Personality Predictors of Academic Success in Underachieving First Year College Students

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PERSONALITY PREDICTORS OF ACADEMIC SUCCESS IN UNDERACHIEVING FIRST YEAR COLLEGE STUDENTS

by

Carolyn Wilson-Garrison

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Education
Department of Counseling and Personnel

Western Michigan University
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In this study, the role of nonintellective variables as predictors of academic success in underachieving first year college students was explored. Traditional predictors of college grades, high school grade point average and standardized scores on the American College Testing examination (ACT), were also examined.

The purpose of this study was to assess whether college grades at the end of the first year would differ according to underachieving students' personality styles, expressed concerns, and behavioral correlates thereby offering the possibility that such nonintellective factors may be useful in the prediction of grades.

The sample was a randomly selected group of eighty-seven 18- and 19-year-old first year students entering Western Michigan University's Alpha program for underachieving students. Students completed the Millon Adolescent Personality Inventory-Guidance Form (MAPI-G) to provide measures of nonintellective variables. Pearson product moment correlations, step-wise regression analyses, factor analyses, and chi-square procedures were employed in statistical analyses.

High school grade point averages and ACT scores proved to be poor predictors of this sample's college GPAs with the highest relationship being $R = .13$. 

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The sample was dissimilar on the nonintellective measures employed in this study suggesting that underachievers may be heterogeneous on such variables.

The students in this sample also deviated significantly from the general population of adolescents in proportions of personality styles. The represented sample was more sociable and their personality styles were more rigid than the general population of adolescents.

Several sets of predictive formulas were developed which predict these underachieving students' college grades in the $R = .43$ to $.70$ range.

No relationship existed between personality styles and college grades. Neither the styles considered as more adaptive nor the styles considered to be more successful for men or women were related to college grades. Rigidity of personality style did not appear to mediate college grades.

Results indicated a negative relationship between expressed concerns and college grades. Behavior problems also were negatively related to college grades. Behaviors demonstrating social non-conformity were uniformly negative in their relationship to college grades.

Theoretical and practical implications were proposed and recommendations for further research were offered.
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ACKNOWLEDGMENTS

A poem by doctoral student and mother Kay Keeshand Hamond (1977) dedicates this dissertation to all the women who have struggled to further their education and to all their children who have struggled to understand, especially my children, David, Anne, and Laura, who suffered with me, for me, and sometimes because of me during these years so that I might continue to grow.
Special appreciation goes to my husband, Jim, for his support, encouragement, perspective, and patience.

Throughout the process, my committee was a positive factor. Dr. Edward Trembley's patient and thoughtful editing and his understanding of the dissertation process were invaluable. Dr. Robert Brashear's generous willingness to devote time and attention to the statistical questions related to this study is very much appreciated. My thanks and affection are extended to Dr. Robert Betz, who has been a friend and mentor during my graduate work and also contributed insightful perspectives to the dissertation. Special appreciation is extended to Dr. Avner Stern, my original committee chairperson, who helped me learn to trust my academic and clinical judgment.

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Carolyn Wilson-Garrison
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CHAPTER I

INTRODUCTION

Rationale

Psychologists and educators have been unable to explain why students of adequate intellectual ability vary so greatly in their academic performances. This inability seriously limits prediction of academic success and handicaps those who would design programs to assist underachievers. The deficit is particularly damaging at the college level because college dropouts represent a loss of talent to the society, a potential drain on the society's resources, and a decrease in student numbers in an already diminished college student body.

Able but underachieving college students are an enigma. Most colleges are tempted to admit such students because of their potential and because records show that some of these students do extremely well in college. The "late bloomer" is familiar to all! However, many of the underachieving population continue to do poorly; many fail; many become discouraged and drop out. The college, the society, and the students lose and researchers have failed to predict potential successes or design programs to prevent failure.

Most researchers involved with student achievement on the college level have settled for the only proven combination thus far available to predict college performance—a combination of high
school grades and standardized test scores such as on the Scholastic Aptitude Test (SAT) or American College Testing Examination (ACT). Even these predictors fail to account for a significant portion of variance in the success of those performing within average academic limits. Researchers, like Beach (1968), found that such predictors were of no use at all in predicting success among underachievers. Further, academic predictors give little direction to those charged with the mission of remediation or motivation of underachieving students. Also, academic predictors contribute nothing to an understanding of psychosocial factors which might be causally related to the etiology of the underachievement.

The purpose of this study was to once again investigate non-intellective factors which may mediate academic success of underachieving students at the college level. Though nonintellective factors have not escaped researchers' scrutiny, little success has been enjoyed in pinpointing psychosocial factors which affect academic success. This failure has been, in part, because of a lack of theoretical foundations which define human behavior and of inadequate instrumentation to measure theoretical constructs. This study was designed to address the mistakes of the past, i.e., lack of a theoretical base from which to define variables and inappropriate instrumentation. Identification of a cluster of nonintellective predictor variables for academic success in college was the main focus of this study. The predictor variables included personality style, expressed concerns, behavioral correlates, and demographic factors which give
useful direction in predicting and facilitating academic success in college for a population of underachieving students.

History

Since the dawn of education as we know it, educators, administrators, politicians, parents, mental health experts, and students have been puzzled over why some individuals achieve academically and others do not. Early research efforts focused on the innate intelligence of the individual, assuming that performance was a direct and simple result of intellectual ability. Soon, this explanation proved too simplistic to be of much value beyond identification of individuals whose intellectual abilities lay at the extreme poles of the normal distribution. Even at the extreme positive end of the distribution, amount of innate intelligence often did not correlate with quality of academic performance.

Studies in the 1920s and 1930s demonstrated that researchers were struggling to understand and predict academic success (Chambers, 1925; Hinkelman, 1929; Kelley, 1939). Although they too looked at demographic, intellective, and nonintellective factors, they too produced disappointing results. Research into the etiology of academic performance has not made much progress. In 1959, Merrill and Murphy observed, "The age old question of why some students achieve well in an academic situation while others achieve poorly is still with us" (p. 208). A quarter of a century and a multitude of studies later, the question is a few ages older but is still with us.
The years have yielded success, however, in the area of academic performance prediction using the combination of high school grades and test scores of such measures as the ACT or SAT. These predictors still leave a large amount of achievement variability unexplained and are not predictive for homogeneous populations like underachievers. Nor are purely academic predictors of much direction to those involved in understanding, motivating, and remediating underachieving students. Most researchers are willing, hypothetically, to ascribe a portion of variance in college achievement to nonintellective factors and numerous attempts have been made to identify nonintellective factors which affect academic performance among intellectually able individuals. However, a review of the relevant literature revealed that such psychological, social, and demographic factors have yet to be isolated. Most results have been statistically nonsignificant or contradictory. Analysis of the literature shows that a factor which appears significant in one group of studies is usually shown to be totally unrelated to academic success in a contrasting group of studies.

For those who have "underachieved" in high school performance and/or on standardized test scores but are identified as within normal ranges intellectually, there is no dependable way of predicting college performance. No useful data are available in the area of nonintellective mediating variables. Retention research is being conducted by higher education institutions but little of it is psychosocial in focus and little of it is yielding useful information.
in how to improve the performance of underachievers in college or in prediction of success of underachievers.

Variables

This study attempted to isolate personality styles, expressed concerns, correlated behaviors, and demographic variables which predict and explain academic performance at the end of the first year of college for a group of students admitted directly from high school but identified as underachievers by their high school GPA and/or their ACT scores.

In this study, the dependent variable, academic performance in college, was measured by the cumulative college GPA after the fall and winter college terms.

In total, 35 independent variables were employed in the study. Independent variables were of two types, demographic and psychosocial variables. Demographic variables were high school GPA, ACT composite score, and sex. Age was not considered a necessary variable because all subjects in the study were either 18 or 19 years of age. An independent variable named "year" was created allowing analysis of samples from 1982-83 and 1983-84 separately as well as in a pooled group. See Appendix A for a full list of all variables.

Psychosocial independent variables were measured by the Millon Adolescent Personality Inventory-Guidance Form (MAPI-G) (Millon, Green, & Meagher, 1982). These variables are organized into three types: (a) personality style, (b) expressed concerns, and
(c) behavioral correlates. The independent variables based on the MAPI-G were:

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<tr>
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<th>Expressed concerns</th>
<th>Behavioral correlates</th>
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<td>Sensitive</td>
<td>Academic confidence</td>
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Limitations of Research

Academic prediction studies have a number of problems inherent in them. As in all quasi-experimental designs, experimental controls are lacking and the number of possible moderating variables is vast. The inability to make causal statements and the caution indicated in generalizing results make researchers question the usefulness of such efforts. Further, past efforts to explain and predict academic success through nonintellective factors were disappointing. As Astin (1975) reminded us, the complexity of factors impinging upon academic success makes variable choice difficult. Although research methodology has become increasingly sophisticated, it is still incapable of coping with the total number of moderating variables and the associated interactions which in reality shape so simple a measure as college GPA.

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Another issue indigenous to researching academic underachievement is one of construct validity. This problem is caused by the absence of any theoretical base from which to define psychosocial variables and by a lack of instrumentation designed to measure the variables construed by the theory. Most researchers in this field lack a psychological background and often engage in haphazard study hoping to find significant factors without analyzing their variables in terms of psychological theory. An associated problem is one of operational definition; with no psychological theory as a foundation, researchers are apt to define psychosocial variables in imprecise, contradictory terms which results in hazy or seemingly conflicting results.

