the derivation of the MMPI scales. They found significant differences among the several college populations on which the MMPI data were available. Thus a valid interpretation of an individual profile would seem to require knowledge of whether an individual's group differed significantly from the original "college normal" population. Should other researchers wish to make similar comparisons, the findings by Mueller (1965) of the means and standard deviations from the administration of the MMPI to 260 males and 205 females at Michigan State University can be located in Appendix C.

Sanders (1950) attempted the prediction of academic success among university freshmen in a school of education. Four hundred seventy-three students were given the ACE and the MMPI. Using honor point ratio as the criteria, it was found that neither measure alone nor a regression equation was acceptable for predicting grades of individuals though they may be for group prediction.

Hoyt and Norman (1954) found that grades were predicted more accurately for freshmen men with normal profiles than those with deviant profiles. No differences were found in percentages of over and under-achievers who scored high or low on any MMPI scale.

Patterson (1962) reported having the experience of turning up about 10 false positives for every disturbed student among those having high scores on the MMPI. It was hypothesized that there may be something peculiar about college students on clinical tests like the MMPI. Caution in interpretation except as a single part of a clinical evaluation was stated.

Seegars (1962) with an N of only 25 females found indistinguishable bright and probationary students.

Weigand (1951) summarized studies of student success and failure:

The survey of the literature in the field of prediction of academic success directs attention to four main conclusions. First, intellectual factors have been emphasized.... Second, the various measures of intellectual factors correlate .5 and .7 with grade point averages in college. Third, high school grades and subject matter tests are superior to intelligence tests for predicting college grades. Fourth, ... there is acceptable evidence that personal-data items, certain aspects of personality, and motivational aspects of the individual are important in identifying those students who will fail (p. 201).

It is the investigation of that fourth conclusion toward which this study is directed.

Quinn (1957) has observed that when intelligence was properly controlled the MMPI failed to define the differential personality characteristics of under and overachievers. He posited that many of the MMPI characteristics that differentiated under the overachievement in past studies could be ascribed to the influences of intelligence.

The relationship of personality assessment to academic achievement surveyed here indicates inconclusive and contradictory findings. This apparent ambiguity is somewhat explained by the selectiveness and diversity in American education as well as the crudeness of contemporary measurement tools.

LUTHERAN YOUTH RESEARCH STUDIES

The definitive study of the Lutheran Youth Research Inventory (LYRI) has been published by Strommen (1963). His scholarly report of a four-year study of 3000 Lutheran youth primarily from the midwest is the only technical literature thus far available. Technical data for that somewhat popularized report can be gleaned from Strommen's unpublished doctoral dissertation completed under the direction of C. Gilbert Wrenn (Strommen, 1960).

The LYRI was normed on a randomly selected sample of high school sophomores, juniors, and seniors of both sexes. This investigator is the first known to use the LYRI with a college population. It has been learned that since the inception of this study nineteen Lutheran colleges have initiated the use of the LYRI with their students. Findings from these studies have yet to be published.

FACULTY RATING STUDIES

Studies made of faculty judgment of student emotionality are somewhat more available than LYRI studies. Billard (1962) compared teacher ratings of personality with results of an incomplete sentence blank. He tried to identify high school freshmen with acute problems. In spite of rather laborious scoring required, values were seen in the patterns that emerged.

The relationship of the teacher's knowledge of the student's background to the effectiveness of teaching and the relationship between teacher's knowledge of students and certain selected teacher characteristics are samples of related studies. Much of the literature records

pupil perception of the teacher. Apparently little study has been made of the teacher's perception of the college student.

The dearth of literature is not, in itself, a hazard to the present study since the relationship of personality assessment to its instrumentation is part of the purpose of this investigation. The two qualitative studies reported below tend to supply the lack of quantitative studies.

Hathaway and Monachesi (1963) tested 11,319 ninth grade students in Minnesota. They designed their study to compare the MMPI with predictions of behavior derived from teacher ratings. The teachers in the schools who were familiar with the students were asked to list five students they thought most likely to get into serious difficulty with the school authorities or the law within the next four years. They were also asked to list five students most likely to show evidence of emotional maladjustment within the next four years. The names from one or more teachers of each school were then combined in final lists in the two prediction categories. No real effort was made to get exactly ten or to restrict the number named.

From the vast data collected by Hathaway and Monachesi (1963), conclusions of interest to the present study follow:

The variety of personality types among dropouts makes it hard to predict accurately from the MMPI categories. To generalize from scale 8, which is most generally related to dropout for boys, some of these adolescents probably isolate themselves and are not very visible, appearing drab and uninteresting in contrast to their troublemaking and much more obstreperous classmates who are potential delinquents. Teachers attempting to pick future delinquents were found to be as good, if not better, in predicting which pupils would drop out of school (p. 102).

Ball (1962, p.88) anticipated that ratings by teachers would depend in large part upon the dispositions and attitudes of the teachers. Since

these very dispositions are a part of the total school situation the student encounters, they are pertinent to such a study. It is not assumed that the teachers' ratings have any psychological validity other than the social situational sense described.

To involve a faculty of nearly thirty teachers in making judgments about student emotionality admits of a wide variance in validity. Three factors tended to reduce this hazard. First, the school enjoyed a wide reputation for a pervasive "family spirit." Both faculty and students spoke of a "glass house" existence. Second, faculty members were dedicated both in principle and practice to individualized instruction. Students dropped in without appointments at faculty offices and homes with high frequency. Third, only 23 students in this sample of 256 were commuters. The compact residential campus afforded casual and informal interaction of faculty and students.

SUMMARY OF RELATED RESEARCH

This chapter has surveyed the historical development of psychometric theory and practice. The focus has been on personality assessment. Studies of student attrition found research insights in the studies made on secondary school samples but the major interest was on junior college freshmen students. Significant studies from the vast research on the MMPI were discussed under the subjects of screening college students, under and over-achievement, deviant behavior and conflicting results. This was followed by a discussion of the LYRI. The chapter concluded with an exploration of literature on faculty rating studies.

The study of related literature afforded stimulus and direction for the design of the study to be reported in the next chapter.

CHAPTER III

DESIGN AND PROCEDURES

INTRODUCTION

In this chapter the sample of the population studied will be described and the design of the study will be discussed. The investigation will be divided into two parts. The first will consist of hypotheses testing and the second will describe and explore selected demographic data. The administration of instruments used and coding procedures will be discussed. The methodology for the design and analysis will be detailed.

THE SAMPLE

The 1963-1964 freshman class of Waldorf Junior College was selected for this investigation. Waldorf College, located at Forest City, Iowa, is the only two year college in the U. S. sponsored by the American Lutheran Church. Liberal arts, pre-professional, and terminal programs in business and industrial arts are offered. Eighteen states and four foreign countries were represented in the freshman class of 1963-1964. Forty per cent of the students were residents in Iowa. Membership in the American Lutheran Church was claimed by 82%. The modal occupational background of parents was agricultural. The sample included 252 subjects of which six foreign and special students were excluded to enhance the homogeneity of the sample. Additional demographic data is presented in Appendix B.

DESIGN

Criterion (Dependent) Variables

Dropouts. Students who matriculated at Waldorf College in September, 1963, and who did not enroll as sophomores in 1964 constitute the first criterion group. Hereafter this group will be called Dropouts. The percentage of dropouts in relation to the size of the class at matriculation was 32%. Enrollment information was supplied by the Office of the Registrar.

Faculty Judgment of the Acutely Concerned. At the conclusion of the school year, May, 1964, the Waldorf College faculty was asked by the investigator to identify on a list of all freshmen those students who seemed to have acute concerns that may have tended to inhibit their academic success. An additional refinement was the limitation to students with whom the faculty member had some personal interaction. Any first-hand encounter was included. The locus of the relationship was not considered: classroom, office, home, or casual campus contact. The faculty members were asked to limit their selection to 10% of the students in their classrooms or a maximum of 25 students from the whole freshman class. Three student personnel workers were asked to limit their selection to 20% of the class or a maximum of 50 students. This weighted the nonclassroom contacts in response to an awareness that only about 10% of the student-week is spent in classrooms. Faculty members completed their judgments independently. All of the 29 faculty members responded.

Not identified by any faculty member to have acute intrapersonal concerns that may have tended to inhibit academic success were 33% of

the class. Approximately 20% of the class were identified by four or more faculty members to have acute intrapersonal concerns. Students in the latter group constitute the second criterion group hereafter called Acute Concerns.

TABLE 3.1--Students with acute concerns identified by the faculty.

Number of faculty members who identified a given student																			
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
94	55	26	24	12	9	13	3	2	3	3	2	0	0	1	1	0	0	1	
Number of students identified																			

Predictor (Independent) Variables

Minnesota Multiphasic Personality Inventory. The MMPI was developed in the early forties as a psychometric instrument designed to provide in a single test an objective assessment of personality characteristics that affect personal adjustment.

The MMPI contains 550 items which were empirically selected to differentiate between normals and criterion groups of clinically diagnosed abnormals who indicated relatively pure psychiatric syndromes (Dahlstrom and Welsh, 1959). The items are arranged in ten clinical and four validity scales of known reliabilities (Hathaway and McKinley, 1951). Reliability studies indicate that profile configurations and rank order positions of any one scale appear quite stable (Layton, 1954, p. 634-660). The authors have reported that test-retest reliability coefficients range from .71 to .83 (Froehlich and Hoyt, 1959).

The subject is asked to sort all the items into three categories: True, False and Cannot Say. The Cannot Say score is regarded both as a gross validity measure and a measure of more subtle test-taking attitudes (Ball and Carroll, 1962).

Personality characteristics may be assessed on the basis of scores on ten clinical scales. The original psychiatric nomenclature for the clinical scales has tended to be abandoned in favor of a numerical label for each scale. Although the scales were named according to the abnormal manifestation of the symptomatic complex, they have all been shown to have meaning within the normal range (Hathaway and McKinley, 1951, p. 6). A recent normative group of Michigan State University freshmen is reported in Appendix C (Mueller, 1964).

Table 3.2 specifies characteristics of the scales selected for use in this investigation.

TABLE 3.2--Characteristics of selected MMPI scales.¹

Scale number	Scale name	Clinical	Normal expression
	?		Can not or will not answer
	L		Illiteracy, defensiveness, faking good
	F		Unusual symptoms, self-depreciation, faking-bad, test-taking attitude
	K		Correction factor; self-acceptance
1	Hs	Hypochondriasis	Concern about body; tired, lethargic
2	D	Depression	Self-dissatisfied, low morale, unhappy
3	Hy	Hysteria	Idealistic, naive, ill under stress
4	Pd	Psychopathic deviation	Aggressive socially, rebellious, cynical
5	Mf	Masculine-feminine	Interest pattern of opposite sex
6	Pa	Paranoia	Perfectionistic, stubborn, hard to know
7	Pt	Psychasthenia	Dependent, anxious, inferiority feelings
8	Sc	Schizophrenia	Negative, odd, difficult, apathetic
9	Ma	Hypomania	Expansive, optimistic, unorthodox
10	Si	Social introversion	Unassertive, self-conscious, shy
	ES	Ego strength	Spontaneity, personal adequacy, vitality
	DY	Dependency	Indecisive, ambivalent, distrusts self
	DO	Dominance	Dominates in face-to-face relationships
	RE	Social responsibility	Internalizes social-moral responsibility
	PR	Prejudice	Attitudes toward minority groups
	ST	Social status	Attitudes toward socio-economic status
	CN	Control	Measure of impulsiveness and planning

¹Adapted from Hathaway and McKinley, 1951, and Hathaway and Monacheisi, 1963.

In summary, The Fifth Mental Measurements Yearbook (Buros, 1959) is quoted. Warren Norman (Buros, 1959, p. 168) wrote: "This instrument (the MMPI) is probably the most carefully constructed and thoroughly researched inventory available for personality assessment. It is likely to be an increasingly useful clinical tool." In the previously quoted source Albert Ellis stated (p. 166): "... it can be confidently stated that in the whole history of modern psychology there has been no other personality inventory on which so much theoretical and practical work has been done." Ellis added: "In spite of all this research activity, the question of just how valid a clinical instrument the MMPI is has still not been finally settled."

Lutheran Youth Research Inventory. The LYRI is a psychometric instrument designed to provide a way for youth to describe themselves and to indicate the kinds of help they desire. Of the 44 available scales, 32 scales were selected for study in relation to Waldorf College freshmen.

The norm groups constitute a randomly selected probability sample of approximately 4000 high school youth (ages 15-17) who are members of Lutheran congregations in the U. S. and Canada.

Two measures of reliability were used in determining the internal consistency of the sub-scales--Kuder-Richardson's formula 20 for items with dichotomous responses and Hoty-Stunkard's analysis of variance for items with 6 responses. The Hoyt-Stunkard reliability coefficients range from .74 to .89 for a mean of .83 on the sub-scales. The reliability coefficients for the ten major scales range from .84 to .97, a mean of .91.

Content validity for Lutheran youth has been established by a check on the universe of youth's concerns during a national survey of an exact probability sample. Congruent validity and relative frankness were demonstrated through a high correlation with the MMPI Lie (L) scale. Construct validity has been established through a factor analysis, 30 criterion groups and a cross-validation study. The latter study was a replication in a second national survey of youth in a different church body. Table 3.3 specifies characteristics of LYRI scales selected for use in this study.

TABLE 3.3--Characteristics of selected LYRI scales.

Variable	Name	Description
1.	Family Unity	Feelings about the degree of love and cohesiveness in the family.
2.	Family Spiritual Growth	Awareness of signs that the family lacks a common faith.
3.	Parental Authority	Concern over autocratic parental behavior and parental mistrust.
4.	Intra-Family Relationships	Feelings of hostility toward family members and a troubled awareness of poor inter-personal relationships.
5.	Dating and Morals	Feelings of guilt over present dating behavior.
6.	Life Partner	Worry about finding the right marriage partner or being wanted by somebody else.
7.	Dating and the Church	Anxiety over disparity between the ideal of the church and the experiences of real life.
8.	Spiritual Doubts	Distress over feelings of rebellion against the teachings of the church.
9.	Personal Assurance	Worry over not feeling certain of God's forgiveness.
10.	Inadequacy Feelings	Fears and disappointment which result from a low estimate of self and one's achievements.
11.	Academic Problems	Fear of failure and concern over academic limitations.
12.	Social Relationships	Oversensitive awareness of the abilities of others in a group.
13.	Relation to Teachers	Feelings of disapproval both from and toward the school, its teachers, and its courses.
14.	Peer Acceptance	Lonely awareness of feeling like an outsider and unnecessary to any group.
15.	Judgment of Peers	Troubled awareness of personal and peer group behavior that falls below expectations.

TABLE 3.3--Continued.

Vari- able	Name	Description
16.	Personal Consistency	Feelings of guilt over falling short of personal standards.
17.	Adult Consistency	Disappointment and critical feelings toward adults over their failure to live up to high standards and ideals.
18.	Christian Vocation	Concern over failing to live as a committed Christian in daily living and career.
19.	Moral Problems	Attraction to questionable or unethical activities.
20.	Boy-Girl Relationships	Knowing the Christian concept of sex, dating and marriage.
21.	Spiritual Guidance	The application of Christian principles to daily living and thinking.
22.	Family Counseling	Increasing the unity and spiritual vitality of the family.
23.	Self-realization	Greater self-understanding and self-realization.
24.	Achievement	Achievement and the status symbols of success.
25.	Service	Service and a sense of meaning and beauty in life.
26.	Happiness	Marital happiness, security and contentment.
27.	Justification	Recognition and acceptance of the doctrine of justification by faith.
28.	Humanitarian	Attitudes of mercy or inhumanity toward those of different nationality, race, or creed.
29.	Conservatism	Agreement with the traditional doctrines of the Lutheran church.
30.	Christian Concepts	Perception of Christian concepts and rejection of a generalized religion.
31.	Forgiveness	Personal awareness of God's constant forgiveness.
32.	Religious Commitment	Personal participation in daily experience of religious values.

DEMOGRAPHIC DATA

The original design of the investigation being reported in this thesis was confined to the MMPI and LYRI. The research question was: Would either or both of these instruments indicate early in the school year students with acute intrapersonal concerns and with marked dropout potential? To afford an answer based on broader information, three additional sources were added.

The first was standard data from the students' files in the Office of Admissions. A biographical, familial, scholastic, and medical history of the student may yield demographic data that could be quantified for statistical manipulation. Extensive study by the investigator prompted the conclusion that the admission forms used were not designed for the kind of collation required. Since such a case study possibility did not prove possible, an alternative was pursued.

A second source of demographic data was the construction and administration of a questionnaire. Based on the survey research model of Kerlinger (1964), 73 forced choice items were constructed. The items included the students' feelings and their intensity about the other students, the faculty, administration, board of regents, alumni and the sponsoring body of Waldorf College, the American Lutheran Church. Selected socio-economic factors, matriculation influences, self-estimate of certain aptitudes, and attendance yielded quantifiable information. Additional items focused on the students' relationships to parents, home congregation, classmates, and close campus friends. All of the items are reproduced in Appendix D.

A third source of demographic data was scores on the American College Testing Program (ACT) battery of tests in English, mathematics, social studies, and science. Developed for admissions purposes, the ACT was designed for smaller, less selective colleges.

ADMINISTRATION PROCEDURES

During the first week of the school year, September, 1963, all entering freshmen at Waldorf College completed the MMPI, the LYRI, and the ACT. The instruments of the study were administered by the Dean of Instruction, Richard Moe, and the Dean of Students, Kenneth Johnson. Machine scoring was done by National Computer Systems, Minneapolis, Minnesota. Code numbers were assigned to student responses so that personal associations would not contribute a bias.

During the fall of 1964 all the freshmen of the previous year received by mail a questionnaire previously described together with a stamped, self-addressed envelope. Anonymity was attempted through coding and the request that names be omitted. Data from completed questionnaires was transferred to code sheets for key punching by the Michigan State University Data Processing Office. Statistical computations were done on the MSU Control Data 3600 Computer.

SCORING AND CODING

Scores on the LYRI instrument were reported in standard scores. The MMPI scales were standard scores with the exception of the Question (?) scale which was reported in raw scores. The demographic data were reported in raw frequency distributions and percentages. The ACT was reported in standard scores. Coding is reported in Appendix G.

HYPOTHESES TO BE TESTED

Two major hypotheses have been formulated and are stated below in research, null, and alternate forms:

I. H_R Selected MMPI and LYRI scales will predict Waldorf College freshmen who withdraw after the freshman year.

H_0 There will be no difference between a multiple regression coefficient for students who drop out and zero.

$$H_0: R = 0$$

H_A There will be a difference between a multiple regression coefficient for students who drop out and zero.

$$H_A : R \neq 0$$

II. H_R Selected MMPI and LYRI scales will predict Waldorf College freshmen who have acute intrapersonal concerns, measured by faculty judgment.

H_0 There will be no difference between a multiple regression coefficient for students with acute intrapersonal concerns and zero.

$$H_0: R = 0$$

H_A There will be a difference between a multiple regression coefficient for students with acute concerns and zero.

$$H_A: R \neq 0$$

ANALYSIS PROCEDURES

MMPI and LYRI

A preliminary factor analysis of the MMPI and LYRI instruments was made by the use of the Computer Institute program identified as Fanod 3.

Principal axes and analytic orthogonal rotational solutions were performed using the MMPI and LYRI scales selected for study. Rotated factor loadings indicated which independent variables correlated highest with the criterion and lowest with each other.

A second study was made of the MMPI and LYRI instruments by the use of the Computer Laboratory program identified as CORE 4. CORE (correlation and regression), program 4, calculates multiple regressions (least squares fits to arbitrary functions) on the CDC 3600 computer. Correlations were calculated to indicate how well the independent variables "explained" the dependent variable. To restate, the problem was one of giving normalized weights to a series of independent variables in the prediction of the dependent variable. The normalized weights or "beta weights" were obtained by adjusting each variable by its standard deviation before estimating the coefficients. Predictor variables were selected from those which correlated highest with the criterion and lowest with each other, as suggested by Cronbach (1960, p. 339).

"F" tests with .05 and .01 levels of significance were made for each independent variable to determine the probability of independence. The contribution of the predictor variables to the regression equation was determined by study of partial correlation coefficients and intermediate solutions.

A third study of the MMPI and LYRI instruments was made to cross-validate multiple regression equations. The multiple regression weights determined for the variables in the first randomly dichotomized sample were used in the second randomly dichotomized sample to determine how well the composite score predicted the criterion as compared with the

multiple R in the first sample. Guilford proposed, "If there is too much difference (and here a test of statistical significance of a deviation in R may be in order), one may...develop a revised equation. If the drop in R is small and insignificant, one may accept the new value as a verification of the weights and also as a more realistic index of validity for the population" (Guilford, 1954, p. 406).

Mosier (1951, pp. 5-11) discussed five distinct designs related to cross-validation. The most parsimonious design determined, by the method of least squares, the multiple regression weights and multiple correlation coefficient for the first-half of the sample. The findings were then cross-validated on the second-half of the sample. A computer program to cross-validate regression equations was developed for the current study after the model of Mosier.

A fourth study was made of the MMPI and LYRI instruments by the use of an experimental Computer Laboratory program tentatively identified as SCOPE-R. Discriminations between highly correlated data were attempted by systematic reduction of variables. The criteria for reduction was identification of the highest R^2 deletes.¹ The writer of the program, W. L. Ruble, reported that the conventional criterion of selection according to the beta weights afforded the hazard of fluctuation.² Cross-validation of the regression equations derived by the SCOPE-R program was attempted by inspection of similarities and differences

¹The R^2 which would have been obtained had the independent variable not been included in the regression equation.

²Personal communication.

between the randomly dichotomized male groups and the randomly dichotomized female groups.

A fifth study of the MMPI and LYRI instruments tested for significance the difference between means on the MMPI scales of the students who elected not to release their LYRI data for research and the means of those who signed release statements. Students "t" test was completed for the selected MMPI variables.

Questionnaire and Demographic Data

The Michigan State University Computer Institute for Social Science Research provided a computer program for the analysis of contingency tables. The program, called ACT II, Scene II, permitted a two-column field and provided chi square statistics with degrees of freedom for tests of independence. Product-moment correlation coefficients were established to measure the magnitude of linear relationships found to be significant according to the chi square statistics. Response categories were combined to increase the expected cell frequencies, as suggested by Edwards, (1954, p. 384). Responses that yielded "No Information" were studied separately in order that levels of significance would not be biased by items which many respondents omitted.

SUMMARY OF THE DESIGN AND PROCEDURES

In this chapter the sample was described and the design of the study discussed. The design involved two criterion groups (students who drop out and students who have acute intrapersonal concerns) and forty-nine independent variables from selected MMPI and LYRI scales.

Additional demographic data were collected by the use of an eighty-item questionnaire. The administration of the instruments employed, scoring and coding was described. Two hypotheses to be tested were stated and analysis procedures discussed.

CHAPTER IV

ANALYSIS OF THE DATA

INTRODUCTION

In this chapter an analysis of the data will be made and interpretations presented. The criteria of parsimony will prevent reporting experimental variations in detail. Results from the nonparametric chi square, factor analysis and multiple regression statistical procedures will be reported using conventional symbols. Discussion will focus on the findings that were statistically significant. Where expected frequencies were less than five and where there was only one degree of freedom, Yates' correction for continuity was applied to guard against Type I error (Edwards, 1954, p. 384). It was arbitrarily decided that data testing results would be considered significant whenever the probability of a Type I error did not exceed .05, that is, whenever there was no greater than 5% probability of the results occurring by chance where the null hypothesis was true. When the level of significance did not exceed .01, this level was observed.

SUBJECTS

Questionnaire

A total of 252 subjects was available for the study. Of this number 144 were male and 108 female. Useful responses were received from 81% (N = 204) of the subjects. Of this number 53% (N = 109) of the males and 47% (N = 95) of the females responded.

From among the useful responses 25% (N = 27) of the male dropouts and 26% (N = 25) of the female dropouts responded. From among the 204

useful responses, 13% (N = 14) of the male acute concerns and 7% (N = 7) of the female acute concerns responded. Related data is reported in Table 4.1.

TABLE 4.1--Responses to instruments employed.

Items	Male		Female		Total	
	N	%	N	%	N	%
Questionnaire						
Subjects available	144	100	108	100	252	100
Responses	109	53	95	47	204	81
Dropouts	27	25	25	26	52	25
Acute concerns	14	13	7	7	21	10
No LYRI data						
Dropouts	16	15	6	6	22	11
Acute concerns	11	10	5	5	16	8
MMPI - LYRI						
Subjects available	101	100	88	100	189	100
Subjects not available ¹	43	43	20	23	63	33
Responses	83	82	78	88	161	85
Dropouts	32	39	25	32	57	35
Acute concerns	19	23	9	10	28	17
No LYRI data						
Dropouts	11	13	6	8	17	11
Acute concerns	6	7	3	3	9	6

¹Subjects elected not to release LYRI scores for research purposes.

MMPI - LYRI

A total of 189 subjects was available for the study. Of this number 101 were male and 88 female. LYRI confidentiality releases were not signed by 43% (N = 43) of the males and 23% (N = 20) of the females. Data on the LYRI for 63 subjects were thus unavailable. Useful responses were available for 82% (N = 83) of the males and 88% (N = 78) of the females.

From among the 161 useful responses 39% (N = 32) of the male dropouts and 32% (N = 25) of the female dropouts are included. Among the 161 useful responses 23% (N = 19) of the male acute concerns and 10% (N = 9) of the female acute concerns are included. Related data is reported in Table 4.1.

The ratio of useful responses was higher for females than males. Clinical observation tended to indicate a higher rate of conformity to academic activity by freshmen women.

A larger N would have been possible if LYRI confidentiality had not been honored. Professional ethics would have been violated in such a case. LYRI normative data was derived from subjects who signed data released for research purposes. The LYRI release and nonrelease groups were significantly different as measured by the MMPI. In Appendix G the mean, standard deviation, and "t" test for differences between means are reported. All scales were significant at the .01 level.

ANALYSIS OF THE QUESTIONNAIRE AND SAT TESTS

The analysis will be limited to the following four major interests: (a) response categories that test significance at the .05 or .01 levels, (b) significant product-moment correlations between dropout-nondropouts and between acute concerns and nonacute concerns, (c) deviations of the mean from clinical expectancy, and (d) wide departures of the mode from the mean. The mean and standard deviation for each questionnaire item is reported in Appendix E. Primary interest will be in relationships between dropouts and nondropouts, acutely concerned students and the less concerned students. Of secondary interest will be comparisons between dropouts and students rated by the faculty to have acute intra-personal concerns.

"No information" categories with .05 or .01 level of significance will be reported in applicable tables. In such instances the high proportion of nonresponses contributed to the significance level of the particular cell before the "No information" category was removed.

Analysis and Intensity of Feelings

The analysis of feelings about college subgroups and sponsoring body produces the following results. Positive to mixed feelings about students were felt quite strongly. More mixed than positive feelings about the faculty were felt quite strongly. Positive feelings about the administration were felt quite strongly. Females with acute concerns felt very positively about the administration. Positive feelings about the regents were not felt very strongly except by male dropouts who felt quite strongly. The mode for feelings about the regents was mixed. Positive feelings about alumni were not held very strongly

though the mode was "quite strongly." Very positive feelings about the American Lutheran Church were felt quite strongly.

TABLE 4.2--Analysis of feelings about students, faculty, administration, regents, alumni, and the American Lutheran Church.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Waldorf students								
1. Very positive	0	4	7	20	1	4	0	0
2. Positive	2	21	10	29	5	19	3	23
3. Mixed	10	30	11	31	8	31	5	38
4. Negative	14	4	0	0	0	0	0	0
5. Very negative	2	4	0	0	0	0	0	0
9. No information	17	36	7	20	12*	46	5**	38
Total	47	100	35	100	26	100	13	100
Waldorf faculty								
1. Very positive	6	13	5	14	2	8	0	0
2. Positive	7	15	11	31	5	19	3	23
3. Mixed	13	28	12	34	5	19	5	33
4. Negative	4	9	0	0	2	8	0	0
5. Very negative	0	0	0	0	0	0	0	0
9. No information	17	36	7	20	12*	46	5**	38
Total	47	100	35	100	26	100	13	100
Waldorf administration								
1. Very positive	2	4	3	9	2	8	3	23
2. Positive	9	19	16	46	4	15	5	38
3. Mixed	15	32	6	17	5	19	0	0
4. Negative	3	6	3	9	2	8	0	0
5. Very negative	1	2	0	0	1	4	0	0
9. No information	17	36	7	20	12*	46	5**	38
Total	47	100	35	100	26	100	13	100

TABLE 4.2--Continued.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Waldorf board of regents								
1. Very positive	4	9	0	0	2	8	0	0
2. Positive	5	11	11	31	2	8	4	31
3. Mixed	16	34	11	31	6	23	2	15
4. Negative	1	2	3	9	2	8	2	15
5. Very negative	1	2	1	3	1	4	0	0
9. No information	20**	40	9	26	13**	50	5*	38
Total	47	100	35	100	26	100	13	100
Waldorf alumni								
1. Very positive	3	6	1	3	2	8	0	0
2. Positive	11	23	13	37	4	15	2	15
3. Mixed	12	26	10	29	6	23	6	46
4. Negative	3	6	1	3	1	4	0	0
5. Very negative	0	0	1	3	0	0	0	0
9. No information	18	38	9	26	13**	50	5**	38
Total	47	100	35	100	26	100	13	100
American Lutheran Church								
1. Very positive	6	13	9	26	5	19	2	15
2. Positive	14	30	14	40	5	19	6	46
3. Mixed	10	21	5	14	3	12	0	0
4. Negative	0	0	0	0	1	4	0	0
5. Very negative	17	36	7	20	12*	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

TABLE 4.3--Intensity of feelings about students, faculty, administration, regents, alumni, and the American Lutheran Church.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Waldorf students								
1. Not at all strongly	0	0	1	3	0	0	0	0
2. Not very strongly	2	4	3	9	3	12	1	8
3. Quite strongly	17	36	17	49	7	27	4	31
4. Very strongly	11	23	7	20	4	15	3	23
9. No information	17	36	7	20	12	46	5**	38
Total	47	100	35	100	26	100	13	100
Waldorf faculty								
1. Not at all strongly	0	0	1	3	0	0	0	0
2. Not very strongly	2	4	1	3	1	4	1	8
3. Quite strongly	15	32	21	60	8	31	5	38
4. Very strongly	13	28	5	14	5	19	2	15
9. No information	17	36	7	20	12	46	5**	38
Total	47	100	35	100	26	100	13	100
Waldorf administration								
1. Not at all strongly	0	0	1	3	0	0	0	0
2. Not very strongly	4	9	3	9	1	4	1	8
3. Quite strongly	18	38	17	49	9	35	4	31
4. Very strongly	8	17	6	17	4	15	3	23
9. No information	17	36	8	23	12	46	5**	38
Total	47	100	35	100	26	100	13	100

TABLE 4.3--Continued.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Waldorf regents								
1. Not at all strongly	3	6	4	11	2	8	1	8
2. Not very strongly	4	9	4	11	0	0	3	23
3. Quite strongly	13	28	15	43	5	19	3	23
4. Very strongly	7	15	3	9	6	23	1	8
9. No information	20*	43	9	26	13	50	5*	38
Total	47	100	35	100	26	100	13	100
Waldorf alumni								
1. Not at all strongly	2	4	2	6	2	8	1	8
2. Not very strongly	4	9	3	9	1	4	3	23
3. Quite strongly	18	38	19	54	7	27	4	31
4. Very strongly	5	11	2	6	3	12	0	0
9. No information	18	38	9	26	13	50	5*	38
Total	47	100	35	100	26	100	13	100
American Lutheran Church								
1. Not at all strongly	0	0	1	3	0	0	0	0
2. Not very strongly	2	4	1	3	1	4	0	0
3. Quite strongly	20	43	15	43	7	27	5	38
4. Very strongly	8	17	11	31	6	23	3	23
9. No information	17	36	7	20	12	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

Withdrawal Timing, Responsibility and Current Activity

Approximately one-half of male dropouts and one-third female dropouts withdrew after their first full year. A second withdrawal period occurred following the first semester. Highly significant was the personal acceptance of responsibility for withdrawal. About one-third of the students did not respond to this question. Perhaps an unwillingness to admit parental involvement was a partial reason. Highly significant among dropouts of both sexes was continued study at another school. The conventional definition of a dropout being a student who withdraws and does not transfer to another institution proves inapplicable. Junior college leaders dedicated to individual differences encourage transfer when another curriculum better meets a student's need.

TABLE 4.4--Time of withdrawal from Waldorf College.

Response categories	Dropouts				Acute concerns			
	Male ¹		Female ²		Male ³		Female	
	N	%	N	%	N	%	N	%
1. First week	0	0	1	3	0	0	2	15
2. First month	0	0	0	0	0	0	0	0
3. First semester	6	13	8	23	3	12	0	0
4. Second semester	1	2	2	6	1	0	0	0
5. Summer 1964	21**	45	12**	34	5**	19	2	15
6. First sophomore week	0	0	0	0	0	0	0	0
7. First sophomore month	1	2	1	3	0	0	0	0
9. No information	18**	38	11**	31	7*	27	4	31
0. Not applicable	0	0	0	0	10	38	5	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

¹Product-moment correlation coefficient (r) = -.84

²Product-moment correlation coefficient (r) = -.25

³Product-moment correlation coefficient (r) = -.71

TABLE 4.5--Locus of withdrawal decision.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male ¹		Female ²	
	N	%	N	%	N	%	N	%
1. Personal	24**	51	20**	57	6**	23	2*	15
2. Father	0	0	1	3	0	0	0	0
3. Mother	0	0	0	0	0	0	0	0
4. Both parents	0	0	0	0	0	0	0	0
5. Peers	5	11	3	9	3	12	2	15
9. No information	18**	38	11**	31	7*	27	4**	31
0. Not applicable	0	0	0	0	10	38	5	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

¹Product-moment correlation coefficient (r) = -.25²Product-moment correlation coefficient (r) = -.29

TABLE 4.6--Analysis of current activity.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Study	21**	45	14**	40	5*	19	1	8
2. Work	8	17	7	20	4	15	2	15
3. Study and some work	1	2	0	0	0	0	0	0
4. Work and some study	0	0	0	0	0	0	0	0
5. Armed service	0	0	0	0	0	0	0	0
6. Marriage	0	0	4	11	0	0	1	8
9. No information	17**	36	10**	29	7*	27	4**	31
0. Not applicable	0	0	0	0	10	38	5	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

Pre-college Residence and Schools

Before matriculation at Waldorf about one-third of the female dropouts lived in rural communities. Female dropouts tended to live in smaller communities than females who returned as sophomores. Family mobility did not offer evidence of contributing to either dropouts or acute concerns. Not moving at all was reported by half to three-fourth of the respondents. It was significant for males with acute concerns that three or more different schools were attended before entering college. Males without acute concerns attended one or two. Most dropouts attended two or three.

TABLE 4.7--Residence before matriculation at Waldorf College.