Inappropriate instrumentation has been one of the main charges leveled at existing research. Peterson (1963) admonished that one should not use instruments which are of dubious validity or which were not intended to explore nonintellective correlates of academic success. Among the tests he mentions as having been inappropriately used are the MMPI, Rorschach, TAT, EPPS, and the Taylor Manifest Anxiety Scale. Pantages and Creedon (1973) agreed with Peterson that many research problems lie with measurement technique and list several measurement devices which they judge to be inappropriate, e.g., the Bell Adjustment Inventory and the Guilford-Zimmerman Temperament Survey. Nothing of note is apt to come of research which employs the Rorschach or the TAT in an attempt to isolate psychosocial predictors of academic success in underachieving college students. Nor is the MMPI with its emphasis on diagnosis of psychopathology apt to provide
the kind of information needed to explain why some able but underachieving students succeed while others fail in their first year of college.

Results of research which address personality variables affecting academic performance are rarely widely generalizable. In the case of this study, results can, at best, be applied to future groups of underachieving students at Western Michigan University (WMU) enrolled in a special program called "Alpha." Because the person-environment interaction differs greatly from student body to student body, from college to college, and from year to year, prediction of success using a formula derived from a sample of one student population at one college must be applied to predict performance of other student samples with great care.

Peterson (1963), one of the main critics of existing research, summarized the list of threats to validity: "If we use experimental instruments to study unlike groups, seeking unknown variables which are hypothesized to produce ill-defined behavior, shall we be surprised if the resultant information is contradictory and inconclusive" (p. 381)?

Definition of Terms

**Alpha** is an academic year (fall and winter terms) contractual, probationary program for students selected and admitted through the Office of Undergraduate Admissions at Western Michigan University. To qualify, students must have an academic average in high school (HSGPA) between 2.00 and 2.29, have an ACT composite score of 15 or
above, and be admitted on academic probation status at Western Michi­
gan University.

Adequate intellectual ability describes the potential of the individual to perform passing work at Western Michigan University. Potential is demonstrated by past performance in high school, HSGPA, standardized test scores on the ACT as defined by the composite score, and judgment of high school personnel and college admission personnel that the individual is of at least average intellectual ability.

Intellectual ability is the aptitude of the individual to do academic, or cognitive, tasks.

Underachievers/Underachievement refers to the failure of individuals to meet the recognized academic standards for admission to Western Michigan University in terms of HSGPA and ACT scores. This label is also placed by judgment of high school educators and of college admission personnel as a reflection of the individual's failure to do high school academic work of the standard s/he is reportedly capable.

High school GPA (HSGPA) is the cumulative academic average in terms of the scale 0.0 = F, 1.0 = D, 2.0 = C, 3.0 = B, and 4.0 = A, representing the high school grades. Data are self-reported on ACT forms completed by the student and are substantiated by high school transcripts.

ACT scores from the American College Testing Program's assessment test for incoming college students are identified as the ACT. The ACT composite score is used in this research. This score
is a standard score which allows comparison of students in terms of their overall performance on the four competencies tested by the ACT, English, mathematics, social studies, and natural sciences.

Nonintellective factors refers to mediating variables which are not directly based on academic performance or intellectual ability. These include demographic factors, personality factors, and psychosocial factors. For purposes of this study, any variables thought to be associated with academic success which are not intellective or academic are said to be nonintellective.

GPA at the end of the first year in college refers to the numerical grade point average as computed by the academic records office on the basis of $0.0 = F$, $1.0 = D$, $2.0 = C$, $3.0 = B$, and $4.0 = A$. The first year of college refers to the academic year fall and winter terms at Western Michigan University, from September through April. These are the major terms of the school year and all first year students attend school during this time.

Personality consists of an individual's small and distinct group of primary traits that persist and endure, exhibiting a high degree of consistency across situations (Millon, 1981).

Personality styles are models of distinctive functioning which unify diverse elements of overt and covert behavior into single, identifiable syndromes. All people are said to possess a distinctive personality style (Millon, 1981).

Expressed concerns are the feelings and attitudes the subject reports about issues that tend to concern most people at one time or another. The intensity with which the individual experiences these
matters indicates the degree of the expressed concern (Millon et al., 1982).

Behavioral correlates are overt behavior patterns prompted by the inner world of emotion and attitudes. Behavioral correlates, in this case, are thought to be consonant with the inner world of expressed concerns and the global personality style (Millon et al., 1982).

Dysfunctional personality styles are overdrawn personality styles. All people have a personality style which typifies their behavior patterns. When the style is dysfunctional, it becomes rigid and overly controlling rather than flexible and appropriate to the situation (Millon, 1981).

Presence of personality style indicates that the individual exhibits a personality style more than others in the population. The dynamics of this style are said to influence the individual's behavior and the effects of the style can be seen in the behavior (Millon et al., 1982).

Prominence of personality style refers to the style being the most salient feature of the individual's personality. The dynamics of this style will have intense effects on the individual's functioning and can be readily seen in the individual's behavior (Millon et al., 1982).

Base-rate is a converted raw score to adjust for the distribution of personality types in the population for purposes of comparison.
Organization of the Study

This study is organized into five chapters. Included in Chapter I are a rationale for the study, history of the issue, identification of variables to be used, problems inherent in this kind of research, and definition of terms. A review of relevant literature is presented in Chapter II. Design and method, including population characteristics, sampling procedures, statistical designs to be utilized, and data collection procedures are described in Chapter III. Operational and null hypotheses and the findings of the study are described in Chapter IV. Conclusions and recommendations based on the findings are presented in Chapter V.
CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

This chapter presents a review of research related to underachievement in college students. Because much of the research in this field is conducted by Departments of Institutional Research in higher education settings for strictly in-house purposes, it is often unpublished and is, therefore, extremely difficult to locate. This literature review utilized the resources of Educational Resources Information Center (ERIC); an On-Line Automated Reference Service (OARS) search was conducted. The Western Michigan University collection was searched using the On-Line Library Index (OLLI). With a few exceptions, this literature was limited to published sources or to unpublished sources indexed in the above mentioned computerized retrieval systems.

Those who have studied academic performance and achievement can be grouped into: (a) those who have taken a purely intellective approach and are satisfied with the currently used predictors of HSGPA and standardized entrance test scores and who believe that intellective factors are subsumed under high school performance and (b) those who have broadened their inquiry to include nonintellective factors; among those addressing nonintellective factors, several categories emerge: (1) those who emphasized a person-environment
interaction and stress variables such as the make-up of the university in terms of size, housing, student-body, social life, faculty accessibility; (2) those who hypothesized personality factors as mediators; (3) those who stressed that the level of psychopathology determines or, at least, significantly influences academic success and, therefore, conclude that the more psychologically normal students will perform better than those with diagnosable psychological problems; and (4) those who employed a melange of variables hoping to identify some significant factors. Currently, the state of affairs is that researchers have a tried and true formula for predicting academic success for those whose high school performance and standardized test scores fall within the middle standard deviations of the normal distribution.

Intellective Approaches

The most successful group of researches has limited its inquiry to intellective factors. Numerous studies have shown that the predictive validity of HSGPA combined with test scores on such measures as the ACT or SAT can forecast college performance at .50 to .60 levels of correlation (Astin, 1975; Beal & Noel, 1981; Lenning, Beal, & Sauer, 1980; Pantages & Creedon, 1978).

In its 1981 research bulletin ACT (American College, 1981) asserted that by using ACT formulas based on HSGPA and ACT scores, 88% of the predicted freshman grades would be within one grade unit of the actual freshmen grades, 57% would be within 0.5 grade units and 24% would be within 0.2 grade units. For the typical college
under study by ACT, the mean absolute error of prediction was 0.55 grade units and the cross-validation correlation was .56. Such an accomplishment, ACT stated, was "accurate enough to be useful and is certainly better than not using any objective methods of prediction" (Sawyer & Maxey, 1980, p. 3.32). However, ACT cautioned that its predictive formula was "not perfect" and that students and college counselors should "take into account any special, individual characteristics which are not measured by the test scores and high school grades, but which could affect a student's performance in college" (Sawyer & Maxey, 1980, p. 3.32). ACT data were similar across all groups, but predictions were more accurate for females than for males, for whites than for ethnic minorities, for nonhandicapped than for handicapped students.

Other researchers who set out to improve prediction of college academic performance by broadening their inquiry to nonintellective factors concluded that intellective predictors were the best predictors of college academic performance. Kibler (1978), using multiple regression analysis, set out to construct a predictive formula using demographic variables as well as the usual high school percentile rank and ACT composite scores. He concluded that, while other variables added significance to the criterion of predicting college grades, ACT composite scores were the best overall predictors. In a longitudinal study to explore student information from data related to academic achievement, Pemberton (1979) found that students who obtained a bachelor's degree within the traditional 4 years were those who had received high grades in high school. DeBoer (1981)
tested the assumption that nonintellective student attributes mediate college performance. DeBoer was unable to isolate any significant nonintellective factors. Although still convinced of the importance of nonintellective factors, DeBoer confirmed that SAT scores were the most useful predictor of college performance.

Hills (1971) suggested that nonintellective qualities do not add substantially to the prediction levels achieved by using purely intellective factors because the qualities that are important for achieving in college were also important in high school achievement. Thus, the effect of nonintellective attributes was mediated by high school achievement, i.e., the student's HSGPA already reflected his or her nonintellective traits.