Response categories			Dropouts				Acute concerns			
			Male		Female		Male		Female	
			N	%	N	%	N	%	N	%
1.	Rural	1-99	8	17	10	29	3	12	0	0
2.	Village	100-999	6	13	4	11	2	8	3	23
3.	Town	1000-2499	2	4	4	11	2	8	1	8
4.	City	2500-24,000	8	17	5	14	3	12	1	8
5.	Large City	25,000 up	6	13	5	14	4	15	3	23
9.	No information		17*	36	7	20	12	46	5**	38
Total			47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

TABLE 4.8--Residential change of parental family during freshman year.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Not at all	29	62	27	77	14	54	6	46
2. Once	1	2	1	3	0	0	2	15
3. Two times	0	0	0	0	0	0	0	0
4. Three times	0	0	0	0	0	0	0	0
5. Four or more times	0	0	0	0	0	0	0	0
9. No information	17*	36	7	20	12**	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

TABLE 4.9--Different schools attended before matriculation at Waldorf.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. One	3	6	8 ^a	23	0	0	2	15
2. Two	10	21	8	23	2	8	1	8
3. Three	11	23	5	14	5**	19	4	31
4. Four	3	6	1	3	4	15	0	0
5. Five or more	3	6	5	14	3	11	1	8
9. No information	17*	36	8	23	12**	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

^aProduct-moment correlation coefficient (r) = -.29.

Parental Socio-economic Items

Students placed their parents in the middle class. Male dropouts rated their family social class slightly higher than nondropouts. Females with acute concerns rated their family social class slightly lower than nonacute concerns. When family income was compared to the family income of friends, similarity was reported with consistency.

TABLE 4.10--Evaluation of parental social class.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Lower	1	2	0	0	0	0	0	0
2. Lower middle	6	13	4	11	2	8	2	15
3. Middle	11	23	19	54	9	35	4	31
4. Upper Middle	11	23	5	14	2	8	2	0
5. Upper	1	2	0	0	1	4	0	0
9. No information	17*	36	7	20	12**	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

TABLE 4.11--Family income, in relation to income of friends.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Much higher	1	2	0	0	0	0	0	0
2. Higher	5	11	2	6	1	4	1	8
3. Similar	20	43	21	60	11	42	6	46
4. Lower	4	9	4	11	0	0	1	8
5. Much lower	0	0	1	3	2	8	0	0
9. No information	17*	36	7	20	12**	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

Matriculation Influences

Personal responsibility for the decision to enter Waldorf College was reported by one-third of the male dropouts and two-thirds of the female dropouts. Waldorf rated as first choice of a college to attend by more respondents than the clinical experiences of this investigator would have expected. That many rated Waldorf as their second choice appeared more factual. The status person who has influenced most dropouts and acute concerns to matriculate at Waldorf has been the parish pastor. Parents were second and alumni third. The earnest pastor has tended to look to Waldorf in assisting him to meet the academic and personal needs of his parishoners with evidence of borderline academic potential. Highly significant was the role of the pastor with males but not females. High school counselors influenced the attendance of one-fourth of the females with acute concerns. Waldorf admissions workers also influenced the matriculation of these groups slightly and Waldorf

teachers not at all. Referrals from other colleges tested statistically significant for dropouts and did not exist for acute concerns.

TABLE 4.12--Locus of decision to matriculate at Waldorf.

Response categories	Dropouts				Acute concerns			
	Male ¹		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Personal	15*	32	23	66	8	31	6	46
2. Father	1	2	2	6	0	0	2	15
3. Mother	1	2	0	0	0	0	0	0
4. Both parents	6	13	0	0	3	12	0	0
5. Mutual	6	13	3	9	3	12	0	0
9. No information	18**	38	7	20	12**	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

¹Product-moment correlation coefficient (r) = $-.23$

TABLE 4.13--Waldorf rated as first choice of a college.

Response categories	Dropouts				Acute concerns			
	Male ¹		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. First	14	30	17	49	7	27	5	38
2. Second	10	21	9	26	4	15	1	8
3. Third	2	4	2	6	1	4	2	15
4. Fourth	3	6	0	0	1	4	0	0
5. Fifth or more	1	2	0	0	1	4	0	0
9. No information	17*	36	7	20	12**	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

¹Product-moment correlation coefficient (r) = $-.23$

TABLE 4.14--Primary matriculation influences.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Pastor	16**	34 ^a	6	17	10**	38 ^b	3	23
Parents	14*	30	12	34	5**	19	4	31
Alumni	8*	17	7	20	2**	8	4	31
Relative	3*	6	3	9	0	0	0	0
Friend	3*	6	8	23	0	0	0	0
H.S. counselor	1*	2	3	9	1**	4	3*	23 ^c
H.S. teacher	1	2	1	3	1	4	0	0
W.C. admissions	1*	2	0	0	1**	4	2**	15 ^d
W.C. administrator	1*	2	1	3	1**	4	0	0
College referral	1*	2	3**	9	0	0	0	0
W.C. teacher	0	0	0	0	0	0	0	0

*Significant at .05 level.

**Significant at .01 level.

^aProduct-moment correlation coefficient (r) = -.31

^bProduct-moment correlation coefficient (r) = -.36

^cProduct-moment correlation coefficient (r) = -.24

^dProduct-moment correlation coefficient (r) = -.27

Health and Study Skills

General health categories, taken from admissions medical forms, proved to be imprecise. Students who developed health problems, especially when psychosomatic, may not have responded to this item. Reading ability was reported good to fair and poorer for the students with acute concerns than those without acute concerns. Remedial study of English was significant for females. Of the male dropouts, 26% had no remedial study. Of the female dropouts 40% had no remedial study. The mean was a full response category lower for female dropout and acute concerns. Returning students had received and had been more receptive to remedial study.

TABLE 4.15--General health during freshman year.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Very good	27	57	23	66	13	50	5	38
2. Fair	2	5	5	14	0	0	2	15
3. Poor	1	2	0	0	1	4	1	8
9. No information	17	36	7	20	12*	46	5*	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

TABLE 4.16--Reading ability at the beginning of the freshman year.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Very good	9	19	8	23	2	8	2	15
2. Good	11	23	10	29	4	15	2	15
3. Fair	8	17	10	29	8	31	3	23
4. Poor	2	4	0	0	0	0	1	8
9. No information	17*	36	7	20	12**	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

TABLE 4.17--Developmental (remedial) study during freshman year.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male ¹		Female ²	
	N	%	N	%	N	%	N	%
1. English	6	13	10**	29	4	15	4**	31
2. Mathematics	3	6	1	3	2	8	0	0
3. Reading	3	6	1	3	2	8	1	8
4. None	12	26	14	40	4	15	1	8
5. English & Mathematics	2	4	0	0	0	0	1	8
6. English & Reading	2	4	1	3	2	8	1	8
9. No information	19*	40	8	23	12	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

¹Product-moment correlation coefficient (r) = .31²Product-moment correlation coefficient (r) = .37

Class and Chapel Attendance

Irregularity in class attendance was not a significant discriminating factor according to the self-report. Teachers' records may have indicated otherwise. The highly significant "No information" category for both male and female acute concerns may indicate sensitivity about responding. Both dropouts and acute concerns had slightly lower means than their comparison groups.

Chapel at Waldorf was required daily. Of the dropouts, 57% males and 77% females reported regular chapel attendance. Of the acute concerns, 46% males and 54% females reported regular chapel attendance. Similarly, the percentage of males who did not respond to this item was greater than females. The experience of the college chaplain confirmed these results. Females tended to conform to college rules more than males.

Students' Perception of Parents

Parents were perceived as more liberal by the dropouts than non-dropouts and more conservative by the acute concerns than nonacute concerns. Acutely concerned females reported some distance from their parents. Although most respondents characterized their parents as warm and flexible, acutely concerned females reported most coldness, rigidity and least religiosity. Male dropouts characterized their parents as being less helpful and less religious than nondropouts.

TABLE 4.18--Class and chapel attendance during the freshman year.

Response categories	Dropouts				Acute Concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Class								
1. Very regular 90%	25	53	23	66	10	38	2**	15 ^a
2. Regular 75%	4	9	5	14	3	11	6	46
3. Off and on 50%	1	2	0	0	1	4	0	0
4. Irregular 25%	0	0	0	0	0	0	0	0
5. Seldom 15%	0	0	0	0	0	0	0	0
9. No information	17	36	7	20	12**	46	5**	38
Total	47	100	35	100	26	100	13	100
Chapel								
1. Very regular 90%	18	38	21	60	6	23	6	46
2. Regular 75%	9	19	6	17	6	23	1	8
3. Off and on 50%	2	4	0	0	2	8	0	0
4. Irregular 25%	1	2	1	3	0	0	1	8
5. Seldom 15%	0	0	0	0	0	0	0	0
9. No information	17	36	7	20	12**	46	5**	38
Total	47	100	35	100	26	100	13	100

**Significant at .01 level.

^aProduct-moment correlation coefficient (r) = .37.

TABLE 4.19--Parents as perceived by the student.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Liberality scale								
1. Very liberal	1	2	2	6	2	8	1	8
2. Liberal	18	38	12	34	7	27	3	23
3. Neither	2	4	5	14	2	8	0	0
4. Conservative	5	11	6	17	2	8	2	15
5. Very conservative	0	0	1	3	0	0	1	8
9. No information	21**	45	9	26	13*	50	6**	46
Total	47	100	35	100	26	100	13	100
Distance scale								
1. Very distant	0	0	0	0	0	0	0	0
2. Distant	0	0	2	6	2	8	2	15
3. Neither	6	13	1	3	3	12	0	0
4. Close	14	30	14	40	5	19	2	14
5. Very close	5	11	10	29	1	4	3	23
9. No information	22**	47	8	23	15**	58	6**	46
Total	47	100	35	100	26	100	13	100
Warmth scale								
1. Very warm	7	15	15	43	2	8	5	38
2. Warm	17	36	8	23	7	27	1	8
3. Neither	2	4	4	11	3	12	0	0
4. Cold	0	0	1	3	0	0	1	8
5. Very cold	0	0	0	0	0	0	1	8
9. No information	21**	45	7	20	14**	54	5**	38
Total	47	100	35	100	26	100	13	100

TABLE 4.19--Continued.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Flexibility scale								
1. Very rigid	0	0	1	3	0	0	1	8
2. Rigid	3	6	3	9	2	8	1	8
3. Neither	3	6	4	11	1	4	1	8
4. Flexible	17	36	15	43	7	27	4	31
5. Very flexible	1	2	3	9	1	4	0	0
9. No information	23**	49	9	26	15**	58	6**	46
Total	47	100	35	100	26	100	13	100
Helpfulness scale								
1. Very unhelpful	1	2	1	3	0	0	0	0
2. Unhelpful	0	0	0	0	0	0	0	0
3. Neither	2	4	3	9	3	12	1	8
4. Helpful	15	32	13	37	6	23	3	23
5. Very helpful	6	13	10	29	2	8	3	23
9. No information	23**	49	8	23	15**	58	6**	46
Total	47	100	35	100	26	100	13	100
Religiosity scale								
1. Very religious	9	19	8	23	3	12	2	15
2. Religious	9	19	16	46	6	23	4	31
3. Neither	3	6	3	9	0	0	0	0
4. Nonreligious	1	2	0	0	2	8	0	0
5. Antireligious	0	0	0	0	0	0	1	8
9. No information	25**	53	8	23	15**	58	6**	46
Total	47	100	35	100	26	100	13	100

**Significant at .01 level.

Students' Perception of Home Congregation

Dropouts characterized their home congregations as being more helpful than did nondropouts. Could it be that churches express concern for students in ways that are perceived less by students without marked deviations? Dropout females perceived their congregations as being more conservative. Acutely concerned males reported more liberal and formal perceptions. Each deviate group characterized their home congregations as being less warm and more distant.

Waldorf College inherited a tradition in Lutheranism brought to America by Norwegian immigrants who had been influenced by the revival movement initiated by Hans Nielsen Hauge. Haugeanism has been characterized by informality in worship, evangelistic zeal, and earnest living of the Christian faith. Of the dropouts, one-third of the males and one-half of the females did not know what "Haugean" meant. When the "No information" category was added to the "Don't know" category, 85% of the male dropouts and 80% of the female dropouts were included. It appeared that this dropout sample was not conversant with "Haugeanism."

TABLE 4.20--Home congregation as perceived by the student.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Helpfulness scale								
1. Very helpful	9	19	5	14	5	19	3	23
2. Helpful	13	28	17	49	6	23	1	8
3. Neither	5	11	6	17	2	8	2	15
4. Unhelpful	0	0	0	0	0	0	0	0
5. Very unhelpful	0	0	0	0	0	0	1	8
9. No information	20*	43	7	20	13*	50	6**	46
Total	47	100	35	100	26	100	13	100
Liberality scale								
1. Very conservative	1	2	6	17	0	0	0	0
2. Conservative	8	17	9	26	4	15	4	31
3. Neither	7	15	7	20	4	15	1	8
4. Liberal	8	17	4	11	4	15	0	0
5. Very liberal	0	0	0	0	0	0	1	8
9. No information	23**	49	9	26	14*	54	7**	54
Total	47	100	35	100	26	100	13	100
Formality scale								
1. "High church"	2	4	1	3	1	4	0	0
2. Formal	11	23	11	31	8**	31 ^a	4	31
3. Neither	4	9	4	11	0	0	2	15
4. Informal	6	13	10	29	1	4	0	0
5. "Low church"	1	2	0	0	0	0	0	0
9. No information	23**	49	9	26	16**	62	7**	54
Total	47	100	35	100	26	100	13	100

TABLE 4.20--Continued.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Warmth scale								
1. Very warm	3	6	6	17	1	4	3	23
2. Warm	18	38	14	40	6	23	2	15
3. Neither	4	9	6	17	3	11	1	8
4. Cold	0	0	1	3	1	4	1	8
5. Very cold	0	0	0	0	0	0	0	0
9. No information	22**	47	8	23	15**	58	6**	46
Total	47	100	35	100	26	100	13	100
Distance scale								
1. Very distant	0	0	0	0	0	0	0	0
2. Distant	2	4	5	14	2	8	3	23
3. Neither	7	15	9	26	3	12	2	15
4. Close	14	30	10	29	5	19	0	0
5. Very close	1	2	2	6	1	4	1	8
9. No information	23**	49	9	26	15**	58	7**	54
Total	47	100	35	100	26	100	13	100
Haugean scale¹								
1. Very Haugean	1	2	0	0	1	4	0	0
2. Haugean	1	2	1	3	2	8	0	0
3. NonHaugean	4	9	4	11	2	8	2	15
4. AntiHaugean	1	2	2	6	0	0	0	0
8. Don't know	14	30	17	49	5	19	4	31
9. No information	26	55	11	31	16	62	7	54
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

^aProduct-moment correlation coefficient (r) = $-.33$ ¹"Haugean" refers to an evangelical emphasis in Norwegian Lutheranism.

Campus Friendships

Females with acute concerns reported fewer friends than nonacute females. For most students the closest campus friend was not a roommate. Such a divergence was widest for acutely concerned females.

TABLE 4.21--Number of campus friends.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Very many	10	21	11	31	6	23	1	8
2. Many	11	23	12	34	4	15	4	31
3. A few	5	11	4	11	2	8	3	23
4. Very few	3	6	1	3	1	4	0	0
5. None	0	0	0	0	0	0	0	0
9. No information	18*	38	7	20	13**	50	5**	38
Total	47	100	35	100	26	100	38	100

*Significant at .05 level.

**Significant at .01 level.

TABLE 4.22--Roommate as closest campus friend.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
1. Yes	13	28	7	20	3	12	2	15
2. No	15	32	21	60	11	42	6	46
3. No information	19**	40	7	20	12*	46	5**	38
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

Feelings in Relation to Classmates

Feeling comfortable with classmates was reported by all groups. Acutely concerned females felt toward classmates least comfortable, least religious, and least friendly. Deviate groups felt classmates were less helpful and less warm.

TABLE 4.23--Feelings in relation to classmates.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Comfortableness scale								
1. Very comfortable	6	13	13	37	4	15	2	15
2. Comfortable	14	30	14	40	8	31	4	31
3. Neither	4	8	0	0	2	8	1	8
4. Uncomfortable	2	4	1	3	0	0	1	8
5. Very uncomfortable	1	2	0	0	0	0	0	0
9. No information	20**	43	7	20	12	46*	5**	38
Total	47	100	35	100	26	100	13	100
Religiosity scale								
1. Too religious	0	0	0	0	0	0	0	0
2. Religious	13	28	15	43	5	19	3	23
3. Neither	10	21	9	26	5	19	3	23
4. Nonreligious	0	0	3	9	1	4	1	8
5. Antireligious	0	0	0	0	0	0	0	0
9. No information	24**	51	8	23	15	58**	6**	46
Total	47	100	35	100	26	100	13	100

TABLE 4.23--Continued.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Friendliness scale								
1. Very friendly	6	13	6	17	4	15	2	15
2. Friendly	14	30	19	54	5	19	4	31
3. Neither	4	9	3	9	2	8	2	15
4. Unfriendly	2	4	0	0	0	0	0	0
5. Very unfriendly	0	0	0	0	0	0	0	0
9. No information	21**	45	7	20	15	58**	5**	38
Total	47	100	35	100	26	100	13	100
Helpfulness scale								
1. Very helpful	4	9	5	14	1	4	2	15
2. Helpful	12	26	18	51	6	23	3	23
3. Neither	5	11	5	14	4	15	3	23
4. Unhelpful	2	4	0	0	0	0	0	0
5. Very unhelpful	0	0	0	0	0	0	0	0
9. No information	24**	51	7	20	15	58**	5**	38
Total	47	100	35	100	26	100	13	100
Warmth scale								
1. Very cold	1	2	0	0	0	0	0	0
2. Cold	3	6	1	3	0	0	0	0
3. Neither	4	9	7	20	4	15	2	15
4. Warm	14	30	14	40	6	23	5	38
5. Very warm	1	2	4	11	1	4	0	0
9. No information	24**	51	9	26	15	58**	6**	46
Total	47	100	35	100	26	100	13	100

*Significance at .05 level.

**Significant at .01 level.

Feelings in Relation to Closest Campus Friends

Feeling very comfortable and religious with closest campus friends was reported by all groups. Close agreement of all groups was found toward closest campus friends in feeling very friendly and very helpful. Males felt less warmth.

TABLE 4.24--Feelings in relation to closest campus friends.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Comfortableness scale								
1. Very comfortable	16	34	22	63	7	27	6	46
2. Comfortable	9	19	6	17	7	27	2	15
3. Neither	2	4	0	0	0	0	0	0
4. Uncomfortable	0	0	0	0	0	0	0	0
5. Very uncomfortable	0	0	0	0	0	0	0	0
9. No information	20**	43	7	20	12*	46	5**	38
Total	47	100	35	100	26	100	13	100
Religiosity scale								
1. Too religious	0	0	1	3	0	0	0	0
2. Religious	12	26	15	43	6	23	3	23
3. Neither	11	23	8	23	5	19	4	31
4. Nonreligious	0	0	3	9	0	0	0	0
5. Antireligious	0	0	0	0	0	0	0	0
9. No information	24**	51	8	23	15**	58	6**	46
Total	47	100	35	100	26	100	13	100

TABLE 4.24--Continued.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Friendliness scale								
1. Very friendly	9	19	17	49	5	19	6	46
2. Friendly	15	32	10	29	6	23	2	15
3. Neither	0	0	1	3	0	0	0	0
4. Unfriendly	1	3	0	0	0	0	0	0
5. Very unfriendly	0	0	0	0	0	0	0	0
9. No information	22**	47	7	20	15**	58	5**	38
Total	47	100	35	100	26	100	13	100
Helpfulness scale								
1. Very helpful	6	13	11	32	3	12	4	31
2. Helpful	15	32	14	40	7	27	3	23
3. Neither	2	4	3	9	1	4	1	8
4. Unhelpful	1	2	0	0	0	0	0	0
5. Very unhelpful	0	0	0	0	0	0	0	0
9. No information	23**	49	7	20	15**	58	5**	39
Total	47	100	35	100	26	100	13	100
Warmth scale								
1. Very cold	0	0	0	0	0	0	0	0
2. Cold	1	2	0	0	0	0	0	0
3. Neither	1	2	2	6	1	4	0	0
4. Warm	19	40	10	29	8	31	2	15
5. Very warm	2	4	14	40	1	4	5	38
9. No information	24**	51	9	26	16**	62	6**	46
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

Estimate of Classmates' Feelings about Respondent

Classmates were comfortable and religious. Females found their classmates less religious. Dropouts agreed that classmates were very friendly but the acutely concerned reported them only friendly. All groups estimated that respondents were helpful and tended toward warmth.

TABLE 4.25--Estimate of classmates' feelings about himself.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Comfortableness scale								
1. Very comfortable	6	13	11	31	3	12	1	8
2. Comfortable	15	32	14	40	8	31	6	46
3. Neither	1	2	2	6	1	4	1	8
4. Uncomfortable	3	6	1	3	1	4	0	0
5. Very uncomfortable	0	0	0	0	0	0	0	0
9. No information	22**	47	7	20	13*	50	5**	38
Total	47	100	35	100	26	100	13	100
Religiosity scale								
1. Too religious	0	0	0	0	1	4	0	0
2. Religious	14	30	15	43	5	19	3	23
3. Neither	8	17	8	23	4	15	3	23
4. Nonreligious	1	2	3	9	1	4	1	8
5. Antireligious	0	0	0	0	0	0	0	0
9. No information	24**	51	9	26	15**	58	6**	46
Total	47	100	35	100	26	100	13	100

TABLE 4.25--Continued.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Friendliness scale								
1. Very friendly	6	13	5	14	2	8	1	8
2. Friendly	18	38	20	57	7	27	5	38
3. Neither	4	9	2	6	3	12	2	15
4. Unfriendly	0	0	1	3	0	0	0	0
5. Very unfriendly	0	0	0	0	0	0	0	0
9. No information	19*	40	7	20	14**	54	5**	38
Total	47	100	35	100	26	100	13	100
Helpfulness scale								
1. Very helpful	1	2	4	11	0	0	1	8
2. Helpful	16	34	18	51	8	31	5	38
3. Neither	4	9	5	14	2	8	2	15
4. Unhelpful	2	4	0	0	1	4	0	0
5. Very unhelpful	0	0	0	0	0	0	0	0
9. No information	24**	51	8	23	15**	58	5**	38
Total	47	100	35	100	26	100	13	100
Warmth scale								
1. Very cold	0	0	0	0	0	0	0	0
2. Cold	2	4	1	3	0	0	0	0
3. Neither	6	13	3	9	5	19	1	8
4. Warm	13	28	17	49	6	23	6	46
5. Very warm	2	4	5	14	0	0	0	0
9. No information	24**	51	9	26	15**	58	6**	46
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

Estimate of Closest Campus Friends' Feelings about Respondent

In relation to the responding students, closest campus friends were reported to be very comfortable and religious. Females reported less religiosity and less friendliness. All groups agreed that closest campus friends were very friendly, very helpful and warm. The warmth scale was significant at the .05 level for acutely concerned males, correlating .24 with nonacutely concerned males.

TABLE 4.26--Estimate of closest friends' feelings about himself.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Comfortableness scale								
1. Very comfortable	17	36	21	60	7	27	4	31
2. Comfortable	9	19	7	20	7	27	4	31
3. Neither	0	0	0	0	0	0	0	0
4. Uncomfortable	0	0	0	0	0	0	0	0
5. Very uncomfortable	0	0	0	0	0	0	0	0
9. No information	21**	45	7	20	12*	46	5**	38
Total	47	100	35	100	26	100	13	100
Religiosity scale								
1. Too religious	0	0	0	0	0	0	0	0
2. Religious	13	28	14	40	6	23	3	23
3. Neither	9	19	10	29	4	15	4	31
4. Nonreligious	1	2	3	9	1	4	0	0
5. Antireligious	0	0	0	0	0	0	0	0
9. No information	24**	51	8	23	15**	58	6**	46
Total	47	100	35	100	26	100	13	100

TABLE 4.26--Continued.

Response categories	Dropouts				Acute concerns			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Friendliness scale								
1. Very friendly	14	30	16	46	4	15	5	38
2. Friendly	11	23	12	34	7	27	3	23
3. Neither	1	2	0	0	0	0	0	0
4. Unfriendly	0	0	0	0	0	0	0	0
5. Very unfriendly	0	0	0	0	0	0	0	0
9. No information	21**	45	7	20	15**	58	5**	38
Total	47	100	35	100	26	100	13	100
Helpfulness scale								
1. Very helpful	8	17	11	31	2	8	2	15
2. Helpful	13	28	15	43	7	27	5	38
3. Neither	2	4	2	6	2	8	1	8
4. Unhelpful	0	0	0	0	0	0	0	0
5. Very unhelpful	0	0	0	0	0	0	0	0
9. No information	24**	51	7	20	15**	58	5**	38
Total	47	100	35	100	26	100	13	100
Warmth scale								
1. Very cold	0	0	0	0	0	0	0	0
2. Cold	0	0	0	0	0	0	0	0
3. Neither	3	6	2	6	3	11	1	8
4. Warm	15	32	11	31	6*	23 ^a	3	23
5. Very warm	5	11	13	37	1	4	3	23
9. No information	24**	51	9	26	16**	62	6**	46
Total	47	100	35	100	26	100	13	100

*Significant at .05 level.

**Significant at .01 level.

^aProduct-moment correlation coefficient (r) = .24

SAT Tests

SAT standard scores were collapsed into three quartiles for the purpose of chi square analysis. The quartiles reflected the range of standard scores reported by the Registrar's office.

For female dropouts, highest significance ($r = .34$) was reported on the English test followed by the composite score ($r = .32$) and Mathematics score ($r = .30$). For males with acute concerns, highest significance was indicated by the English ($r = .28$) and Natural Science scores ($r = .28$). For females with acute concerns, highest significance was observed on the English ($r = .30$) and Natural Science tests ($r = .25$). While the product-moment correlations were not high, some degree of relationship was indicated.

TABLE 4.27---Analysis of SAT scores for dropouts and acute concerns.

ACT tests	Dropouts						Acute concerns									
	Q1		Q2		Q3		Total		Q1		Q2		Q3		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Male																
English	6	14	27	11	11	25	44	100	5	21	16	67	3	12**	24 ^d	100
Mathematics	7	16	20	45	17	39	44	100	5	21	13	54	6	25	24	100
Social Studies	5	11	26	59	13	30	44	100	4	17	12	50	8	33	24	100
Natural Science	7	16	17	39	20	45	44	100	6	25	11	46	7	29**	24 ^e	100
Composite	5	11	23	52	16	36	44	100	3	12	15	63	6	25	24	100
Female																
English	3	9	22	63	10	29**	35 ^a	100	2	15	9	69	2	15**	13 ^f	100
Mathematics	9	26	22	63	4	11*	35 ^b	100	5	38	6	46	2	15	13	100
Social Studies	3	9	22	63	10	29	35	100	2	15	9	69	2	15	13	100
Natural Science	3	9	21	60	10	29	35	100	3	23	8	62	2	15**	13 ^g	100
Composite	2	6	27	77	6	17*	35 ^c	100	1	8	11	85	1	8	13	100

*Significant at .05 level.

**Significant at .01 level.

^aproduct-moment correlation coefficient (r) = .34^bproduct-moment correlation coefficient (r) = .30^cproduct-moment correlation coefficient (r) = .32^dproduct-moment correlation coefficient (r) = .28^eproduct-moment correlation coefficient (r) = .28^fproduct-moment correlation coefficient (r) = .30^gproduct-moment correlation coefficient (r) = .25

ANALYSIS OF MMPI AND LYRI RESULTS

Factor Analysis

The male sample (N = 83), using a varimax rotation analysis, yielded six factor loadings. Both criterion variables loaded highest on the fifth factor. Seven predictor (independent) variables were selected from among those that correlated highest with the criterion (dependent) variables and lowest with each other for the male multiple regression equations.

The female sample (N = 78) yielded nine factor loadings. Both criterion variables loaded highest on the third factor. Eleven predictor variables were selected for the female multiple regression equations.

TABLE 4.28--Factor analysis of MMPI-LYRI.

<u>Male</u>				<u>Female</u>			
Vari- able	Drop- ^a outs	Vari- able	Acute ^b Concerns	Vari- able	Drop- ^c outs	Vari- able	Acute ^d Concerns
24	.7516	24	.7516	42	.7652	42	.7652
39	.7416	39	.7416	9	-.7784	9	-.7784
27	.6644	27	.6644	31	-.8588	31	-.8588
26	.7146	26	.7146	35	-.7098	35	-.7098
36	.6556	36	.6556	25	-.7812	25	-.7812
30	.6317	30	.6317	47	.7745	47	.7745
23	.4378	23	.4378	19	.7459	19	.7459
				45	.8438	45	.8438
				15	-.7281	15	-.7281
				34	.5619	34	.5619
				11	-.4977	11	-.4977
^a 59	.4032	^b 51	.6019	^c 50	.5493	^d 51	.4051

The most useful scales were ranked and identified in Table 4.29. When all selected variables were combined it became apparent that more

LYRI scales were useful than MMPI. The ratio for males was six to two. For females the difference appeared inconsequential, a ratio of six to five. The most discriminating variables for male dropouts were LYRI scales. For females with acute concerns the most discriminating scales were from the MMPI.

TABLE 4.29--Most useful R scales (ranked by value of regression coefficient).

<u>Dropouts</u>		<u>Acute concerns</u>	
Vari- able	Scale name	Vari- able	Scale name
<u>Male</u>			
23	Self-realization	23	Self-realization
24	Achievement	35 ^a	Hysteria
26	Happiness	27	Justification
27	Justification	39 ^a	Psychasthenia
30	Christian concepts	24	Achievement
36 ^a	Psychopathic deviation	26	Happiness
39 ^a	Psychasthenia	16	Personal consistency
<u>Female</u>			
25	Service	47 ^a	Prejudice
11	Academic problems	34 ^a	Depression
42 ^a	Social introversion	35 ^a	Hysteria
9	Personal assurance	42 ^a	Social introversion
34 ^a	Depression	31 ^a	Forgiveness
19	Moral problems	9	Personal assurance
35 ^a	Hysteria	11	Academic problems
47 ^a	Prejudice	25	Service
15	Judgment of peers	15	Judgment of peers
45 ^a	Dominance	45 ^a	Dominance
31	Forgiveness	19	Moral problems

^aMMPI scales; unmarked variables are LYRI scales.

Multiple Regression

The regression equations for dropouts and acute concerns of both sexes were reported in Table 4.30. The randomly dichotomized samples of 41 males had 33 degrees of freedom. The samples of 39 females had 27 degrees of freedom.

TABLE 4.30--Multiple regression equations selected for cross-validation.

Sex	R	D.F.	Variable	<u>Dropouts</u>			
				Reg. coef.	Beta wt.	F	Partial cor. coef.
Male	.4620**	33	a	-.0749			
			24	.0113	.1970	.0058	.1491
			39	.0045	.0988	.7500	.0942
			27	.0016	.0394	.2956	.0360
			26	-.0060	-.1127	.0429	-.0834
			36	.0029	.0547	.2312	.0505
			30	.0037	.0924	.0844	.0893
			23	.0156	.3712	.2649	.3558
Female	.4655**	27	a	1.8715			
			42	.0105	.2199	.8215	.1718
			9	-.0070	-.1507	.3408	-.1117
			31	.0009	.0163	.0066	.0157
			35	-.0046	-.0730	.0929	-.0586
			25	.0122	.3189	2.3688	.2840
			47	-.0039	-.0628	.0616	-.0477
			19	-.0063	-.1061	.1625	-.0773
			45	-.0014	-.0276	.0105	-.0198
			15	-.0016	-.0354	.0283	-.0324
			34	.0086	.1409	.2766	.1007
			11	-.0127	-.2672	1.5152	-.2305

** .01 level of confidence.

TABLE 4.30--Continued.

<u>Acute concerns</u>							
Sex	R	D.F.	Variable	Reg. coef.	Beta wt.	F	Partial cor. coef.
Male	.4187*	33	a	2.4237			
			24	-.0020	-.0461	.0357	-.0329
			39	-.0020	-.0564	.1054	-.0564
			16	-.0002	-.0067	.0011	-.0059
			27	-.0040	-.1342	.6532	-.1393
			26	-.0011	-.0274	.0119	-.0190
			35	-.0104	-.2053	1.3109	-.1955
			23	.0104	.3322	2.8420	.2816
Female	.5549**	27	a	.2351			
			42	.0077	.2332	1.0463	.1931
			9	.0057	.1763	.5283	.1385
			31	.0065	.1769	.8899	.1786
			35	.0139	.3171	1.9818	.2615
			25	.0020	.0737	.1431	.0726
			47	.0187	.4363	3.3621	.3328
			19	.0010	.0250	.0102	.0194
			45	.0015	.0407	.0260	.0310
			15	-.0012	-.0377	.0365	-.0367
			34	-.0167	-.3944	2.4544	-.2887
			11	-.0044	-.1334	.4274	-.1248

*.05 level of confidence.

**.01 level of confidence.

Hypotheses Testing

Hypothesis I: Selected MMPI and LYRI scales will predict Waldorf College freshmen who withdraw after the freshman year.

The test of the hypothesis ($H_0 : R = 0$), as reported in Table 4.30, resulted in rejection of the null and acceptance of the alternative ($H_A : R \neq 0$).

Hypothesis II: Selected MMPI and LYRI scales will predict Waldorf College freshmen who have acute intrapersonal concerns, as measured by faculty judgment.

The test of the hypothesis ($H_0 : R = 0$), as reported in Table 4.30, resulted in rejection of the null and acceptance of the alternative ($H_A : R \neq 0$).

It was concluded that the multiple regression coefficients would not have occurred by chance.

Cross-Validation

Table 4.31 will indicate the mean standard deviation, and correlation of the real Y and predicted Y for each group. Female dropouts evidence the highest correlation, .31. Since only about 9% of the common variance is included in a correlation of .31, predictions based on such a low correlation could be expected to be frequently in error.

The results attested the statements of Walker and Lev, "A regression equation gives a satisfactory estimation for the group on which it was obtained if there is a high correlation between the observed and estimated scores.... It may give very close estimations for the group on which it was obtained and be much less effective with a new group," (Walker and Lev, 1953, p. 321). Guilford has explained, "In a new sample from the same population, the weights would be likely to yield predictive values that correlate with the criterion less than the multiple R in the sample from which the weights were obtained," (Guilford, 1954, p. 405).

When the multiple regression equation (obtained from the first half of the sample) was applied to the second half, the predicted Y identified correctly 22 of 27 dropouts (81%) and 5 of 14 students (36%) with acute concerns. Incorrectly identified as dropouts were 5 of 27 students (19%) and as acute concerns 9 of 14 students (64%). Table 4.32 will report the analysis in detail.

TABLE 4.31--Mean, standard deviation and correlation of the real Y and the predicted Y for randomly dichotomized samples.

Sample I

	Male (N = 41)		Female (N = 39)	
	Mean	Std. dev.	Mean	Std. dev.
Dropouts				
Y	1.6585	.4801	1.7436	.4427
$\hat{Y}$	1.6585	.2218	1.7436	.2059
R		.46		.47
Acute concerns				
Y	1.8537	.3578	1.8974	.3074
$\hat{Y}$	1.8537	.1498	1.8974	.1706
R		.42		.55

Sample II

Dropouts				
Y	1.6098	.4939	1.7180	.4559
$\hat{Y}$	1.6550	.2131	1.7013	.2636
R		.19		.31
Acute concerns				
Y	1.7317	.4486	1.8974	.3074
$\hat{Y}$	1.8370	.1471	1.9532	.1818
R		.04		-.02

TABLE 4.32--Analysis of correct and incorrect statistical identification of dropouts and acute concerns.