Nonintellective Approaches

Many, however, criticized the purely intellective approach to college achievement and advocated taking a broader view of inclusion of multiple mediating variables. Stein (1963) termed preoccupation with intellective predictors the "pilot experience" and described it as providing little understanding of what it takes to achieve in college. In their 1978 study, Pantages and Creedon postulated multiple moderating variables including the usual high school GPA and scholastic aptitude measures. They added first semester college grades, study habits, motivational factors such as commitment level, reasons for attending college, vocational occupational goals, parental influence, educational interests, peer group influences, and personality factors. Other researchers suggesting a multiple
variable approach comprised of intellective, demographic, environmental, and psychological factors include Lenning et al. (1980), who presented the following factors as positively correlated to academic success: high school GPA and class rank, academic aptitude, first semester grades, academic rating of high school, ethnicity, level of degree aspirations, commitment to college, satisfaction, scholarships and grants, part-time employment, and close friends.

**Person-Environment Interaction Approach**

Many who take a wider view of achievement and acknowledge multiple mediating variables advocate the importance of person-environment consequences. Stein (1963) recommended a transactional approach, stating, "Basic to this approach is the assumption that success in college, as all behavior, is a function of the transactions between the individual and the environment" (p. 50).

DeBoer's (1981) research into direct and indirect effects of intellective and nonintellective factors on college achievement supported the person-environment or "transactional" view. Using path analysis to determine direct and indirect causal effects, DeBoer concluded that high school and college environments must be similar for performance to remain stable, that environmental factors affected the accuracy of prediction based on high school performance. As Lavin (1965) postulated in advocating the importance of environmental variables: "Personality characteristics are useful in predicting academic performance only when the social setting in which performance takes place is conceptualized and used as a significant
variable" (p. 111).

Lenning et al.'s (1980) findings suggested the following environmental factors are positively correlated with retention and success: high status of image of institution, private school, religious affiliation, high cost of campus housing, counseling services, academic advising, orientation programs, learning/academic support services, special student services for retention, defined mission and role of institution, extracurricular activities, student/faculty relationships, special academic programs, and academic life.

Further research on person-environment congruence supported the hypothesis that student persistence and dropout rates were significantly affected by the academic and social climate of the institution (Spady, 1971; Terenzini & Pascarella, 1977; Tinto, 1975).

**Personality Variables Approach**

Others who eschewed the purely intellective approach to understanding college achievement explored personality traits as mediators of academic performance. Their work was supported by studies demonstrating that, in general, a significant proportion of behavioral variance is attributable to personality (Block, 1977; Estein, 1979; Olweus, 1977).

Pantages and Creedon (1978) acknowledged the significance of personality factors as did Stein (1963) whose transactional approach included the significance of personality style when studying the various reactions to academic environments caused because of basic personality style differences. Lenning et al. (1980) suggested that
Holland's (1966) personality types should be applied to academic performance.

Studies of the relationship of personality factors to academic achievement have yielded conflicting and disappointing results. As Romine and Crowell (1981) observed: "The track record of personality variables as dependent correlates of under and overachievement has been ... discouraging" (p. 787). Goodstein, Crites, and Heilbrun (1962) attempted to study personality correlates of academic adjustment and concluded that while personality factors do appear to make a significant contribution to the prediction of academic performance in college, no consistent pattern of personality factors was clearly associated with academic success. Results of this study indicated differences in personality patterns among different levels of aptitude and suggested further research on personality patterns within homogeneous academic aptitude levels.

Although some efforts have concentrated on the effects of personality styles (Holland, 1973; Lenning et al., 1980), most studies employing personality factors have employed isolated behaviors or traits rather than global styles of cross-situational functioning (Drake, 1956; Drake & Oetting, 1957; Jensen, 1958; Merrill & Murphy, 1959; Pantages & Creedon, 1978).

Hummel (1966) isolated seven personal dimensions which distinguished underachievers from overachievers. Underachievers were characterized by (a) free-floating anxiety, (b) negative self-value, (c) hostility, (d) negative interpersonal relations, (e) high independence-dependence conflict, (f) social orientation, and (g)
unrealistic goals. In 1981, Romine and Crowell achieved similar results, finding overachievers to be serious, hardworking, consistent, self-starters with a clear need to excel academically. Further, they were found to be planful, organized, and responsible types who did not procrastinate. The underachieving group in this study was found to possess the opposite traits.

Merrill and Murphy (1959) studied students with low previous academic achievement and low aptitude scores and pointed out that some of these students will succeed in college. They hypothesized that nonintellective factors might be useful in predicting success with this population. They separated their sample of students whose predicted college grades were low into those who overachieved, i.e., performed significantly better than was predicted, and those who performed as predicted, i.e., failed. The overachievers were more dominant and less autonomous, more deferent, less exhibitionistic, less affiliative, less concerned about change, and more enduring than their failing peers. The failing, or performing-as-expected, group were less achievement oriented, more deferring, more orderly, more exhibitionistic, more affiliative, less intracreative, less dominant, more abasing, more changeful, less enduring, less heterosexual, and less aggressive than underachievers who succeeded.

Many kinds of individual personality traits have been hypothesized as related to achievement. Stern, Stein, and Bloom (1956) found that subjects of similar intellectual ability succeeded or failed academically in correlation with the quality of their interpersonal relationships, the tranquility of their inner states, and
the nature of their goal orientation.

In various studies different personality traits conflicted with each other in terms of reported effect on attitude and behavior. Smith's (1976) findings that dropouts are more able to deal with ambiguity and uncertainty conflicted with Brawer's (1973) findings that persisters are more able to deal with ambiguity and uncertainty.

Psychopathology Approach

Others have concentrated on maladjustment or psychopathology as a moderator of academic achievement (Drake, 1956; Drake & Oetting, 1957; Jensen, 1958; Merrill & Murphy, 1959; Pantages & Creedon, 1978). Jensen (1958) concluded that nonachieving students consistently demonstrated higher levels of psychopathology on the MMPI than achieving students. Drake (1956) maintained that high 8 measuring thought disorders, 9 measuring hypomania scales and low 0 measuring social introversion scales on the MMPI are associated with males lacking academic motivation.

Miscellaneous Variables Approach

Many researchers appeared to be choosing random individual traits in hopes of finding some nonintellective factor that was related to successful academic performance among underachievers. "Motivational factors" have been hypothesized as mediating variables by many (Abel, 1966; Angers, 1961; Demitroff, 1974; Hackman & Dysinger, 1970). These studies have all suggested that "motivational" factors are significant moderators of academic achievement.
However, "motivation" was alternately operationally described as a commitment to college, clear cut goals, certainty of goals, and desire to perform well academically. Edwards and Waters (1981) found a significant difference between high and low achievement motivation and grade point average. Romine and Crowell (1981) found significant correlations between achievement motivation and academic performance but not between motivation to succeed and academic performance. In fact, the latter correlation was in a negative direction. Other studies (Pantages & Creedon, 1978) indicated that motivation was not a major factor in retention and attrition. Hoffman, Ganz, and Dorosin (1974) suggested that dropouts may leave college believing that leaving is useful and beneficial and that those students are exhibiting goal orientation, commitment, and motivation when they leave.

Successful efforts have been made to associate study habits and study attitudes with academic performance (Capella, Wagner, & Kusmierz, 1982), anxiety to academic performance (Bendig & Klug, 1956; Chandler, Cosner, & Spies, 1979; Matarazzo, Ulett, Guze, & Saslow, 1954), locus of control to academic performance (Edwards & Waters, 1981; Morris & Carden, 1981), attributions, perceived helplessness, and perceived control (Forsyth & McMillan, 1981). In a 1976 study (Husband), dropouts more often thanpersisters had no "significant other."
Skeptical Approaches

Some researchers have encouraged further study of nonintellective mediators of academic success and others appeared skeptical about the usefulness of further work in this area.

Both Peterson (1963) and Pantages & Creedon (1978) appeared skeptical about the researcher's ability to isolate personality variables which moderate academic achievement. Peterson (1963) cautioned against assuming a commonality of makeup of the underachiever. Pantages and Creedon (1978) believed that even with better measurement techniques, personality traits may not be predictive of achievement and persistence. On the other hand, researchers like Stein (1963) recommended studies of personality characteristics as a supplement to use of purely intellective predictors. Romine and Crowell's (1981) results caused them to posit that marked differences in achievement among groups of equivalent academic aptitude are associated with intellective factors. DeBoer (1981) recommended that prediction studies continue to consider factors within the college environment that interact with traditional predictors of academic success.

Foshay and Misanchuk (1981) tempered their skepticism about research with underachievers with advice for future researchers. They decried the lack of systematic exploration which is model-based, calling most existing research an atheoretical "shotgun" approach. These authors suggested that the lack of evidence of effect of personality variables indicated that some of them may have to be

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operationalized differently. These authors also cautioned that when interpreting the results of multiple regression, the possible confounding effects of covariance must be kept in mind. They suggested checking the interpretations of stepwise regression results by systematically varying the sequence of entry of variables. Foshay and Misanchuk also agreed with other authors cited that improved measures of personality traits are clearly needed.