	Male				Female			
	Dropouts		Nondropouts		Dropouts		Nondropouts	
	N	%	N	%	N	%	N	%
Y	16	100	25	100	11	100	30	100
$\bar{Y}$	12	75	10	40	10	91	14	47
-Y	4	25	15	60	1	9	16	53
	<u>Acute concerns</u>		<u>Nonacute concerns</u>		<u>Acute concerns</u>		<u>Nonacute concerns</u>	
Y	10	100	31	100	4	100	37	100
$\bar{Y}$	4	40	24	77	1	25	34	92
-Y	6	60	7	33	3	75	3	8

SCOPE Procedure

An alternative to the addition of variables based on factor analytic loadings was systematic subtraction of variables from a global regression equation that included all 49 selected variables. Because the matrix approached singularity with only 12 of the 49 variables accounted for in the CORE 4 Computer Program, an experimental multiple regression program (SCOPE R) was applied. Systematic reduction of variables will be reported in Table 4.33. The close approximation of number of subjects and number of variables made cross-validation of the resulting extended equations unfeasible. While of statistical interest, the cumbersome equations were not considered economical.

TABLE 4.33--Multiple regression coefficients derived by SCOPE R computer program.

		<u>Dropouts</u>				
Number of variables used	Variable number			R ²	R	
Male						
49	1	...		49	.5829	.7635
39	1,2...16,18,21...24,26,28...31, 33,34,36,37,39,41...49				.5744	.7579
34*	1,3...7,9...14,16,18,21...24,26, 28...31,33,34,36,37,39,41,43,45, 47...49				.5629	.7502
32	1	...	32 (LYRI only)		.3895	.6241
30	1,3...7,9...14,16,18,21,24,26, 29...31,33,37,39,41,43,45,47...49				.5276	.7264
25	1,3...7,9...11,13,14,16,18,21,24, 26,29,31,37,39,41,43,45,47,48				.5224	.7228
21	1,3,7,8,10,11,12,15				.1891	.4348
17	(MMPI only)	33	...	49	.0991	.3148
Female						
49**	1	...		49	.7651	.8747
38**	1,2,3,7,8,10...13,15...19,21...25, 28...37,39...41,43...45,47...49				.6807	.8250
32**	1	...	32 (LYRI only)		.5866	.7659
27**	1...3,7,8,10...12,15...17,22,24,25, 29...34,36,39...41,44,47				.6515	.8072
14	(MMPI only)	33	...	49	.3231	.5684

*Overall F significant at .05 level.

**Overall F significant at .01 level.

TABLE 4.33--Continued.

		<u>Acute concerns</u>				
Number of variables used	Variable number			R ²	R	
Male						
49	1	...	49	.6344	.7665	
38*	1...16,19...25,27...33,37,39, 41,42,43,46,47,49			.6001	.7747	
32*	1	...	32 (LYRI only)	.5069	.7120	
23**	1,2,7...9,11,14,19...23,25,27,28, 30,32,37,39,41,42,47,49			.5633	.7505	
20	1,2,7...9,11,14,19...23,25,28,30, 32,37,41,42,47			.5512	.7424	
17	(MMFY only)	33	...	49	.1853	.4304
16	1,2,7,8,11,14,19,21,23,25,30, 32,37,41,42,47			.5181	.7198	
Female						
49	1	...	49	.7220	.8497	
32	1	...	32 (LYRI only)	.5018	.7084	
26**	1...3,11,12,14...16,18...22,27,28, 30,35,36,38,39,41,44...46,48,49			.5401	.7349	
14	(MMPI only)	33	...	49	.2026	.4502

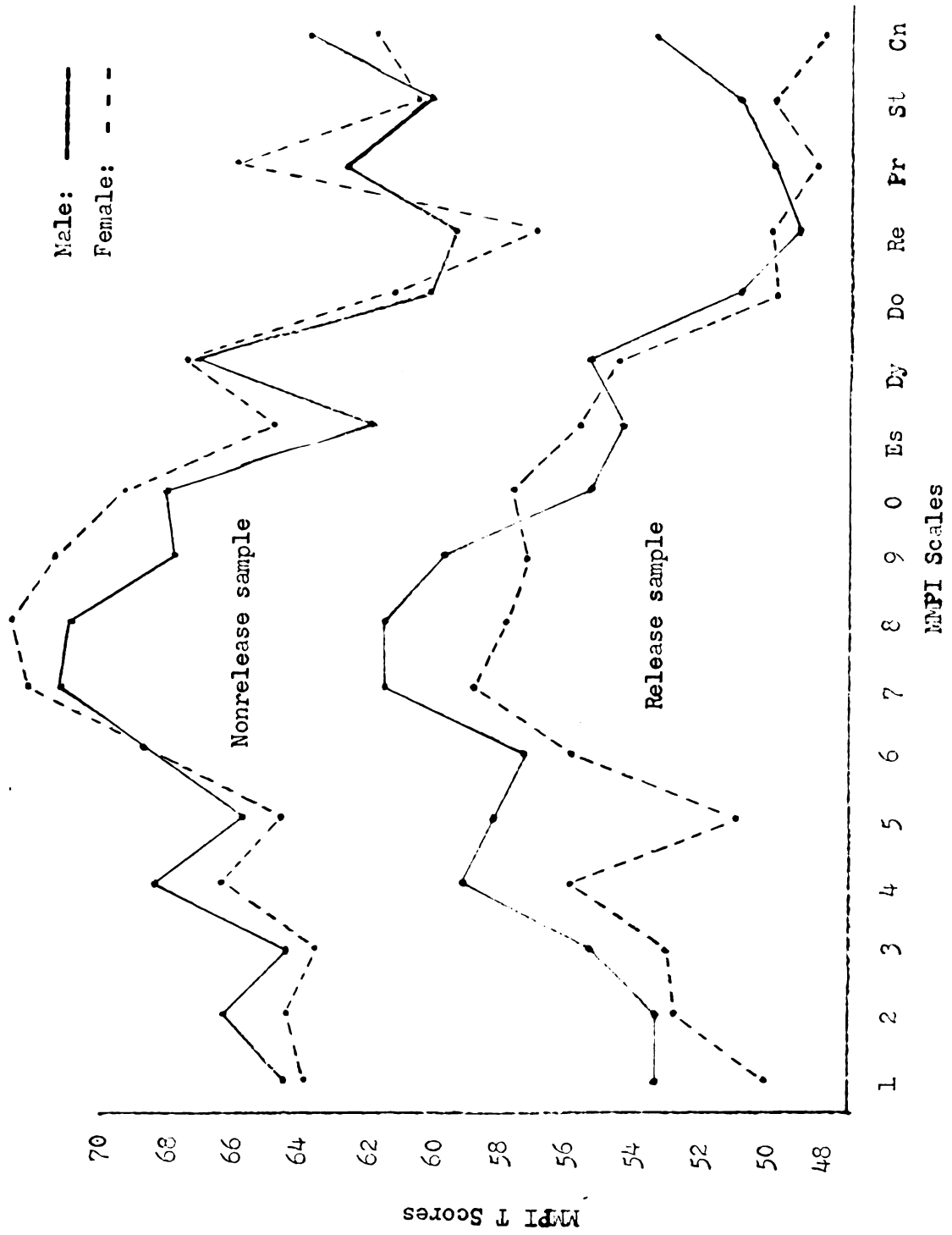
*Overall F significant at .05 level.

**Overall F significant at .01 level.

LYRI Release and Nonrelease Samples Compared on the MMPI

Application was made of the "t" test of the mean difference between students who released LYRI scores and the students who did not sign releases. For each of the 17 MMPI scales reported in Table 4.34 "t" tests indicated differences at the .01 level of significance. Students who did not release LYRI results consistently scored higher on the MMPI. The degree that height on the MMPI scales indicates a tendency toward maladjustment may be related to anxiety about releasing highly personal data. The testing of religious beliefs may have been felt by some as to be an area to be guarded from empirical investigation. Additional research with the total nonrelease sample included may have heightened the results of the current study inasmuch as such deviations from the mean could counteract the central tendency of multiple regression procedures. The data presented graphically in Figure 1 will be documented in Appendix G.

Figure 1 --Difference between mean of LYRI release and nonrelease samples.



Mean Differences between Criterion Groups and Normal Groups

The mean difference on the MMPI between dropout, acute concerns, and nondropout-nonacute concern students will be reported in graphic form in Figure 2. The profiles followed generally similar patterns. Marked similarity was observed on scale 6 (Paranoia) and St. (Social status). Most divergence was observed on scales Re(Social Responsibility) and Cn (Control).

Figure 2 --Mean differences between nondeviate, dropout, and acute concerns.

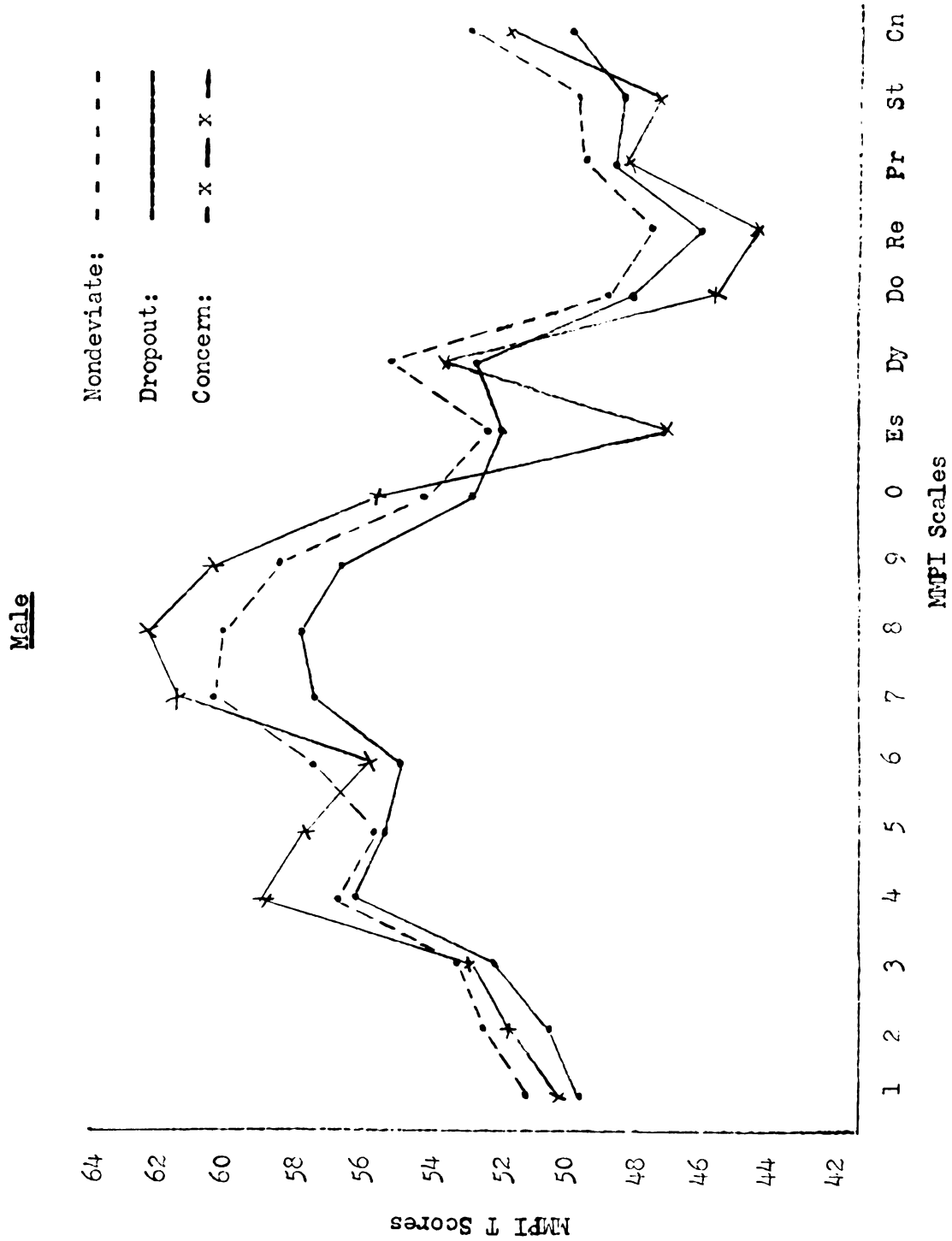
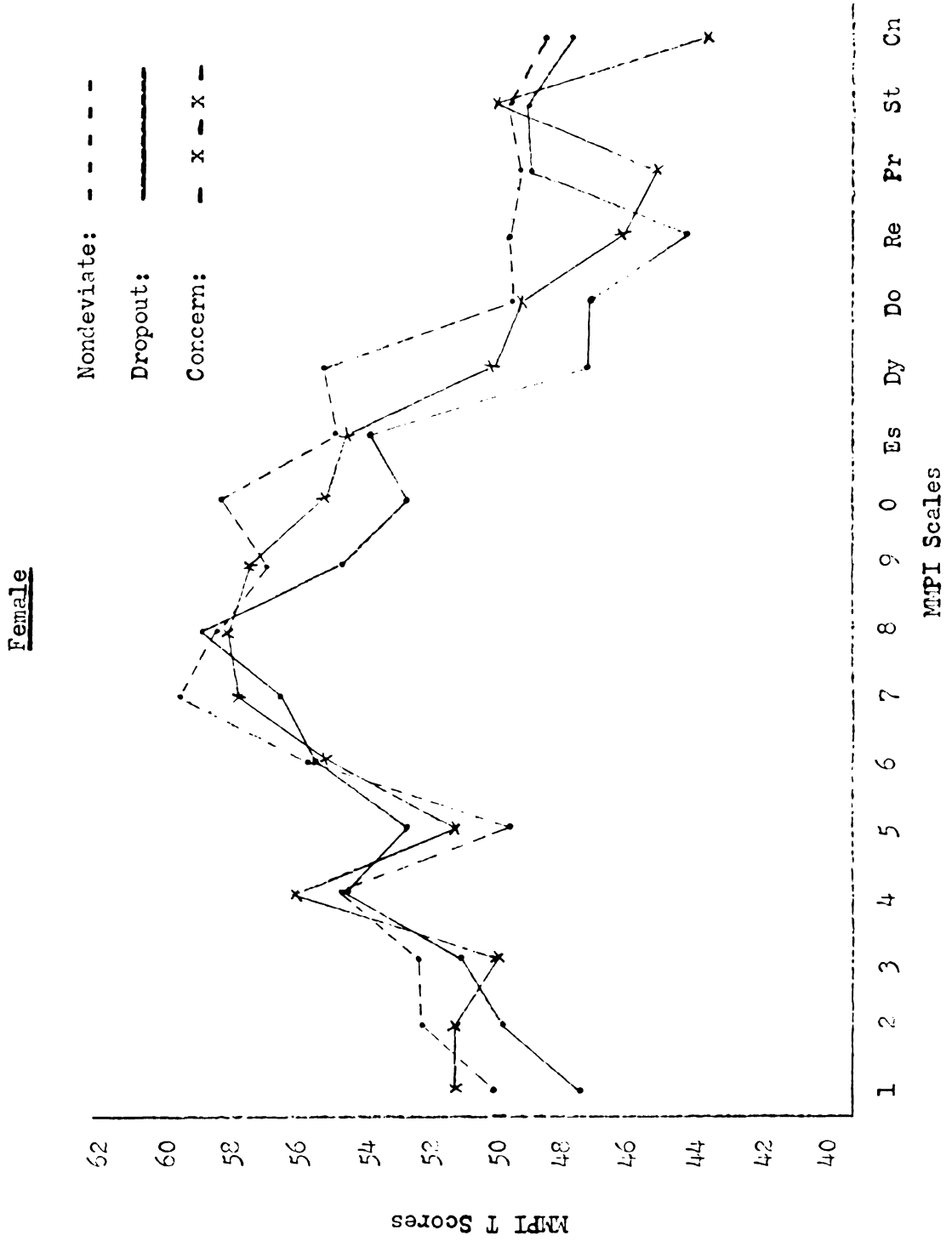


Figure 2 --Continued.



SUMMARY OF THE ANALYSIS OF THE DATA

The analysis of the data was detailed in this chapter. The subjects were identified. The results from the instruments used were reported and interpreted. The hypotheses were tested and all statistical procedures explained.

CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

SUMMARY OF THE STUDY

The purposes of the study were stated in two dimensions:

1. To investigate factors that relate to Waldorf Junior College freshmen who withdraw after the freshman year and who have acute intrapersonal concerns.
2. To test two major hypotheses:
 - a. Selected scales from the Minnesota Multiphasic Personality Inventory can be used to predict Waldorf College freshmen who withdraw after the freshman year and who have acute intrapersonal concerns, as measured by faculty judgment.

Four instruments were used to gather data derived from the 1963-1964 freshman class at Waldorf College, Forest City, Iowa. The first instrument was a questionnaire designed to elicit demographic and attitudinal data. The second was the SAT. The third and fourth instruments were the MMPI and LYRI.

The design of the study was divided into two dimensions:

1. Analysis of the questionnaire and ACT by the use of the chi square statistic.
2. Analysis of the MMPI and LYRI by the use of factor analysis, multiple regression and cross-validation.