Summary

The literature addressing prediction of academic success among underachievers was characterized by certainty that intellective factors predict grades better than any formula yet developed. Although many have attempted to predict academic performance using nonintellective factors, results have been disappointing and contradictory. Critics of existing studies seemed to believe that issues such as inappropriate instrumentation, lack of theoretical base, vague definitions of variables, and errors in designs may have been responsible. Both enthusiasm and skepticism existed for future research into nonintellective mediators of academic success.
CHAPTER III

METHODS

Sample

Although previous academic performance is the best single predictor of college grades in normally achieving subjects, differences in performance occurring in an academically underachieving group are not easily predicted. In such a group, differences in performance cannot only be assigned to academic factors. For this reason and because the current interest of higher education lies in retention of at-risk students, subjects from the Alpha program for underachieving high school students entering Western Michigan University comprised the population for this study.

The Alpha program was begun in the fall of 1979. Rationale for the program was that a student with a low HSGPA but relatively high ACT scores might be successful in college. This thinking was based on the assumption that ACT is a better predictor of college success than high school grades. Since then, this assumption has been challenged by Alpha data (Bunda & Halderson, 1983). Admission to the Alpha program requires an academic HSGPA of from 2.0 to 2.29, from 1 to 1.5 standard deviations below the national mean of 2.95 and slightly below the university requirement of 2.3. A minimum composite ACT score of 15, half a standard deviation below the national mean, is also required. Students who do not meet these standards are
sometimes admitted if a student presents a higher than usual HSGPA but an ACT lower than 15 or a particularly high ACT with lower than desired HSGPA.

Some studies showed that special programs for underachievers entering college increased participant's academic performance significantly when compared with control groups not receiving the program (Hendrix, 1965; Hummel, 1966; Rose, 1965; Stout, Thornton, & Russell, 1980). As is common with research in this area, other results indicated that special programs were of no help (Crites, 1979). Therefore, no evidence existed that students involved in special programs like Alpha are significantly affected by the Alpha experience per se.

A table of random numbers was used to collect a pooled group of 100 subjects for this study. Fifty were selected from the Year 1, 1982-1983, Alpha participants and another 50 were selected from the Year 2, 1983-1984, Alpha group. Subjects whose test results were invalid or unreliable were excluded from the sample. Of the 50 subjects randomly selected from Year 1 (1982-83), 10 were excluded because of invalid or unreliable test results. Of the 50 subjects randomly selected from Year 2 (1983-84), 3 were excluded because of invalid or unreliable test results. The pooled sample was comprised of 87 subjects, 40 from Year 1 and 47 from Year 2. To assess similarity between the total Alpha population and the sample used in this study, student information was obtained from the Department of Special Programs which administers the Alpha program.

The 87 students selected from 1982-83 and 1983-84 Alpha students were representative of the total Alpha population in measures of
HSGPA, ACT, sex ratio, and college GPA. The work of Bunda and Halderson (1983) defined Alpha program entrant characteristics during the period from program inception in 1979 through 1982. The 286 program entrants in 1982 was triple the number of entrants in previous years and accounted for 8% of the entering fall first year students. The percentage of female students varied from a high of 42% in 1979 to a low of 24% in 1980 with values of 25% in 1981 and 35% in 1982. The sample of 87 students selected for this present study from 1982-83 and 1983-84 was similar to the total Alpha population at a ratio of 53:35, with men outnumbering women. Table 1 summarizes demographic data of all Alpha entrants and also of the sample selected for this study from year 1982-83 and year 1983-84.

Alpha students are consistent from year to year in HSGPA and ACT. The mean HSGPAs varied little among all Alpha years, ranging from 2.10 to 2.13. In the sample of 87 used in the present study, the pooled HSGPA mean was 2.10. In Year 1, 1982-83, of the sample, the mean was 2.12 and in Year 2, 1983-84, it was 2.08. Mean ACT composite scores for all Alpha years varied from a low of 15.84 in 1979 to a high of 19.75 in 1981. For this study's sample, the pooled ACT mean was 17.49. For Year 1, 1982-83, the mean ACT was 17.50 and for Year 2, 1983-84, it was 17.49. Table 2 presents a summary of intellectual data describing all Alpha students and students comprising the sample used in this study. In respect to HSGPA, ACT composite scores, and sex, the sample is highly similar to Alpha students in general.
Table 1

Demographics of All Alpha Entrants and of the Sample

<table>
<thead>
<tr>
<th>Admission year</th>
<th>Number admitted</th>
<th>Gender mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Alpha students (1982)</td>
<td>286</td>
<td>99 Female 187 Male</td>
</tr>
<tr>
<td>All Alpha students (1981)</td>
<td>86</td>
<td>22 Female 64 Male</td>
</tr>
<tr>
<td>All Alpha students (1980)</td>
<td>93</td>
<td>22 Female 70 Male 1 Missing</td>
</tr>
<tr>
<td>All Alpha students (1979)</td>
<td>100</td>
<td>42 Female 58 Male</td>
</tr>
<tr>
<td>Present sample (Year 1, 1982-83, and Year 2, 1983-84)</td>
<td>87</td>
<td>35 Female 53 Male</td>
</tr>
</tbody>
</table>

Bunda and Halderson (1983) found that, unlike the typically achieving entering student body, correlations between Alpha students' HSGPA and ACT scores were low and often negative. This phenomenon again underlined the uselessness of academic criteria to predict success in underachieving students. In 1979, the negative correlation of -.45 between HSGPA and ACT composite scores was significant at $\alpha = .05$. For the sample used in this study, the correlation between HSGPA and ACT was also negative at -.27. Table 2 presents the correlations between HSGPA and ACT scores.

Bunda and Halderson's (1983) data revealed little difference among college academic success during the first 4 years of Alpha.
Mean grade point averages varied by less than one-third of an honor point among the four groups, suggesting that Alpha students were consistent in academic performance across groups. Table 3 summarizes first-year college GPAs for all Alpha students and for the sample group used in the present study.

For all Alpha students, prediction of first-year college achievement based on high school achievement (HSGPA) and ACT composite scores was impossible. The best effort was a prediction that accounted for 12% of 1981 entrants' variance (Bunda & Halderson, 1983). For the total university population, the multiple R for prediction of first-year college grades was .46 with a multiple

---

**Table 2**

<table>
<thead>
<tr>
<th>Entry year</th>
<th>Mean HSGPA</th>
<th>Mean composite ACT</th>
<th>( r_{\text{HSGPA/ACT}} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>2.10</td>
<td>18.13</td>
<td>-.05</td>
</tr>
<tr>
<td>1981</td>
<td>2.12</td>
<td>19.75</td>
<td>.16</td>
</tr>
<tr>
<td>1980</td>
<td>2.13</td>
<td>19.71</td>
<td>.19</td>
</tr>
<tr>
<td>1979</td>
<td>2.13</td>
<td>15.84</td>
<td>-.45*</td>
</tr>
<tr>
<td>Pooled sample</td>
<td>2.10</td>
<td>17.49</td>
<td>-.27</td>
</tr>
<tr>
<td>Year 1 (1982-83)</td>
<td>2.12</td>
<td>17.50</td>
<td></td>
</tr>
<tr>
<td>Year 2 (1983-84)</td>
<td>2.08</td>
<td>17.49</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .05 level.
Table 3
Summary of College GPA of All Alpha Students and of the Sample

<table>
<thead>
<tr>
<th>Entry year</th>
<th>Number enrolled</th>
<th>Mean cumulative GPA (after 1 year of college)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>264</td>
<td>2.18</td>
</tr>
<tr>
<td>1981</td>
<td>79</td>
<td>2.35</td>
</tr>
<tr>
<td>1980</td>
<td>87</td>
<td>2.32</td>
</tr>
<tr>
<td>1979</td>
<td>89</td>
<td>2.41</td>
</tr>
<tr>
<td>Sample</td>
<td>87</td>
<td>Pooled 2.45</td>
</tr>
</tbody>
</table>

Year 1 (1982-83) 2.43
Year 2 (1983-84) 2.47

Coefficient of determination of .21. These figures suggested that the formulas used to predict academic performance of typical achieving students are not applicable to Alpha students. See Table 4 for a summary of predictions of Alpha groups' college GPA (Bunda & Halderson, 1983).

The study was described to Alpha students selected from Year 1, 1982-83, and Year 2, 1983-84, at their fall group meetings so all were informed about their possible selection for participation and about the research goals.
Table 4
Prediction Equations for All Alpha Students Using HSGPA to Predict College Grades

<table>
<thead>
<tr>
<th>Year</th>
<th>Beta weights</th>
<th>R</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>Fall GPA = 0.076 COMP ACT + 0.060 HSGPA</td>
<td>0.100</td>
<td>0.010</td>
</tr>
<tr>
<td>1981</td>
<td>Fall GPA = 0.358 COMP ACT - 0.049 HSGPA</td>
<td>0.350</td>
<td>0.125</td>
</tr>
<tr>
<td>1980</td>
<td>Fall GPA = 0.150 COMP ACT + 0.110 HSGPA</td>
<td>0.176</td>
<td>0.030</td>
</tr>
<tr>
<td>1979</td>
<td>Fall GPA = 0.309 COMP ACT + 0.090 HSGPA</td>
<td>0.280</td>
<td>0.078</td>
</tr>
</tbody>
</table>

During individual visits to their Alpha counselors, participants completed the MAPI-G. Test forms were inserted into student folders of those participating by Alpha personnel so counselors had the form when the students appeared for scheduled appointments. Again at that time, students were reminded of the purpose of the study and of confidentiality. Although selected students were told they could refuse participation, none did so. After completing the MAPI-G, students were not contacted again concerning this study. After all test forms were collected, MAPI-G results were scored using an automated computer interpretation by Interpretive Scoring Systems of National Computer Scoring (NCS).
Other data were collected from various record keeping offices at Western Michigan University. HSGPA and ACT data were acquired from the student files of the Admissions Office. College GPA data were supplied by the Office of Academic Records.