CONCLUSIONS

Demographic and Attitudinal Data

Since the chi square statistic is mainly a measure of independence between nominal variables, it can not be assumed that a cause and effect relationship was indicated when certain variables did not exceed the .05 and/or .01 level significance. The presence of a relationship not due to chance was established but not the magnitude or direction of the relationship. The product-moment correlation coefficient provided additional information relative to the magnitude of significant relationships. The correlations that appeared significant at the .05 level or higher for both the X^2 and r include the following:

1. The No Information response category was most often responsible for contributing to the chi square cell which accounted for the pre-selected level of significance. Perhaps the limitations of a mailed questionnaire, combined with the nature of the respondents of interest (dropouts and acutely concerned students), tended to limit responses from approximately one-half of the males and one-third of the females. The questionnaire did not evidence sufficient discrimination when attitudes with their associated intensity were measured in relation to selected campus subgroups.

2. The primary period of withdrawal for both dropouts and acute concerns appeared to be after the first full year in college. Waldorf College tended to retain such students during the freshman year.

3. Female dropouts and males with acute concerns have reported most precollege academic mobility. Clinical experience indicates that

one attraction of a small, residential junior college is its reputation for having a friendly family atmosphere. It appeared that some students who have moved much during their elementary and secondary school years have special needs.

4. Students of both sexes and both groups of interest seemed to want to take full responsibility for the decision to leave Waldorf College. Male dropouts accepted responsibility for matriculation at Waldorf College, as did the other groups though the latter was without evidence of statistical significance.

5. The person most influential in encouraging male dropouts and acute concerns to attend Waldorf College has been the parish pastor. For females, parents were the primary influence. Clinical experience tends to confirm the result. Earnest pastors and anxious parents seem to look to Waldorf College to assist them in meeting the needs of their students. Possibly parents and pastors were aware of special needs or the potential for withdrawal of their students.

6. The questionnaire did not discriminate adequately the perceptions of parents on any of the six scales constructed to measure the students' estimate of their parents. Perhaps the complexities of parent-child relationships preclude measurement by even more sophisticated contemporary methods.

7. Males with acute concerns apparently have perceived their home congregations as being of a more formal than informal type. Perhaps such students perceive formality in worship to be related to their needs. The kind of relationship is not reported by this investigation.

8. Feelings toward or from fellow students were not measured with adequate discrimination by the questionnaire prepared for this study. The single exception to the previous conclusion was the estimate of the closest friends' feelings about the males with acute concerns. A tendency toward warmth was indicated. Perhaps the males with acute concerns not only found friendship they needed at Waldorf College, but perceived such friendship more positively than did the other groups of interests to the study.

ACT Relationships

The measurement of college aptitude was not of primary interest to the investigation. Since other admissions data did not evidence sufficient precision for the purposes of the study, only the ACT was reported. The English test appeared most frequently to be useful for the purpose of the study. The Natural Science test ranked second. The Social Science test did not appear to be useful.

MMPI - LYRI

Observation of the contribution of the two most useful variables in each multiple regression equation, based on the partial correlation coefficients, permitted the following conclusions:

1. Male Dropouts: Variable 23, LYRI Self-realization (-r)
Variable 24, LYRI Achievement (-r)
2. Female Dropouts: Variable 25, LYRI Service (-r)
Variable 11, LYRI Academic problems
3. Male Acute Concerns: Variable 23, LYRI Self-realization (-r)
Variable 35, MMPI Hypochondriasis
4. Female Acute Concerns: Variable 47, MMPI Prejudice (-r)
Variable 34, MMPI Depression

It appeared that from among the two most useful variables in each equation the LYRI contributed five variables and the MMPI three variables. When all of the variables in each of the four equations were considered, approximately two-thirds were contributed by the LYRI. Perhaps the LYRI could be expected to measure more precisely a predominantly Lutheran population than could the MMPI inasmuch as the LYRI was developed for this purpose and was based on Lutheran normative samples and the MMPI was developed on a clinical, not a "normal", population.

The testing of the hypotheses generated for this study indicated that, in fact, the multiple regression coefficient was not equal to zero. There was a difference not due to chance between the deviate groups of interest to this study and their more normal counterparts.

The multiple regression coefficient derived from study of the first half of each dichotomized group was highest for female acute concerns ($R = .55$) and lowest for male acute concerns ($R = .42$). Male dropouts ($R = .46$) closely approximated female dropouts ($R = .47$).

When the multiple regression equation derived from the first half of each group was applied to the second half of the respective group, the multiple R dropped in each case. Researchers have termed such a phenomena statistical shrinkage, (Guilford, 1954, p. 405). Because of the shrinkage in this experiment the possibilities for accurate prediction may be minimal. Correctly identified were 81% of the dropouts and 36% of the students with acute concerns. It can not be concluded that similar results would be obtained with other samples.

LYRI Non-release Sample

Students who elected not to release LYRI scores were consistently higher on each of the 17 MMPI scales selected for this study. The departure from the mean may indicate tendencies toward pathology if the group is considered as a whole. It should not be concluded that a given student who did not sign a release statement was less well adjusted than the student who did sign.

Differences between Criterion Groups and Nondropouts-nonacute concerns

While the profile configuration for criterion groups generally followed that of the "normal" comparison groups, most divergence was reported on the Social Responsibility (Re) and Control (Cn) scales of the MMPI. It appeared that clinical experience confirmed the possibility of dissimilarities at the points previously mentioned.

General Conclusions

Three general conclusions were formulated:

1. Responses from females were generally more frequent than from males. The female sample size was slightly less than the male but the ratio of responses, with some exceptions, indicated relatively more returns from females. Perhaps females found it easier to conform to academic procedures than did the males. Possibly male students were more resistant to revealing inner attitudes.

2. Responses from dropouts were generally larger than from the students judged to have acute concerns. It was noted that most Waldorf dropouts transferred to another college. They seemed to be interested in academics but not at Waldorf College. The acutely concerned students may have felt somewhat defensive about themselves. The nature of their

concerns may have mitigated against responding to a study of areas which may be painful. In some cases the study itself may have contributed to additional hurt. On the other hand, some students with acute concerns may have been encouraged that others were interested in their concerns.

3. Of the dropouts who had acute concerns the faculty correctly identified 61%. If it can be assumed that students with acute concerns tend to become dropouts, faculty judgment of students with acute concerns more correctly than incorrectly identified potential dropouts. The ratio was six successful identifications to four unsuccessful identifications. It may be possible to conclude that, in general, the Waldorf faculty was sensitive to students who evidenced acute concerns. It is noted that transfers are included as Waldorf dropouts. Thus comparison with national dropout studies may need qualification.

IMPLICATIONS

Implication means here the involvement or close connection of the conclusions with future possibilities. Eight implications will be drawn from the results of this study:

1. Perhaps personal interviews would serve better than a mailed questionnaire to elicit more discriminating responses.

2. Since it is the function of a college to serve the students it admits, accepting responsibility for meeting student needs wherever need exists, it seemed that Waldorf College approximated its goals in the area of interest to this study. The college, knowing that students with dropout potential tend to remain for the full college year, may wish to concentrate especially on the personnel needs of the freshmen.

3. Waldorf College personnel workers may wish to observe early in the school year which students have experienced high pre-college academic mobility. How to identify precisely and then meet such needs demands further study.

4. The tendency to want to take full responsibility for withdrawal from Waldorf College may indicate a healthy maturation. In some cases it may also indicate a hesitation to state a projection of responsibility for various defensive reasons.

5. The relatively high degree of involvement of the parish pastor with potential dropouts may tend to encourage close professional relationships between personnel workers and pastors. The relatively high degree of involvement of parents with acutely concerned students may tend to encourage close contacts between personnel workers and parents. Possibly the increasing practice of parent conferences in ungraded elementary schools could be attempted in ways that would not minimize the emerging adult status of the college freshman.

6. The ACT English test may assist Waldorf personnel workers in estimating the propensity for withdrawal and acute concerns of female students, especially if the ACT is the only standardized instrument available. Caution would need to be exerted in using such limited information for a purpose for which it was not originally intended.

7. If economical data processing were available, the use of an extended multiple regression equation might assist personnel workers in the identification of students with potential for withdrawal and with acute intrapersonal concerns. Workers with time and energy limitations may find such a procedure valuable in permitting statistically

supported decisions. Some students could be offered special assistance in meeting their nonacademic, more affective needs.

8. It appeared that females were more responsive to the research procedures than males. Perhaps some females tend to conform too much. Perhaps the nonresponding students should rate a sincere salute for resisting. It seems easier for some traditional educators to appreciate students who conform to existing patterns. Creative nonconformity tends to be suspect at times.

Problems for Further Study

Along with the further research suggestions previously implied, the following five are suggested:

1. Some students may be encouraged by a college to remain when, for the students' best welfare, they should better become dropouts. Not every student is served well by a given college. Not every high school graduate can profit by a college education. As a guarantor of social acceptability, economic success, and human dignity the value of a college education appears overestimated. The student who withdraws usually does not receive the same continuing attention from the college as the student who returns though both are considered alumni for purposes of public relations. Perhaps ways can be found to counteract the notion that withdrawal is equated with failure. The cause and effect relationship is often complex.

2. Some educators feel that the adjustment of freshmen from high school to college is severe enough to warrant placing the very best teachers in freshman classrooms. Such teachers might be sensitive to

the teaching methodology contemporary students find comfortable and creative. Little gain is experienced from lamenting the inadequate preparation of the students a college receives. Better would be study of ways to find out who the students are and what motives and study skills they possess. Insight into the student's frame of reference is required. He needs to be understood, not merely classified.

3. A school needs to continually redefine its purposes. The catalog statements of purpose need to be vivified and operationalized each year. If meeting individual differences is high on the scale of stated purposes, adequate budget would be expected to help provide individual instruction in pursuit of the basic academic goals of the college. It is the view of this researcher that the goal of individual instruction (education in the most personal sense) can be approximated by an effective student personnel program that includes competent, available personal counseling. The literature previously cited has suggested that junior colleges could serve uniquely in the complex of educational opportunities in America if they would budget more adequately for their total personnel programs. Thus the problem being stated here is not so much one of research methodology but of over-arching philosophy of education and curriculum understandings. The best of theories finally require finances that will permit workers to act on the ideas.

4. The current study could be replicated to confirm or deny its results.

5. Five related studies might enrich the results of this study:

a. The college maladjustment scale (Mt) developed by Kleinmuntz for use with the MMPI might discriminate more accurately than any of the scales selected for use in this study. (Kleinmuntz, 1961).

b. The college achiever and nonachiever scale (Ac) developed by Altus for the MMPI might discriminate more accurately than any of the scales selected for use in this study, (Altus, 1948).

c. The study of institutional or environmental press might indicate factors which contribute to student emotionality, factors for which the college and not the student is responsible. Perhaps such an investigation could be incorporated in periodic institutional self-studies.

d. The influence of peers seems to be more significant than this study has been able to determine. Since self-image appears related to social acceptance, the dimension of peer relationships could be profitable. It is possible that some students withdraw because they have obtained the academic or personal satisfactions they sought. Respect for personhood tends to obviate the imposition of institutional limitations.

e. Cross-sectional multi-group and sub-group comparisons could be made. For example, commuters compared with noncommuters, family composition, and high school grade average might be used. MMPI and LYRI profile configurations based on various sub-group samples could be compared.

SUMMARY OF THE INVESTIGATION

This investigation was interested in the description and possible early identification of Waldorf Junior College freshmen who had a potential for withdrawal and who were judged by the faculty to have acute intrapersonal concerns.

The four instruments used were described and statistical procedures detailed. The results of the study have been reported and conclusions stated. Possibilities for further research have been suggested.

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APPENDIX A

DROPOUT DATA

DROPCUT DATA

Reasons for Withdrawal (Questionnaire Item 76)

full-time employment	4	disinterest	2
health	2	dissatisfied	16
moved residence	1	financial	8
transferred schools	22	marriage	3
academic (grades)	7	educ. goals completed	2

Educational Locale of Waldorf Dropouts (Item 75)

Allen Memorial School of Nursing	Mayville State Col.
American Institute of Business	Minneapolis School of Art
Augsburg Col.	Minn., U. of
Augustana Col.	Moorhead State Col.
Baylor U.	Muskegon Jr. Col.
Capital U.	Nettleton Co. (Business)
Colorado State Col.	Pacific Luth. U.
Dana Col.	Pharmacy School (unidentified)
Ellsworth Jr. Col.	St. Cloud State Col.
Iowa Luth. Hosp. School of	Texas Luth. Col.
Nursing	Valparaiso U.
Iowa State U.	Wartburg Col.
Luther Col.	Wis. State U.
Mankato State Teachers Col.	

Summary: Liberal arts colleges: 20
 Trade schools: 6

Monthly Income Reported by Dropouts:

Range: \$100 - \$800 (child care - road construction)
 Mean: \$305
 Mode: \$250

APPENDIX B

DEMOGRAPHIC AND SOCIO-ECONOMIC DATA

1. Geographical Distribution
2. Denomination
3. Rank-in-Class
4. Size of Class
5. ACT Scores
6. Educational Background of Parents
7. Occupational Background of Parents

Geographical Distribution

Iowa	110	40%	Montana	2	-1%
Minnesota	70	24	Texas	1	-1
Wisconsin	18	7	Michigan	1	-1
Illinois	10	4	Colorado	1	-1
Ohio	10	4	Kansas	1	-1
South Dakota	7	3	New Jersey	1	-1
Hawaii	5	2	Nebraska	1	-1
California	4	2	Ethiopia	1	-1
North Dakota	4	2	Philippines	1	-1
New York	3	1	Norway	1	-1
Washington	3	1	Tanganyika	1	-1

Denomination

	<u>Number</u>	<u>Percent of Total</u>
American Lutheran Church	210	82
Other Lutheran	18	7
Methodist	12	3
Baptist	3	1
Congregational	3	1
Evangelical Free	2	-1
Presbyterian	2	-1
Reformed	2	-1
Christian	1	-1
Coptic	1	-1
Roman Catholic	1	-1
Not given	1	-1

Rank-in-Class

<u>Percentile</u>	<u>Number</u>	<u>Percent of Total</u>
91 - 100	22	9
81 - 90	19	8
71 - 80	28	11
61 - 70	15	6
51 - 60	25	10
41 - 50	14	6
31 - 40	23	9
21 - 30	36	15
11 - 20	25	10
0 - 10	11	4
Unknown	27	12

Size of Class

	<u>Number</u>	<u>Percent of Total</u>
Less than 25	16	6
26 - 50	55	22
51 - 75	35	14
76 - 100	50	19
101 - 150	19	7
151 - 200	5	2
201 - 300	17	7
Over 301	34	14
No record	24	9

ACT Scores

Frequency distribution of entering freshmen taking the ACT,
using standard composite scores and national 12th grade percentiles.

<u>Standard Score</u>	<u>Number of Students</u>	<u>National 12th Grade Percentile</u>
31	1	99.9
30	2	99.5
29	5	99.0
28	3	98.3
27	3	97.0
26	5	96.0
25	20	95.0
24	17	92.0
23	12	89.0
22	8	85.0
21	16	80.0
20	13	75.0
19	21	70.0
18	16	64.0
17	16	57.0
16	10	49.0
15	13	42.0
14	9	35.0
13	17	28.0
12	13	22.0
11	5	17.0
10	7	12.0
9	1	8.0

Educational Background of Parents

<u>Education</u>	<u>Fathers</u>	<u>Mothers</u>
Less than 8th grade	7	2
Grades 8 - 11	84	51
H.S. Graduate	78	105
Some College	38	59
College Graduate	12	17
Post College	26	7

Occupational Background of Parents

<u>General Category</u>	<u>Number</u>
Professional	28
Technical	6
Managerial	16
Clerical	3
Sales	32
Service	16
Agricultural	109
Mechanical	11
Manual	23
Military	2
Retired	8

APPENDIX C

COMPARATIVE MMPI DATA:

from

MICHIGAN STATE UNIVERSITY FRESHMEN

and

WALDORF JUNIOR COLLEGE FRESHMEN

A COMPARISON OF
MSU FRESHMEN (1964 RANDOM SAMPLE)
AND WALDORF FRESHMEN (1963 CLASS)
ON SELECTED MMPI SCALES

MMPI scale	Male				Female			
	MSU		Waldorf		MSU		Waldorf	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Hs	54	3.71	52	8.81	52	3.18	49	6.88
D	56	4.87	52	11.34	53	4.98	51	7.43
Hy	58	4.71	54	7.07	56	4.07	52	6.89
Pd	57	4.25	58	9.36	57	4.10	54	8.25
Mf	61	5.06	57	9.17	49	4.53	49	8.97
Pa	56	2.94	56	7.75	56	2.95	55	7.88
Pt	60	5.34	61	10.99	56	4.64	58	7.23
Sc	61	6.32	60	11.74	58	5.31	56	7.25
Ma	58	4.09	59	11.40	58	3.94	56	9.56
Es	48	5.59	54	9.75	46	5.14	57	8.92
	N = 260		N = 101		N = 205		N = 88	

APPENDIX D
QUESTIONNAIRE

MICHIGAN STATE UNIVERSITY East Lansing

College of Education 262

November 11, 1964

TO: Waldorf College Freshmen, Class of 1963-64

The development Program at Waldorf College comes alive in our awareness as we view the erection of several needed buildings. A similar sense of achievement can be ours as we assist in the study of student feelings as you experienced them last school year.

You can help serve the freshmen who follow you at Waldorf by completion of the enclosed questionnaire. It takes about five minutes.

Some items may seem quite personal or irrelevant. Be assured that I will keep your responses confidential. Your careful completion of each item will prove valuable in the preparation of my doctoral dissertation.

A self-addressed, stamped envelope is enclosed to invite an immediate reply. May I count on your assistance?

Sincerely,

Dar Roa

Directions:

1. Circle the one response for each item that most applied to you WHEN YOU WERE A FRESHMAN at Waldorf College.
2. Responses can be clarified and expanded on the margins, if you desire. Please be brief, precise, and complete.
3. Please do not discuss your responses with any one before completing the whole form.
4. This questionnaire does not require your name.
5. The numbering of items corresponds to computer use.
6. Please return immediately. Thank you sincerely!