Instrumentation

The major instrument employed in this research was the MAPI-G, based on the work of Milon (1969, 1977, 1981; Milon, Green, & Meagher, 1982) who construes personality globally and provides instrumentation which is designed for the purposes of assessing the functioning of adolescents in normal life tasks such as education. According to Milon (1981), typological modes are the preferred model for representing personality syndromes. It is the process of assigning a central core of stable behaviors which distinguishes Milon's typology from theorists who construe personality as categories composed of trait dimensions. Thus, a personality type subsumes and integrates psychologically covariant traits that represent a set of correlated habits that, in turn, stand for a response displayed in a variety of situations. Typologies integrate the personality by unifying diverse elements into a single syndrome. This model gives personality coherence or a global temporal stability and cross-situational consistency. Milon's (1981) conceptualization of personality can be summed up as follows:

Each individual possesses a small and distinct group of primary traits that persist and endure and exhibit a high degree of consistency across situations. These enduring (stable) and pervasive (consistent) characteristics are what we mean when we speak of personality. (p. 23)
Several main distinctions may be drawn from this theoretical model:

1. People may be differentiated by whether their main source of reinforcement comes from within themselves or from others. These are classified as dependent or independent patterns or as an ambivalent pattern which wavers between source of reinforcement or as a detached pattern which has diminished ability to feel pleasurable and painful reinforcers.

2. People elicit reinforcements in one of two ways, actively or passively. Using these classical polarities as a basis, Millon (1969) derived a classification that combined in a four-by-two matrix the dependent, independent, ambivalent, and detached styles with activity-passivity factors. The result is eight basic personality types which, incidentally, correspond closely to the official American Psychiatric Association's Diagnostic and Statistical Manual-Third Edition (DSM-III) personality disorders (Spitzer, 1980). This coincidence is not surprising when one notes that Millon was a member of the task force which developed the DSM-III.

Millon's typology is firmly embedded in the assumption that personality styles develop over time based on biological, hereditary, environmental, and developmental factors. These eight basic personality styles are labeled submissive, gregarious, narcissistic, aggressive, conforming, negativistic, asocial, and avoidant (Millon, 1969, 1981) and are strengthened and perpetuated by repetitive experiences, reciprocal reinforcement, social stereotyping, self-perpetuation, protective constriction, and perceptual and cognitive
distortion.

When the styles become rigid and inflexible, psychopathology results, with deterioration occurring along predictable paths so that any given personality style can be expected to deteriorate in a predictable direction toward a predictable psychopathology. The detached and ambivalent styles are construed as less adaptive for functioning in life's tasks and the dependent and independent styles are construed as more adaptive. Because of societal values, women who are sociable and cooperative are thought to be more successful and the confident and forceful styles are considered more adaptive for men. A summary of Millon's model is presented in Appendix B. As Millon (1981) cautioned those using his model: "The reader should approach them as propositions to be sustained in future research" (p. 104). The historical roots of the model and its adherence to the well-known DSM-III typologies give promise that these eight personality types described global and universal styles of behaving and can be used by those who would study normal populations, as well as abnormal populations, in any chosen environment. Thus, Millon's theory offered a promising operationalization of "personality" for this study. The existence of several instruments, including one designed for use with adolescent populations in an academic setting, further deserves note (Millon et al., 1982).

The MAPI-G is based on the above cited theory of Millon and is an empirically developed assessment tool which is available in Clinical Report or Guidance Report form. In this study, the Guidance form was used because of its academic emphasis. Designed for educators,
it identifies individual styles of self-expression and scholastic behavior and identifies potential problem areas. The MAPI-G provides scores on 20 scales in three broad categories of assessment: personality style, expressed concerns, and behavioral correlates.

Millon's eight basic personality styles are assessed and categorized into eight basic adolescent coping styles: introverted, inhibited, cooperative, sociable, confident, forceful, respectful, and sensitive. Eight further measures identify the intensity of adolescent expressed concerns about significant aspects of life: self-concept, personal esteem, body comfort, sexual acceptance, peer security, social tolerance, family rapport, and academic confidence. Four measures assess behavioral correlates: impulse control, societal conformity, scholastic achievement, and attendance consistency. The MAPI-G consists of 150 true-false items, is geared to sixth-grade reading ability, and takes approximately 20 minutes to complete. Appendix C further explains MAPI-G personality styles.

Validation of the MAPI was an ongoing process involved in all stages of test construction. Because the test is new, little research has been reported although numerous studies are currently underway (Millon et al., 1982). However, the theories upon which it is based have been well validated and the test has been empirically constructed with developmental validation in mind (Millon et al., 1982). Developmental validation can best be conceived of as composed of three component types of validity: substantive, structural, and external. In regard to theoretical-substantive validation, a pool of over 1,000 items was gathered from numerous psychological sources and
written specifically for the item pool. Items were balanced so a true response signified the style of attitude in half of the items while a false response did so in the other half. Eight professionals deleted items from the pool according to the predetermined criteria. At least six judges were needed for "agreement."

In regard to internal-structural validation, to achieve congruence with the underlying theoretical model, the pared-down pool of 289 items was administered to 2,500 people in a variety of settings, with the majority being students at urban universities. At the completion of this validating process, the median biserial correlations for all items in the personality scales was .47. And, 64 items from the provisional list of 289 were retained and formed the core items assessing personality styles.

External criterion validity was begun when the final list of 150 items was administered to a large number of school and mental health settings to develop a series of empirically derived scales. Counselors, psychologists, and social workers were used as judges to compare test results with other clinical evidence using groups with which they were familiar. Accurately completed judgment ratings and matched MAPI test forms were received for 430 adolescents. Twenty primary criterion groups were constructed to correspond to the 20 scale categories. Each of the study's 430 subjects were placed into several of these criterion groups to reflect the multiple diagnoses of their counselors and clinicians. Point biserial correlations between each of the 150 items and all scales were recalculated and items which showed high correlations with any scale other than a
theoretically incompatible one were added to that scale.

Test-retest reliability was tested with two separate groups of adolescents, one retaking the test after 5 months and the other after a period of 1 year. Since all involved in the study were also involved in active therapy during the interval between testing, results may be somewhat contaminated by changes wrought by therapy and also by the fluidity of concerns typifying this age group. Coefficients for the 5-month retest group ranged from a low of .53 on social tolerance to a high of .82 on confident personality style. Of the 20 variables, 17 correlated on retest at better than .70. After 1 year, coefficients ranged from lows of .45 on attendance consistency and family rapport to a high of .75 on body comfort, the only coefficient to reach the .70s. Most correlations were in the .60s. In both groups, correlations between scores on personality styles were higher than correlations between scores on expressed concerns or behavioral correlates, indicating that basic personality measures are more consistent across time (Millon et al., 1982). Internal structure data on item overlap and scale intercorrelations indicate that the pattern and extent of joint keying on the 20 MAPI scales are consonant with the theoretical expectations. Consonant personality styles show overlap and disconsonant ones do not. Likewise, scale intercorrelations are consistent with the theory. High correlations exist among scales expected to demonstrate relationships.

The base-rate scores on all MAPI-G measures were used to standardize raw scores. To examine the construct that rigidity of personality style impedes functioning, scores on the eight personality
styles were also grouped according to absence of style (base-rate scores of 0-74), presence of style (base-rate scores of 75-84), and prominence of style (base-rate scores of 85 or higher), creating eight more independent variables using grouped scores. Variables representing grouped scores were also included for the expressed concerns and behavioral correlates with incidence of expressed concerns and behavioral correlates expressed as low, medium, or high.

Although the MAPI-G was correlated with other diagnostic inventories, results are not as relevant as non-test criteria because other commonly used diagnostic tests were not developed to be used with adolescents. Also, the MAPI-G often addresses different facets of similarly labeled concepts. Therefore, interpreting covariations is difficult. Appendix D is a sample of the MAPI-G test.
CHAPTER IV

RESULTS

The main purpose of this study was to identify a cluster of independent variables for prediction of academic success among under-achieving college students. The independent variables were HSGPA, ACT scores, and nonintellective factors such as personality styles, expressed concerns, and behavioral correlates measured by Millon's MAPI-G (Millon et al., 1982). The study also explored whether the sample population was similar to the normative population, and whether Millon's theory that rigidity of personality style and severity of expressed concerns and/or behavioral correlates are related to performance held true in the sample population (Millon, 1981).

This chapter defines the hypotheses under study and presents the findings of statistical analyses. Pearson product moment correlation coefficients were calculated in all correlational analyses. Scatter plots were first developed to gauge linearity. Factor analyses were employed to compare the two samples of Alpha students for similarities. In these analyses, $r \geq .707$ was required for significance in the belief that better than 50% of shared variance was a conservative approach to findings which would be useful to educators faced with making admission decisions or designing remedial programs. Step-wise regression procedures were employed to identify possible sets of predictor variables with the set of predictor variables systematically varied. Chi-square analyses were used to compare proportions
of the sample with proportions of the normative population. In these analyses, \( p \geq .05 \) was set as the level of significance.