Mail to: Dar Roa (The Rev.)
810 D Cherry Lane
Michigan State University
East Lansing, Michigan 48822

CIRCLE YOUR CHOICE

1 2 3

4 My residence before my freshman year at Waldorf was:

1 - 99	100 - 999	1000 - 2499	2500 - 24,999	25,000 up
Roral	Village	Town	City	Large city

5 My family's residence during my freshman year at Waldorf changed:

Not at all Once Twice Three times Four or more times

6 The number of different schools I attended before Waldorf (all grades):

One Two Three Four Five or more

7 I place my family in the following social class:

Lower Lower middle Middle Upper middle Upper

8 My family's income, in relation to the family income of my friends, was:

Much higher Higher Similar Lower Much lower

9 The decision to enter Waldorf College was primarily:

My own My father's My mother's Both parents Mutual

10 As my choice of a college, Waldorf rated:

First Second Third Fourth Fifth or below

11 I was influenced to consider Waldorf primarily through:

Parent(s) Guidance counselor Waldorf admissions counselor

Pastor(s) Waldorf alumnus Another college's referral

Relative(s) Waldorf teacher Friend

Teacher(s) Waldorf administrator

22 My general health during my freshman year at Waldorf was:

Very good Fair Poor (Please specify: _____)

23 My ability to read at the beginning of my freshman year was:

Very good Good Fair Poor

24 Developmental (remedial) study during my freshman year included:

English Math Reading None Engl.+Math Engl.+Reading

25 My class attendance during my freshman year at Waldorf was:

Very regular	Regular	Off and on	Irregular	Seldom
90%	75%	50%	25%	15%

26 My chapel attendance during my freshman year at Waldorf was:

Very regular	Regular	Off and on	Irregular	Seldom
90%	75%	50%	25%	15%

I characterize my parents as being, in relation to me:

27 Very liberal liberal neither conservative very conservative

28 Very distant distant neither close very close

29 Very warm warm neither cold very cold

30 Very rigid rigid neither flexible very flexible

31 Very unhelpful unhelpful neither helpful very helpful

32 Very religious religious neither nonreligious antireligious

Comments, if any:

I characterize my home congregation as being, in relation to me:

33 Very helpful helpful neither unhelpful very unhelpful

34 Very conservative conservative neither liberal very liberal

35 "High church" formal neither informal "low church"

36 Very warm warm neither cold very cold

37 Very distant distant neither close very close

38 Very Haugean Haugean nonHaugean antiHaugean don't know

Comments, if any:

39 As a freshman, I felt I could consider as my friends on the Waldorf campus:

Very many	many	a few	very few	none
-----------	------	-------	----------	------

As a freshman, I felt in relation to my classmates at Waldorf:

- 40 Very comfortable* comfortable neither uncomfortable very uncomfortable
 41 Too religious religious neither nonreligious antireligious
 42 Very friendly friendly neither unfriendly very unfriendly
 43 Very helpful helpful neither unhelpful very unhelpful
 44 Very cold cold neither warm very warm

As a freshman, I felt in relation to my closest campus friends:

- 45 Very comfortable* comfortable neither uncomfortable very uncomfortable
 46 Too religious religious neither nonreligious antireligious
 47 Very friendly friendly neither unfriendly very unfriendly
 48 Very helpful helpful neither unhelpful very unhelpful
 49 Very cold cold neither warm very warm

- 50 As a freshman, my closest campus friend was my room-mate: Yes No

In relation to me, my classmates during my freshman year were:

- 51 Very comfortable* comfortable neither uncomfortable very uncomfortable
 52 Too religious religious neither nonreligious antireligious
 53 Very friendly friendly neither unfriendly very unfriendly
 54 Very helpful helpful neither unhelpful very unhelpful
 55 Very cold cold neither warm very warm

In relation to me, my closest campus friends were:

- 56 Very comfortable* comfortable neither uncomfortable very uncomfortable
 57 Too religious religious neither nonreligious antireligious
 58 Very friendly friendly neither unfriendly very unfriendly
 59 Very helpful helpful neither unhelpful very unhelpful
 60 Very cold cold neither warm very warm

*Comfortable here means at ease, feeling relaxed about another person.

61 My feelings about Waldorf students were, when I was a freshman:

very positive positive mixed negative very negative

62 About how strongly do you feel about your answer?

not at all strongly not very strongly quite strongly very strongly

63 My feelings about Waldorf faculty were, when I was a freshman:

very positive positive mixed negative very negative

64 About how strongly do you feel about your answer?

not at all strongly not very strongly quite strongly very strongly

65 My feelings about the Waldorf administration were, when I was a freshman:

very positive positive mixed negative very negative

66 About how strongly do you feel about your answer?

not at all strongly not very strongly quite strongly very strongly

67 My feelings about the Waldorf Board of Regents were, as a freshman:

very positive positive mixed negative very negative

68 About how strongly do you feel about your answer?

not at all strongly not very strongly quite strongly very strongly

69 My feelings about the Waldorf alumni were, when I was a freshman:

very positive positive mixed negative very negative

70 About how strongly do you feel about your answer?

not at all strongly not very strongly quite strongly very strongly

71 My feelings about American Lutheran Church, Waldorf's sponsor, were:

very positive positive mixed negative very negative

72 About how strongly do you feel about your answer?

not at all strongly not very strongly quite strongly very strongly

73 My withdrawal from Waldorf College was during my:

first week first month first semester second semester

1964 summer first sophomore week first sophomore month

74 The decision to withdraw from Waldorf was primarily:

my own father's mother's both parents peers

75 My activity right now is: (please complete one of the following)

Study: (name and kind of school)_____

Work: (kind)_____Approx. monthly income \$_____

Study primarily with some work: (please specify)_____

Work primarily with some study: (please specify)_____

Armed service_____

Marriage_____

76 Please state here your reason(s) for withdrawing from Waldorf:

APPENDIX E

MEAN AND STANDARD DEVIATION

OF

QUESTIONNAIRE ITEMS

MEAN AND STANDARD DEVIATION OF QUESTIONNAIRE ITEMS FOR DROPOUTS
AND NONDROPOUTS

Vari- able	<u>Male</u>				<u>Female</u>			
	<u>Dropouts</u>		<u>Nondropouts</u>		<u>Dropouts</u>		<u>Nondropouts</u>	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
1	2.66	.86	2.39	.64	2.14	.80	2.48	.75
2	3.28	.59	2.92	.55	3.21	.69	3.12	.51
3	2.52	.99	2.60	.73	2.25	.75	2.56	.79
4	3.38	.62	3.08	.44	3.21	.57	3.21	.51
5	2.76	.87	2.58	.71	2.32	.82	2.32	.71
6	3.17	.60	2.97	.50	3.19	.68	3.05	.59
7	2.62	.94	2.83	.74	2.77	.82	2.68	.73
8	2.96	.87	2.53	.86	2.65	.89	2.75	.64
9	2.54	.84	2.45	.81	2.54	.81	2.27	.69
10	2.93	.77	2.83	.72	2.96	.72	2.82	.83
11	2.14	.74	1.89	.76	1.86	.71	1.85	.90
12	3.21	.56	3.35	.63	3.43	.63	3.27	.69
13	4.62	.94	.04	.42	4.13	1.39	.07	.59
14	1.72	1.62	.01	.10	1.54	1.50	.01	.12
15	1.34	.55	.02	.21	2.04	1.84	.03	.23
16	3.96	1.69	.00	.00	3.54	1.86	.10	.82
17	3.00	1.54	3.11	1.47	2.68	1.56	2.47	1.32
18	1.03	.19	1.04	.20	1.04	.19	1.14	.39
19	2.83	1.20	2.80	1.76	2.70	1.81	2.33	1.48
20	3.21	.90	3.01	.67	3.04	.58	3.17	.62
21	2.93	.65	3.08	.65	3.14	.59	2.98	.54
22	2.61	1.75	1.93	1.65	1.50	1.26	1.85	1.48
23	1.93	1.13	1.75	1.01	1.46	.64	1.38	.78
24	.48	.51	.41	.49	.43	.50	.50	.50
25	.03	.19	.08	.27	.11	.31	.12	.33
26	.03	.19	.09	.29	.00	.00	.08	.27
27	.69	.81	.26	.44	.21	.42	.15	.36
28	.24	.44	.28	.45	.25	.44	.41	.50
29	.03	.19	.08	.27	.11	.31	.00	.00
30	.10	.31	.23	.42	.11	.31	.27	.45
31	.00	.00	.03	.16	.00	.00	.08	.27
32	.10	.31	.18	.51	.29	.46	.12	.33
33	.03	.19	.03	.16	.04	.19	.05	.21
34	.03	.19	.04	.20	.04	.19	.11	.43
35	1.10	.41	1.16	.44	1.18	.39	1.18	.52
36	2.07	.92	2.07	.92	2.07	.81	1.95	.79
37	3.22	1.55	3.11	1.55	2.78	1.65	3.68	1.05
38	1.21	.49	1.15	.40	1.18	.39	1.06	.24
39	1.55	.78	1.58	.80	1.32	.67	1.21	.60
40	2.44	.87	2.73	1.08	2.69	1.05	2.55	.98

MEAN AND STANDARD DEVIATION OF QUESTIONNAIRE ITEMS FOR DROPOUTS
AND NONDROPOUTS (Continued)

Vari- able	<u>Male</u>				<u>Female</u>			
	<u>Droputs</u>		<u>Nondroputs</u>		<u>Droputs</u>		<u>Nondroputs</u>	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
41	4.00	.66	3.89	.80	4.19	.83	4.17	.89
42	1.80	.58	1.94	.63	1.68	.86	1.67	.90
43	3.65	.78	3.55	.75	3.62	.98	3.64	.85
44	4.00	.85	4.21	.74	4.15	.91	4.27	.90
45	1.76	.83	1.99	.74	1.81	.62	1.86	.79
46	1.85	.73	2.31	.78	2.04	.64	2.34	.83
47	2.87	.92	2.65	.87	2.35	1.02	2.80	.94
48	2.70	1.11	2.91	.85	2.88	.99	2.94	1.01
49	2.04	.55	2.27	.85	2.07	.78	2.30	.90
50	3.61	.72	3.31	.89	3.35	.89	3.43	.93
51	2.67	1.03	2.70	.86	3.43	1.13	2.70	1.03
52	2.00	.98	1.82	.73	1.82	.82	1.79	.67
53	2.12	.95	1.84	.71	1.61	.69	1.88	.76
54	2.45	.51	2.63	.64	2.56	.70	2.34	.51
55	2.04	.84	1.88	.55	1.89	.57	1.82	.61
56	2.23	.87	2.10	.56	2.00	.61	2.06	.58
57	3.55	.91	3.89	.57	3.81	.75	3.98	.65
58	1.50	.65	1.35	.59	1.21	.42	1.23	.46
59	2.45	.51	2.65	.63	2.48	.75	2.32	.56
60	1.71	.69	1.62	.54	1.43	.57	1.55	.83
61	1.91	.73	1.86	.68	1.71	.66	1.66	.57
62	3.91	.53	4.23	.59	4.46	.65	4.42	.63
63	1.52	.51	1.68	.52	1.75	.44	1.75	.47
64	1.96	.81	1.94	.55	1.75	.75	1.91	.55
65	2.41	.59	2.55	.63	2.54	.71	2.37	.63
66	1.89	.58	1.92	.49	1.96	.64	1.97	.50
67	2.23	.61	2.13	.63	2.04	.59	2.00	.56
68	3.73	.70	3.80	.73	4.00	.69	3.92	.76
69	1.36	.49	1.54	.50	1.25	.44	1.46	.53
70	2.50	.60	2.54	.56	2.59	.69	2.29	.46
71	1.52	.59	1.61	.55	1.43	.50	1.57	.66
72	1.73	.63	1.80	.52	1.68	.61	1.69	.58
73	4.09	.61	4.10	.51	4.42	.64	4.45	.61
74	1.00	1.55	2.33	4.04	.00	.00	.00	.00
75	2.00	3.16	4.00	3.16	4.75	2.96	4.50	3.00
76	.80	1.79	2.33	4.04	.00	.00	.00	.00
77	1.40	3.13	1.67	2.89	.00	.00	3.67	3.51
78	1.75	3.50	.00	.00	.00	.00	.00	.00
79	1.00	.00	2.00	.00	1.00	.00	2.00	.00
80	1.64	.48	1.90	.30	1.76	.44	1.93	.25

MEAN AND STANDARD DEVIATION OF QUESTIONNAIRE ITEMS FOR ACUTE CONCERNS
AND NONACUTE CONCERNS

Variable	<u>Male</u>				<u>Female</u>			
	<u>Acute concerns</u>		<u>Nonacute concerns</u>		<u>Acute concerns</u>		<u>Nonacute concerns</u>	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
1	2.46	.66	2.47	.73	2.63	.52	2.36	.80
2	3.08	.76	3.01	.56	3.25	.71	3.15	.55
3	2.54	.97	2.58	.78	2.63	.52	2.46	.81
4	3.31	.63	3.15	.49	3.13	.64	3.22	.52
5	2.69	1.18	2.63	.68	1.63	.52	2.39	.73
6	3.31	.48	2.99	.54	3.25	.71	3.08	.61
7	2.83	1.19	2.76	.73	2.75	.89	2.70	.75
8	3.33	.89	2.55	.84	2.50	.93	2.77	.67
9	2.42	.90	2.48	.80	2.75	.46	2.30	.74
10	3.00	.85	2.84	.71	2.38	.74	2.93	.77
11	2.00	1.00	1.95	.73	1.75	.46	1.87	.87
12	3.46	.52	3.28	.62	3.38	.52	3.31	.69
13	2.11	2.27	.98	1.97	1.56	1.94	1.00	1.96
14	1.17	1.82	.29	.84	1.33	2.12	.29	.76
15	.72	.83	.27	.60	1.22	1.99	.47	1.19
16	2.17	2.41	.71	1.68	1.67	2.12	.85	1.86
17	3.38	1.50	3.03	1.48	3.50	1.41	2.46	1.36
18	1.00	.00	1.04	.21	1.25	.46	1.09	.33
19	3.62	1.19	2.69	1.64	2.75	1.58	2.42	1.60
20	3.23	.73	3.04	.75	3.00	.76	3.14	.60
21	3.08	.64	3.03	.66	3.00	.53	3.04	.57
22	2.69	1.97	2.03	1.65	1.25	.46	1.80	1.48
23	2.00	1.29	1.77	1.01	1.63	.92	1.38	.72
24	.38	.51	.43	.50	.50	.53	.48	.50
25	.08	.28	.07	.25	.38	.52	.09	.29
26	.08	.28	.08	.27	.25	.46	.04	.19
27	1.00	1.00	.29	.46	.38	.52	.15	.36
28	.15	.38	.29	.46	.50	.53	.35	.48
29	.00	.00	.08	.27	.00	.00	.04	.19
30	.00	.00	.22	.42	.00	.00	.25	.43
31	.00	.00	.02	.15	.00	.00	.06	.24
32	.00	.00	.18	.49	.00	.00	.18	.38
33	.08	.28	.02	.15	.00	.00	.05	.21
34	.08	.28	.03	.18	.00	.00	.09	.40
35	1.15	.55	1.14	.41	1.50	.76	1.15	.45
36	2.38	.77	2.02	.93	2.38	1.06	1.96	.76
37	3.00	1.83	3.16	1.51	2.00	1.77	3.55	1.20
38	1.38	.65	1.13	.38	1.75	.46	1.04	.19
39	1.77	.73	1.54	.80	1.50	1.07	1.21	.56
40	2.17	.83	2.73	1.05	2.86	1.46	2.55	.95

MEAN AND STANDARD DEVIATION OF QUESTIONNAIRE ITEMS FOR ACUTE CONCERNS
AND NONACUTE CONCERNS (Continued)

Variable	<u>Male</u>				<u>Female</u>			
	<u>Acute concerns</u>		<u>Nonacute concerns</u>		<u>Acute concerns</u>		<u>Nonacute concerns</u>	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
41	3.60	.84	3.95	.75	3.86	1.35	4.19	.82
42	2.00	.63	1.89	.62	2.00	1.60	1.65	.80
43	3.60	.97	3.57	.73	3.14	1.21	3.67	.85
44	4.00	.67	4.18	.78	4.29	.76	4.24	.92
45	1.90	.88	1.94	.75	2.14	1.35	1.82	.68
46	1.75	.75	2.24	.78	2.29	1.50	2.25	.72
47	3.09	.83	2.65	.88	2.67	1.21	2.67	.97
48	1.89	.33	2.96	.90	2.33	.52	2.95	1.02
49	2.40	.84	2.19	.78	2.00	1.15	2.24	.85
50	3.40	.97	3.39	.85	2.83	1.17	3.45	.90
51	2.20	.84	2.81	.87	3.00	.00	2.88	1.13
52	1.67	.78	1.90	.81	2.25	.71	1.75	.71
53	1.85	.69	1.92	.80	2.13	.99	1.76	.72
54	2.60	.70	2.59	.61	2.71	.76	2.37	.55
55	1.80	.79	1.93	.62	2.00	.76	1.82	.58
56	2.20	.63	2.12	.65	2.13	.83	2.04	.57
57	3.80	.63	3.81	.69	3.71	.49	3.96	.69
58	1.46	.52	1.38	.62	1.25	.46	1.23	.45
59	2.50	.53	2.61	.62	2.57	.53	2.36	.63
60	1.60	.52	1.64	.59	1.25	.46	1.55	.78
61	1.80	.63	1.88	.70	1.63	.74	1.67	.59
62	4.00	.50	4.17	.60	4.71	.49	4.41	.64
63	1.77	.44	1.62	.53	1.75	.46	1.75	.46
64	1.92	.79	1.95	.60	2.00	.53	1.85	.63
65	2.40	.84	2.53	.59	2.71	.76	2.40	.64
66	2.00	.63	1.90	.50	2.13	.64	1.95	.54
67	2.20	.42	2.14	.65	2.13	.64	2.00	.56
68	3.60	.52	3.81	.74	3.86	.38	3.95	.76
69	1.46	.52	1.50	.50	1.50	.53	1.39	.52
70	2.50	.71	2.53	.55	2.57	.53	2.37	.55
71	1.60	.52	1.59	.56	1.38	.52	1.54	.63
72	1.90	.57	1.77	.55	1.88	.64	1.67	.59
73	3.78	.67	4.13	.51	4.29	.76	4.46	.61
74	1.50	1.73	1.40	3.13	.00	.00	.00	.00
75	3.00	3.56	3.00	3.25	4.75	3.20	4.63	2.88
76	1.33	2.31	1.40	3.13	.00	.00	.00	.00
77	2.33	4.04	1.00	2.24	3.50	4.95	1.33	2.31
78	3.50	4.95	.00	.00	.00	.00	.00	.00
79	1.36	.49	1.74	.44	1.38	.51	1.73	.45
80	1.00	.00	2.00	.00	1.00	.00	2.00	.00

APPENDIX F

CODE BOOK

1. Questionnaire - ACT Study
2. MMPI - LYRI Study

CODE BOOK

AN INVESTIGATION OF FACTORS LEADING TO
THE WITHDRAWAL OF WALDORF JUNIOR COLLEGE FRESHMEN

QUESTIONNAIRE - ACT STUDY

C. Durward Roa
College of Education
Michigan State University
January, 1965

INSTRUCTIONS FOR THE USE OF THIS CODE BOOK

1. Code 0 or 00 will always mean Not Applicable or Nothing.
2. Code 8 or 88 will always mean respondent Didn't Know.
3. Code 9 or 99 will always mean Information Not Available or Respondent Did Not Answer.
4. Coder instructions will always follow a line across the page.
5. In the following pages,
 - the left column contains the variable number;
 - the center column contains the card (deck) and column number;
 - the right columns contain the questionnaire number, a brief description of the response category and the coded responses, pages 2-1 through 4-9, and the LYRI scale name and MMPI scale number and name, pages 1-10 and 1-11.