Hypotheses

The hypotheses are presented below:

1. Use of HSGPA and ACT composite scores will not predict college GPA and, therefore, these variables cannot be useful in predicting college success.

   Null: There is no relationship between HSGPA, ACT scores, and college grades.

2. Alpha students who form this sample are similar from year to year in their personality styles, expressed concerns, and behavioral correlates (Millon et al., 1982).

   Null: There is no similarity among groups of Alpha students from year to year in loadings on variables in factor analysis.

3. Proportions for Millon's personality styles in this study's sample will differ from the normative population used to develop the MAPI-G (Millon et al., 1982).

   Null: There will be no differences at \( \alpha = .05 \) between the present sample and the normative population used in development of the MAPI-G in proportions for the eight personality styles (Millon et al., 1982).

4. A set of personality styles, expressed concerns, and behavioral correlates (Millon et al., 1982) will provide a significant amount of predictiveness for college GPA.

   Null: A set of personality style, expressed concerns, and
behavioral correlates will not provide a group of predictor variables to predict college GPA at \( \alpha = .05 \) or better.

5. Personality style is related to college GPA, so that Millon et al.'s (1982) personality styles can be used alone to predict college GPA.

Null: There is no significant relationship between college GPA and personality styles.

6. Millon's (1981) assumption that successful adaptation within certain personality styles is gender-specific will be supported by a positive relationship between college GPA and the cooperative and social personality styles for women and a negative relationship between confident and forceful personality styles for women.

Null: There will be no significant relationship between college GPA and the above mentioned personality styles for women.

7. Millon's (1981) assumption that successful adaptation within certain personality styles is gender-specific will be supported by a positive relationship between college GPA and the confident and forceful personality styles for men and a negative relationship between the cooperative and social personality styles for men.

Null: There will be no significant relationship between college GPA and the above mentioned personality styles for men.

8. Rigidity of personality is negatively related to college GPA.

Null: There is no significant relationship between rigidity of personality and college GPA.

9. Intensity of expressed concerns is negatively related to college GPA.
Null: There is no relationship between intensity of expressed concerns and college GPA.

10. Intensity of behavioral problems is negatively related to college GPA.

Null: There is no relationship between intensity of behavioral problems and college GPA.

Outcomes

**Hypothesis 1**

The null hypothesis that HSGPA and ACT composite scores will not predict college GPA was retained; HSGPA and ACT composite proved poor predictors of college GPA among Alpha students. For the pooled group, the relationship between college GPA and HSGPA was $r = .05$ and between college GPA and ACT composite score was $r = -.13$. Multiple $R = .13$ when HSGPA and ACT were both related to college GPA. Table 5 presents a summary of data analyses concerning relationships between HSGPA, ACT, and college GPA for both sample years and for males and females.

**Hypothesis 2**

Factor analysis procedures revealed considerable dissimilarity between the samples for Years 1 and 2 and, therefore, the null hypothesis that there is no similarity among groups of Alpha students was retained. A conservative approach to loadings was taken with $r = \pm .707$ set as the level for inclusion of variables in factors.
When comparing Years 1 and 2 and the pooled groups of Years 1 and 2, no common variables were loaded on any factor with an _r_ of ±.707 or more, suggesting that the two groups are highly dissimilar on characteristics measured by this study.

Table 5
Relationship Between HSGPA, ACT, and College GPA for Alpha Sample

<table>
<thead>
<tr>
<th></th>
<th>HSGPA (r)</th>
<th>ACT (r)</th>
<th>HSGPA &amp; ACT (R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>College GPA pooled sample</td>
<td>.05</td>
<td>-.13</td>
<td>.13</td>
</tr>
<tr>
<td>College GPA female</td>
<td>-.25</td>
<td>-.01</td>
<td>.07</td>
</tr>
<tr>
<td>College GPA male</td>
<td>-.02</td>
<td>.21</td>
<td>.03</td>
</tr>
<tr>
<td>College GPA Year 1 female</td>
<td>.06</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>College GPA Year 1 male</td>
<td>-.13</td>
<td>-.31</td>
<td></td>
</tr>
<tr>
<td>College GPA Year 2 female</td>
<td>-.13</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>College GPA Year 2 male</td>
<td>.18</td>
<td>-.07</td>
<td></td>
</tr>
</tbody>
</table>

Within the two sample groups, factor analyses revealed intra-group clusters. For Year 1 Alpha students, loadings for Variables 9, confident personality style base-rate score, and 29, confident personality style grouped score, on Factor 1 were negative at -.707 or more and loadings for Variables 14, personal esteem expressed concern; 15, body comfort expressed concern; 16, sexual acceptance expressed concern; and 17, peer security expressed concern, were positive at .707 or greater. Factor 1 suggests that Year 1 Alpha
students scored low on measures of confident personality but had high concerns about personal esteem, body comfort, sexual acceptance, and peer security. On Factor 2 loadings for Variables 12, sensitive personality style; 23, scholastic achievement behavioral correlate; 26, inhibited personality style; and 34, behavioral correlates, were negative at -.707 or more suggesting that these students had few behavior problems, were not concerned about scholastic achievement, and exhibited few sensitive personality traits. Factor 3 indicated that Year 1 students were cooperative, conforming, sociable, and tolerant. Loadings on Variables 7, cooperative personality style, and 27, cooperative personality style, for Factor 3 were .89 and .75. Loadings for Variables 10, forceful personality style; 18, social tolerance expressed concern; and 22, social conformity behavioral correlate, were negative at -.707 or greater.

Year 2 Alpha students appeared to be sociable and confident. Loadings for Variables 8, sociable personality style; 9, confident personality style base-rate score; 28, sociable personality style; 29, confident personality style grouped score; and 35, year, were all positive at \( r = .707 \) or better. Students from this group had few behavioral problems and expressed few concerns. They were cooperative and scored low on the forceful personality scale. Loadings for Variables 10, forceful personality style; 18, social tolerance expressed concern; 19, family rapport expressed concern; 21, impulse control behavioral correlate; 22, social conformity behavioral correlate; 30, forceful personality style; and 34, behavioral correlates,
were all -.707 or greater; and for Variable 7, cooperative personality style, the loadings were positive at .75, all on Factor 2.

**Hypothesis 3**

The null hypothesis that there is no difference between the present sample and the normative population in proportions for personality styles was rejected at $\alpha = .05$ in several of the chi-square tests of goodness of fit between percentages of personality styles in the sample population and in the normative population of Millon et al. (1982). Apparently, the sample used in this study was quantitatively different from the normative population, both for men and for women. Chi-square tests were calculated on each of the eight personality styles hypothesized by Millon et al. (1982) for both men and women. Table 6 presents chi-square data. Percentages were compared in keeping with Hopkins-Glass's (1978, p. 312) work on goodness of fit.

Results indicated that women in the present sample exhibited less evidence of cooperative personality style than was true for the normative population; however, those in the sample who were cooperative were more rigidly cooperative than those in the general population. Results were significant at $\alpha = .01$.

Many more women in the sample were sociable than in the normative population. Also, this style of behaving is the most dominant feature in their personalities in larger proportion than is true in the normative population. In this sample, almost half of the women are highly sociable as compared to one-tenth of the normative group.
Table 6

Chi-Square Comparisons of Percentages of Personality Styles in Sample and Population

<table>
<thead>
<tr>
<th>Personality style</th>
<th>Females</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Males</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normative</td>
<td>Present</td>
<td>Sig.</td>
<td></td>
<td></td>
<td>Normative</td>
<td>Present</td>
<td>Sig.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>population</td>
<td>sample</td>
<td></td>
<td></td>
<td></td>
<td>population</td>
<td>sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BR75 (%)</td>
<td>BR85 (%)</td>
<td>BR75 (%)</td>
<td>BR85 (%)</td>
<td></td>
<td>BR75 (%)</td>
<td>BR85 (%)</td>
<td>BR75 (%)</td>
<td>BR85 (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introversion</td>
<td>12</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td></td>
<td>15</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhibited</td>
<td>17</td>
<td>10</td>
<td>3</td>
<td>3</td>
<td></td>
<td>17</td>
<td>8</td>
<td>9</td>
<td>15</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperative</td>
<td>28</td>
<td>12</td>
<td>6</td>
<td>12</td>
<td>**</td>
<td>19</td>
<td>7</td>
<td>25</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociable</td>
<td>19</td>
<td>10</td>
<td>21</td>
<td>41</td>
<td>*</td>
<td>18</td>
<td>11</td>
<td>19</td>
<td>21</td>
<td>***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confident</td>
<td>15</td>
<td>7</td>
<td>32</td>
<td>24</td>
<td></td>
<td>21</td>
<td>6</td>
<td>6</td>
<td>26</td>
<td>***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forceful</td>
<td>14</td>
<td>6</td>
<td>0</td>
<td>14</td>
<td>***</td>
<td>22</td>
<td>8</td>
<td>13</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respectful</td>
<td>16</td>
<td>10</td>
<td>29</td>
<td>12</td>
<td></td>
<td>15</td>
<td>5</td>
<td>8</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitive</td>
<td>16</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>*</td>
<td>12</td>
<td>8</td>
<td>13</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. BR75 = Base-rate cutting point for presence of style. BR85 = Base-rate cutting point for prominence of style.

Chi square sig: *p < .05. **p < .01. ***p < .001.
Differences were significant at $\alpha = .01$.

Twice as many women in the sample as in the normative population are confident in personality style and three times as many women in the sample as in the normative group show this style as their most prominent personality trait. Differences between proportions were not, however, significant at the .05 level.

Women in the sample were significantly different from the normative population in forceful personality, exhibiting twice as high a proportion of prominence of this style but almost no presence of the style. In the general population, the proportion of presence to prominence was 14:6 presence to prominence, however; while in the sample, the ratio was 0:14. Women in this sample, therefore, may be considered more rigid in their demonstration of this personality style. Results were significant at the .001 level. However, a small $N$ renders the result useless for making generalizations.

Men in the sample reflected an inhibited personality style in almost opposite proportion to the normative population. The general population is more flexible, demonstrating higher incidences of presence and lower incidences of prominence. Men in the sample, if inhibited, were highly inhibited. Probability associated with this difference was .03.

Again, in exhibiting the confident personality style, men in the sample were highly rigid in this style. If they were confident, these traits were the most dominant features of their behavior pattern. Again, the normative group was much more flexible, exhibiting
presence more often than prominence. Differences were significant past the .01 level.

Hypothesis 4

The null hypothesis that a set of personality styles, expressed concerns, and behavioral correlates will predict college GPA was rejected; several combinations of personality style, behavioral correlates, and expressed concerns were identified which predicted college GPA. Numerous step-wise regression analyses were run using various combinations of independent variables according to the advice of Foshay and Misanchuk (1981). Analyses were run on the pooled sample, sample by year, and sample by sex. The best set of predictor variables for the pooled sample employed Variables 12, sensitive personality style; 13, self-concept expressed concern; 22, social conformity behavioral correlate; 25, introverted personality style grouped score; and 32, sensitive personality style grouped score. Based on this set, Alpha students' college GPA can best be predicted by measures of sensitive personality, self-concept, social conformity, and introversion. The multiple regression coefficient was .43; therefore, the coefficient of determination was .19. In this set of five predictor variables, four of the variables were significant at $p < .05$. The regression equation for prediction of future performance is: $\hat{Y} = 2.82 + .02X_1 - .01X_2 - .01X_3 + .31X_4 - .23X_5$.

Table 7 is a summary of step-wise regression analysis results.

In keeping with the results of factor analyses which showed Year 1 and Year 2 samples of Alpha students to be quite dissimilar,
Table 7
Step-Wise Regression Functions forPrediction of College GPA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standardized coefficient</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant = 2.821</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pooled sample (N = 87)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Sensitive (BR)</td>
<td>.1655 E-01</td>
<td>.82</td>
<td>.00</td>
</tr>
<tr>
<td>13 Self-concept (BR)</td>
<td>-.8392 E-02</td>
<td>-.42</td>
<td>.03</td>
</tr>
<tr>
<td>22 Social conformity (BR)</td>
<td>-.1429 E-01</td>
<td>-.50</td>
<td>.00</td>
</tr>
<tr>
<td>25 Introversive (GS)</td>
<td>.3096</td>
<td>.21</td>
<td>.04</td>
</tr>
<tr>
<td>32 Sensitive (GS)</td>
<td>-.2292</td>
<td>-.28</td>
<td>.11</td>
</tr>
</tbody>
</table>

Regression equation \( \hat{Y} = 2.82 + .02X_1 - .01X_2 - .01X_3 + .31X_4 - .23X_5 \)

|                                 |             |                          |             |
|                                 |             |                          |             |
| Constant = 2.460                |             |                          |             |
| Year 1 (N = 40)                 |             |                          |             |
| 4 Sex                           | -.1762      | -.18                     | .26         |
| 14 Personal exteem (BR)         | .1721 E-01 | .89                      | .01         |
| 17 Peer security (BR)           | -.1898 E-01| -.79                     | .00         |
| 25 Introversive (GS)            | .5794       | .48                      | .01         |
| 26 Inhibited (GS)               | 1.0030      | 1.28                     | .04         |
| 30 Forceful (GS)                | .2007       | .26                      | .19         |
| 31 Respectful (GS)              | .2002       | .32                      | .04         |
| 32 Sensitive (GS)               | -1.2270     | -1.53                    | .02         |

Regression equation \( \hat{Y} = 2.46 - .18X_1 - .02X_2 + .02X_3 + .58X_4 + 1.00X_5 + .20X_6 + .20X_7 = 1.23X_8 \)

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<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standardized Coefficient</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant = .958</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2 (N = 47)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Cumulative HSGPA</td>
<td>.9953</td>
<td>.30</td>
<td>.02</td>
</tr>
<tr>
<td>12 Sensitive (BR)</td>
<td>.1847 E-01</td>
<td>.93</td>
<td>.00</td>
</tr>
<tr>
<td>13 Self-concept (BR)</td>
<td>-.1627 E-01</td>
<td>-.76</td>
<td>.00</td>
</tr>
<tr>
<td>22 Social-conformity (BR)</td>
<td>-.1612 E-01</td>
<td>-.57</td>
<td>.00</td>
</tr>
<tr>
<td>25 Introverted (GS)</td>
<td>.8693</td>
<td>.48</td>
<td>.00</td>
</tr>
<tr>
<td>27 Cooperative (GS)</td>
<td>.2879</td>
<td>.39</td>
<td>.01</td>
</tr>
</tbody>
</table>

Regression equation \( \hat{Y} = .96 + .99X_1 + .02X_2 - .02X_3 - .02X_4 + .87X_5 + .29X_6 \)

Note. BR = Base-rate; GS = Grouped scores (grouped by absence BR 0-74, presence BR 75-84, prominence ≥ BR 85).

step-wise regression analyses identified different sets of predictor variables for the two groups. For Year 1, Variables 4, sex; 14, personal esteem expressed concern; 17, peer security expressed concern; 25, introverted personality style grouped score; 26, inhibited personality style grouped score; 31, respectful personality style grouped score; and 32, sensitive personality style grouped score, were all significant predictors generating an \( R = .60 \) and \( R^2 = .36 \).

For Year 2, Variables 2, cumulative high school GPA; 12, sensitive personality style; 13, self-concept expressed concern; 22, social conformity behavioral correlate; 25, introverted personality style grouped score; and 27, cooperative personality style grouped score,
were all significant predictors producing an $R = .70$ accounting for 49% of the shared variance. Year 1 students' college GPA can be predicted by measures of self-esteem, peer security, introversion, inhibited personality, respectful personality, and sensitive personality. Males have a somewhat better chance of academic success than females. The regression equation associated with Year 1 results is:

$$\hat{Y} = 2.46 - .18X_1 - .02X_2 + .02X_3 + .58X_4 + 1.00X_5 + .20X_6 + .20X_7 = 1.23X_8.$$  

Year 2 students' performance can be predicted by measures of HSGPA, sensitive personality, self-concept, social conformity, introversion, and cooperative personality. The regression equation associated with Year 2 results is: $$\hat{Y} = .96 + .99X_1 + .02X_2 - .02X_3 - .02X_4 + .87X_5 + .29X_6.$$

**Hypothesis 5**

No correlations of $r = \pm .707$ existed between any of the eight personality styles and college GPA or among personality styles when grouped as to absence, presence or prominence, and college GPA; therefore, the null hypothesis that personality style is not related to college GPA was retained. Correlations between college GPA and the basic personality styles were no better than $r = \pm .10$ when base-rate scores were used and $r = \pm .20$ when grouped scores were used.

When correlation coefficients between personality styles and college GPS were obtained by year and by sex, results for males of Year 1 gained a high of $r = -.12$. Comparing GPA with Variable 6, inhibited personality style, when base-rate scores were used and $r = .30$ on Variable 31, respectful personality style, when grouped
scores were used. For females of the same year, \( r = .30 \) on Variable 8, sociable personality style, when base-rate scores were used and \( r = .28 \) on Variable 28, sociable personality style, when grouped scores were used.

Looking at Year 2, male \( r \)'s achieved a high of \( r = .30 \) on Variable 7, cooperative personality style, and \( r = .30 \) on Variable 10, forceful personality style, when base-rate scores were used and \( r = .33 \) on Variable 31, respectful personality style, when grouped scores were used. Females of the same year achieved a high of \( r = .53 \) on Variable 7, cooperative personality style, and \( r = -.51 \) on Variable 10, forceful personality style, when base-rate scores were used and a high of \( r = .66 \) on Variable 25, introversive personality style, when grouped scores were used. Table 8 summarizes the correlations between personality style and college GPA.