CARD 1

<u>Vari- able</u>	<u>Deck</u>	<u>Column</u>	<u>Scale name</u>	LYRI scales
1	1	1 - 2	Family unity	
2	1	3 - 4	Family spiritual growth	
3	1	5 - 6	Parental authority	
4	1	7 - 8	Intrafamily relationships	
5	1	9 - 10	Dating and morals	
6	1	11 - 12	Life partner	
7	1	13 - 14	Dating and the church	
8	1	15 - 16	Spiritual doubts	
9	1	17 - 18	Personal assurance	
10	1	19 - 20	Inadequacy feelings	
11	1	21 - 22	Academic problems	
12	1	23 - 24	Social relationships	
13	1	25 - 26	Relation to teachers	
14	1	27 - 28	Peer acceptance	
15	1	29 - 30	Judgment of peers	
16	1	31 - 32	Personal consistency	
17	1	33 - 34	Adult consistency	
18	1	35 - 36	Christian vocation	
19	1	37 - 38	Moral problems	
20	1	39 - 40	Boy-girl relationships	
21	1	41 - 42	Spiritual guidance	
22	1	43 - 44	Family counseling	
23	1	45 - 46	Self-realization	
24	1	47 - 48	Achievement	

CARD 1.2.4

<u>Variable</u>	<u>Deck</u>	<u>Column</u>	<u>Scale name</u>	LYRI scales
25	1	49 - 50	Service	
26	1	51 - 52	Happiness	
27	2	1 - 2	Justification	
28	2	3 - 4	Humanitarian	
29	2	5 - 6	Conservatism	
30	2	7 - 8	Christian concepts	
31	2	9 - 10	Forgiveness	
32	2	11 - 12	Religious commitment	
33	4	9 - 10	1 Hs Hypochondriasis	MMPI scales
34	4	11 - 12	2 D Depression	
35	4	13 - 14	3 Hy Hysteria	
36	4	15 - 16	4 Pd Psychopathic deviation	
37	4	17 - 18	5 Mf Masculine-feminine	
38	4	19 - 20	6 Pa Paranoia	
39	4	21 - 22	7 Pt Psychasthenia	
40	4	23 - 24	8 Sc Schizophrenia	
41	4	25 - 26	9 Ma Hypomania	
42	4	27 - 28	0 Si Social introversion	
43	4	33 - 34	ES Ego strength	
44	4	39 - 40	DY Dependency	
45	4	41 - 42	DO Dominance	
46	4	43 - 44	RE Social Responsibility	
47	4	45 - 46	PR Prejudice	
48	4	47 - 48	ST Social status	
49	4	49 - 50	CN Control	

CARD 2

QUESTIONNAIRE STUDY

<u>Vari-</u> <u>able</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
1	2	43	61	Feelings about Waldorf students 1 - very positive 2 - positive 3 - mixed 4 - negative 5 - very negative
2	2	44	62	Intensity of feelings about students 1 - not at all strongly 2 - not very strongly 3 - quite strongly 4 - very strongly
3	2	45	63	Feelings about Waldorf faculty 1 - very positive 2 - positive 3 - mixed 4 - negative 5 - very negative
4	2	46	64	Intensity of feelings about faculty 1 - not at all strongly 2 - not very strongly 3 - quite strongly 4 - very strongly
5	2	47	65	Feelings about Waldorf administration 1 - very positive 2 - positive 3 - mixed 4 - negative 5 - very negative
6	2	48	66	Intensity of feelings about administration 1 - not at all strongly 2 - not very strongly 3 - quite strongly 4 - very strongly
7	2	49	67	Feelings about board of regents 1 - very positive 2 - positive 3 - mixed 4 - negative 5 - very negative

CARD 2

<u>Vari- able</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
8	2	50	68	Intensity of feelings about regents 1 - not at all strongly 2 - not very strongly 3 - quite strongly 4 - very strongly
9	2	51	69	Feelings about Waldorf alumni 1 - very positive 2 - positive 3 - mixed 4 - negative 5 - very negative
10	2	52	70	Intensity of feelings about alumni 1 - not at all strongly 2 - not very strongly 3 - quite strongly 4 - very strongly
11	2	53	71	Feelings about American Lutheran Church 1 - very positive 2 - positive 3 - mixed 4 - negative 5 - very negative
12	2	54	72	Intensity of feelings about the ALC 1 - not at all strongly 2 - not very strongly 3 - quite strongly 4 - very strongly
13	2	55	13	Time of withdrawal 1 - first week 2 - first month 3 - first semester 4 - second semester 5 - 1964 summer 6 - first sophomore week 7 - first sophomore month
14	2	56	14	Decision to withdraw 1 - my own 2 - father's 3 - mother's 4 - both parents 5 - peers

CARD 2

<u>Variable</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
15	2	57	15	Activity of withdrawal student currently 1 - study 2 - work 3 - study primarily with some work 4 - work primarily with some study 5 - armed service

16	2	58	16	Reasons for withdrawal (open ended)
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CARD 3

17	3	4	17	Residence before freshman year 1 - rural 1 - 99 2 - village 100 - 999 3 - town 1,000 - 2,499 4 - city 2,500 - 24,999 5 - large city 25,000 up
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18	3	5	18	Family's residence before freshman year 1 - not at all 2 - once 3 - twice 4 - three times 5 - four or more times
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19	3	6	19	Number of schools attended 1 - one 2 - two 3 - three 4 - four 5 - five 6 - six 7 - seven or more
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20	3	7	20	Social class of family 1 - lower 2 - lower middle 3 - middle 4 - upper middle 5 - upper
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21	3	8	21	Family income 1 - much higher 2 - higher 3 - similar 4 - lower 5 - much lower
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CARD 3

<u>Variable</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
22	3	9	22	Matriculation decision 1 - my own 2 - my father's 3 - my mother's 4 - both parents 5 - mutual
23	3	10	23	Waldorf rated as first choice 1 - first 2 - second 3 - third 4 - fourth 5 - fifth or below
24	3	11	24	Matriculation influence: parents
25	3	12	25	Matriculation influence: counselor
26	3	13	26	Matriculation influence: admissions
27	3	14	27	Matriculation influence: pastor
28	3	15	28	Matriculation influence: alumnus
29	3	16	29	Matriculation influence: another college
30	3	17	30	Matriculation influence: relatives
31	3	18	31	Matriculation influence: WC teacher
32	3	19	32	Matriculation influence: friend
33	3	20	33	Matriculation influence: teacher
34	3	21	34	Matriculation influence: WC administrator
35	3	22	35	Health 1 - very good 2 - fair 3 - poor
36	3	23	36	Reading ability 1 - very good 2 - good 3 - fair 4 - poor

CARD 3

<u>Vari-</u> <u>able</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
37	3	24	37	Remedial study 1 - English 2 - Mathematics 3 - Reading 4 - None 5 - English-Mathematics 6 - English-Reading
38	3	25	38	Class attendance 1 - very regular 90% 2 - regular 75% 3 - off and on 50% 4 - irregular 25% 5 - seldom 15%
39	3	26	39	Chapel attendance 1 - very regular 90% 2 - regular 75% 3 - off and on 50% 4 - irregular 25% 5 - seldom 15%
40	3	27	40	Parents 1 - very liberal 2 - liberal 3 - neither 4 - conservative 5 - very conservative
41	3	28	41	Parents 1 - very distant 2 - distant 3 - neither 4 - close 5 - very close
42	3	29	42	Parents 1 - very warm 2 - warm 3 - neither 4 - cold 5 - very cold
43	3	30	43	Parents 1 - very rigid 2 - rigid 3 - neither 4 - flexible 5 - very flexible

CARD 3

<u>Vari-</u> <u>able</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
44	3	31	44	Parents 1 - very unhelpful 2 - unhelpful 3 - neither 4 - helpful 5 - very helpful
45	3	32	45	Parents 1 - very religious 2 - religious 3 - neither 4 - nonreligious 5 - antireligious
46	3	33	46	Congregation 1 - very helpful 2 - helpful 3 - neither 4 - unhelpful 5 - very unhelpful
47	3	34	47	Congregation 1 - very conservative 2 - conservative 3 - neither 4 - liberal 5 - very liberal
48	3	35	48	Congregation 1 - "high church" 2 - formal 3 - neither 4 - informal 5 - "low church"
49	3	36	49	Congregation 1 - very warm 2 - warm 3 - neither 4 - cold 5 - very cold
50	3	37	50	Congregation 1 - very distant 2 - distant 3 - neither 4 - close 5 - very close

CARD 3

<u>Variable</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
51	3	38	51	Congregation 1 - very Haugean 2 - Haugean 3 - nonHaugean 4 - antiHaugean 5 - don't know
52	3	39	52	Friends, quantity 1 - very many 2 - many 3 - a few 4 - very few 5 - none
53	3	40	53	Toward classmates 1 - very comfortable 2 - comfortable 3 - neither 4 - uncomfortable 5 - very uncomfortable
54	3	41	54	Toward classmates 1 - too religious 2 - religious 3 - neither 4 - nonreligious 5 - antireligious
55	3	42	55	Toward classmates 1 - very friendly 2 - friendly 3 - neither 4 - unfriendly 5 - very unfriendly
56	3	43	56	Toward classmates 1 - very helpful 2 - helpful 3 - neither 4 - unhelpful 5 - very unhelpful
57	3	44	57	Toward classmates 1 - very cold 2 - cold 3 - neither 4 - warm 5 - very warm

CARD 3

<u>Variable</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
58	3	45	58	Toward friends 1 - very comfortable 2 - comfortable 3 - neither 4 - uncomfortable 5 - very uncomfortable
59	3	46	59	Toward friends 1 - too religious 2 - religious 3 - neither 4 - nonreligious 5 - antireligious
60	3	47	60	Toward friends 1 - very friendly 2 - friendly 3 - neither 4 - unfriendly 5 - very unfriendly
61	3	48	61	Toward friends 1 - very helpful 2 - helpful 3 - neither 4 - unhelpful 5 - very unhelpful
62	3	49	62	Toward friends 1 - very cold 2 - cold 3 - neither 4 - warm 5 - very warm
63	3	50	63	Closest friend as room-mate 1 - yes 2 - no
64	3	51	64	From classmates 1 - very comfortable 2 - comfortable 3 - neither 4 - uncomfortable 5 - very uncomfortable

CARD 3

<u>Vari-</u> <u>able</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
65	3	52	65	From classmates 1 - too religious 2 - religious 3 - neither 4 - nonreligious 5 - antireligious
66	3	53	66	From classmates 1 - very friendly 2 - friendly 3 - neither 4 - unfriendly 5 - very unfriendly
67	3	54	67	From classmates 1 - very helpful 2 - helpful 3 - neither 4 - unhelpful 5 - very unhelpful
68	3	55	68	From classmates 1 - very cold 2 - cold 3 - neither 4 - warm 5 - very warm
69	3	56	69	From friends 1 - very comfortable 2 - comfortable 3 - neither 4 - uncomfortable 5 - very uncomfortable
70	3	57	70	From friends 1 - too religious 2 - religious 3 - neither 4 - nonreligious 5 - antireligious
71	3	58	71	From friends 1 - very friendly 2 - friendly 3 - neither 4 - unfriendly 5 - very unfriendly

CARD 3

<u>Vari- able</u>	<u>Deck</u>	<u>Column</u>	<u>Q'aire</u>	<u>Item Detail</u>
72	3	59	72	From friends 1 - very helpful 2 - helpful 3 - neither 4 - unhelpful 5 - very unhelpful
73	3	60	73	From friends 1 - very cold 2 - cold 3 - neither 4 - warm 5 - very warm

CARD 4

74	4	51-52	ACT English	ACT scales
75	4	53-54	ACT Mathematics	
76	4	55-56	ACT Social Studies	
77	4	57-58	ACT Natural Sciences	
78	4	59-60	ACT Composite	
79	4	65	Attrition	Subgroups
			1 - dropout	
			2 - non-dropout	
80	4	66	Faculty rating	
			1 - acute concerns	
			2 - non-acute concerns	
	4	67	Sex	
			1 - male	
			2 - female	
	4	72-74	Subject Number	
	4	75	Deck Number	

APPENDIX G
COMPARISON
OF
MMPI MEAN AND STANDARD DEVIATION
BETWEEN
LYRI RELEASE AND NONRELEASE RESPONSES

COMPARISON OF MMPI MEAN AND STANDARD DEVIATION BETWEEN LYRI RELEASE AND
NONRELEASE RESPONSES ¹

Vari- able	Male				Female			
	LYRI-MMPI responses		MMPI only responses		LYRI-MMPI responses		MMPI only responses	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
33	51.83	8.81	61.42	24.36	48.76	6.88	62.95	22.24
34	51.67	11.34	65.28	23.58	51.49	7.43	63.35	21.96
35	54.08	7.07	63.35	23.32	51.74	6.89	62.55	22.74
36	58.24	9.36	67.51	22.22	54.40	8.25	65.35	21.58
37	57.25	9.17	65.37	23.39	49.47	8.97	63.40	22.80
38	56.46	7.75	67.42	22.37	54.77	7.88	67.50	20.83
39	60.54	10.99	70.42	21.47	57.76	7.23	71.10	17.12
40	60.38	11.74	70.14	21.52	56.38	7.25	71.80	19.25
41	58.60	11.40	66.44	22.84	55.95	9.56	69.45	19.68
42	54.03	9.75	66.56	23.28	56.64	8.92	68.25	19.64
43	53.10	8.32	60.65	25.17	54.33	7.14	62.70	22.26
44	54.20	8.67	66.23	22.90	53.16	8.14	66.55	19.58
45	49.37	8.22	58.98	25.73	48.28	8.13	60.10	24.11
46	47.89	8.73	58.21	26.62	48.42	9.04	56.90	26.43
47	48.50	8.85	61.84	24.89	47.05	8.00	65.05	22.11
48	50.61	8.31	58.93	26.11	49.49	8.26	59.05	24.78
49	52.15	11.00	62.86	24.51	46.94	10.53	60.70	23.98
	N = 83		N = 43		N = 78		N = 20	

¹All "t" tests were significant at the .01 level.

APPENDIX H

CROSS-VALIDATION OF VARIABLES SELECTED ON THE BASIS OF
REPEATED OCCURRENCE IN TWENTY-FOUR EXPERIMENTS
(A CLINICAL HUNCH)

AN ADDITIONAL EXPERIMENT ON CROSS-VALIDATION BASED ON CLINICAL HUNCHES

Various approaches were made to attempt discrimination of the best predictor variables. Twenty-four "experiments" were conducted based on alternative rationales. It appeared that certain variables recurred even though the reasons for their use in developing an optimum equation varied. The results of using the recurring variables are reported below as Sample III. (Compare p. 92.)

Variables selected

Male dropouts: 7,13,14,24,26,37,43,47

Male concerns: 2,11,19,23,25

Female dropouts: 1...3,12,22,30...32,36,37,39,43,46

Female concerns: 2,3,11,12,15,18,22,23,30,33,39,44,45,46

Correct identifications

Male dropouts: 89%

Male concerns: 64%

Female dropouts: 64%

Female concerns: 50%

Total dropouts: 78%

Total concerns: 60%

Sample III

	Male (N = 41)		Female (N = 39)	
	Mean	Std. dev.	Mean	Std. dev.
Dropouts				
Y	1.6098	.4939	1.7180	.4559
$\bar{Y}$	1.6010	.2708	1.7688	.3460
R		.23		.39
Acute concerns				
Y	1.7317	.4486	1.8974	.3074
$\bar{Y}$	1.7897	.1950	1.9484	.2251
R		.34		.25

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