**Hypothesis 6**

The null hypothesis that there is no significant relationship between college GPA and gender-specific personality styles for women was retained; no significant relationship existed between women's college GPAs and the personality styles considered by Millon (1981) to be associated with women's adaptability. In Year 1, coefficients for the styles construed as associated with successful functioning, cooperative, and sociable styles, were \( r = .16 \) and \( r = .30 \). Correlations with styles construed as less successful for women, confident and forceful styles, were \( r = .18 \) and \( r = -.17 \). Women in Year 2 achieved \( r = .53 \) and \( r = -.42 \) on the cooperative and sociable styles,
Table 8

Relationship Between Personality Styles and College GPA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pooled Sample</th>
<th>Year 1</th>
<th>Year 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td></td>
<td>$r$</td>
<td>$r$</td>
<td>$r$</td>
<td>$r$</td>
</tr>
<tr>
<td>5 Introversive (BR)</td>
<td>.06</td>
<td>-.04</td>
<td>-.06</td>
<td>.42</td>
</tr>
<tr>
<td>6 Inhibited (BR)</td>
<td>-.05</td>
<td>-.10</td>
<td>-.12</td>
<td>.07</td>
</tr>
<tr>
<td>7 Cooperative (BR)</td>
<td>.21</td>
<td>.16</td>
<td>.01</td>
<td>.53</td>
</tr>
<tr>
<td>8 Sociable (BR)</td>
<td>.05</td>
<td>.30</td>
<td>-.01</td>
<td>-.41</td>
</tr>
<tr>
<td>9 Confident (BR)</td>
<td>.05</td>
<td>.18</td>
<td>.09</td>
<td>-.16</td>
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<tr>
<td>10 Forceful (BR)</td>
<td>-.21</td>
<td>-.17</td>
<td>.02</td>
<td>-.51</td>
</tr>
<tr>
<td>11 Respectful (BR)</td>
<td>.17</td>
<td>.17</td>
<td>.06</td>
<td>.17</td>
</tr>
<tr>
<td>12 Sensitive (BR)</td>
<td>-.10</td>
<td>-.23</td>
<td>-.01</td>
<td>-.27</td>
</tr>
<tr>
<td>25 Introversive (GS)</td>
<td>.19</td>
<td>.12</td>
<td>.14</td>
<td>.66</td>
</tr>
<tr>
<td>26 Inhibited (GS)</td>
<td>-.08</td>
<td>-.01</td>
<td>-.06</td>
<td>-.28</td>
</tr>
<tr>
<td>27 Cooperative (GS)</td>
<td>.20</td>
<td>.06</td>
<td>.13</td>
<td>-.22</td>
</tr>
<tr>
<td>28 Sociable (GS)</td>
<td>.02</td>
<td>.28</td>
<td>.07</td>
<td>-.24</td>
</tr>
<tr>
<td>29 Confident (GS)</td>
<td>.05</td>
<td>.25</td>
<td>-.06</td>
<td>-.25</td>
</tr>
<tr>
<td>30 Forceful (GS)</td>
<td>-.16</td>
<td>-.05</td>
<td>.07</td>
<td>-.38</td>
</tr>
<tr>
<td>31 Respectful (GS)</td>
<td>.20</td>
<td>.15</td>
<td>.30</td>
<td>-.14</td>
</tr>
<tr>
<td>32 Sensitive (GS)</td>
<td>-.17</td>
<td>-.01</td>
<td>-.15</td>
<td>-.37</td>
</tr>
</tbody>
</table>

Note.  BR = Base-rate; GS = Grouped scores.
respectively. On the styles supposed to be less successful for women, in Year 2, coefficients were in the hypothesized direction but were nonsignificant at $r = -0.16$ and $r = -0.51$ on confident and forceful styles, respectively. Table 8 presents these relationships.

**Hypothesis 7**

The null hypothesis that there is no significant relationship between GPA and gender-specific personality styles for men was retained; no significant relationship existed between men's college GPAs and personality styles considered adaptive for men. In Year 1, coefficients for styles construed as successful for men (Millon, 1981), the confident and forceful styles, were $r = 0.10$ and $r = 0.02$, respectively. For the styles considered as less adaptive for men, the cooperative and sociable styles, $r$'s were 0.01 and -0.01, respectively.

Year 2 results for men on the confident and forceful styles were $r = 0.03$ and $r = -0.29$, respectively. On the cooperative and sociable styles, $r$'s were 0.30 and 0.06, respectively. These results were inconclusive but in some instances were in the opposite direction from the theory's hypotheses regarding successful styles for men. Table 8 presents relationships between personality style and college GPA.

**Hypothesis 8**

The null hypothesis that rigidity of personality style is not related to college GPA was retained; rigidity of personality style does not appear to be related to lower academic functioning as measured by college GPA. Grouped scores reflecting absence (0-74),
presence (75-84), and prominence of personality style (85 and up) (Millon et al., 1982) did not correlate at $r = \pm .707$ or greater with GPA on any of the eight basic personality styles. In the pooled sample, the best relationship was not in the expected negative direction which would indicate that less rigidity of style is related to higher GPA, but was positive at $r = .20$ between respectful personality style and college GPA, indicating that rigidity was related to higher grades.

**Hypothesis 9**

The null hypothesis that intensity of expressed concerns is not related to college GPA was retained; intensity of expressed concerns had no significant relationship with GPA at $r = \pm .707$. Theoretically, those with lower levels of concern over such items as self-concept, personal esteem, body comfort, sexual acceptance, peer security, social tolerance, family rapport, and academic confidence are less disturbed and are thus freer to perform better academically. Although 31 of 40 coefficients were in the expected negative direction, none reached the $r = \pm .707$ level. Among the pooled sample, the highest coefficient was $-.22$ between family rapport and GPA. However, most coefficients were in the $-.03$ to $-.17$ range. Of the eight expressed concerns, three coefficients were positive and all were well under $.10$.

Among Year 1 women, most coefficients were in the expected negative direction, ranging from $-.03$ on body comfort to $-.33$ on peer security. Among men of the same year, all coefficients were in a
negative direction, ranging from -.01 on sexual acceptance to -.22 on social tolerance.

In Year 2, most women's expressed concerns were negatively related to GPA, ranging from $r = .02$ on academic confidence to $r = -.41$ on personal esteem, $r = -.30$ on social tolerance, and $r = -.29$ on family rapport. Expressed concerns of Year 2 men also were mostly negatively related to GPA. Negative correlations ranged from $-.01$ on personal esteem to $-.32$ on family rapport. Table 9 summarizes the results of the correlations between expressed concerns and college GPA.

**Hypothesis 10**

The null hypothesis that intensity of behavioral problems is not related to college GPA was retained; intensity of behavioral problems such as impulse control, social conformity, scholastic achievement, and attendance consistency were not significantly related to academic achievement as measured by college GPA. Theoretically, the lower the level of behavioral problems, the less disturbed the individual and, therefore, the higher the potential for academic success.

Although 18 of 20 of the relationships obtained in this study were in the expected negative direction, i.e., lower levels of behavioral problems were related to higher college GPAs, the coefficients were well below the $r = ±.707$ cutting point established in the belief that 50% of shared variance is a conservative approach to meaningful findings.
Table 9
Relationship Between Intensity of Expressed Concerns and College GPA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pooled sample</th>
<th>Year 1 Females</th>
<th>Year 1 Males</th>
<th>Year 2 Females</th>
<th>Year 2 Males</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
</tr>
<tr>
<td>13 Self-concept</td>
<td>-.10</td>
<td>-.25</td>
<td>-.04</td>
<td>-.04</td>
<td>-.11</td>
</tr>
<tr>
<td>14 Personal esteem</td>
<td>.04</td>
<td>.10</td>
<td>-.03</td>
<td>-.41</td>
<td>-.01</td>
</tr>
<tr>
<td>15 Body comfort</td>
<td>.05</td>
<td>.03</td>
<td>-.04</td>
<td>.05</td>
<td>.14</td>
</tr>
<tr>
<td>16 Sexual acceptance</td>
<td>.04</td>
<td>.10</td>
<td>-.01</td>
<td>-.20</td>
<td>.12</td>
</tr>
<tr>
<td>17 Peer security</td>
<td>-.16</td>
<td>-.33</td>
<td>-.07</td>
<td>-.21</td>
<td>-.05</td>
</tr>
<tr>
<td>18 Social tolerance</td>
<td>-.17</td>
<td>-.06</td>
<td>-.22</td>
<td>-.30</td>
<td>-.20</td>
</tr>
<tr>
<td>19 Family rapport</td>
<td>-.22</td>
<td>-.10</td>
<td>-.17</td>
<td>-.29</td>
<td>-.32</td>
</tr>
<tr>
<td>20 Academic confidence</td>
<td>-.13</td>
<td>-.17</td>
<td>-.09</td>
<td>.02</td>
<td>-.19</td>
</tr>
</tbody>
</table>

For the pooled sample, all r's were negative, ranging from a low of -.07 on attendance consistency to a high of -.31 on social conformity. For Year 1, women's r's were all negative and ranged from -.18 on attendance consistency to a high of -.32 on social conformity. For men of this group, most relationships were again in a negative direction, ranging from r = .01 on attendance consistency to r = -.19 on social conformity. For Year 2, women's highest negative
coefficients were -.35 for impulse control and -.34 for attendance consistency. For men of the same year, all relationships were negative, ranging from -.05 on attendance consistency to -.42 on social conformity. Table 10 presents the results of correlations between behavioral problems and college GPA.

Table 10

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pooled sample</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Impulse control</td>
<td>-.23</td>
<td>-.23</td>
<td>-.13</td>
</tr>
<tr>
<td>Social conformity</td>
<td>-.31</td>
<td>-.32</td>
<td>-.19</td>
</tr>
<tr>
<td>Scholastic achievement</td>
<td>-.13</td>
<td>-.30</td>
<td>-.14</td>
</tr>
<tr>
<td>Attendance consistency</td>
<td>-.07</td>
<td>-.18</td>
<td>.01</td>
</tr>
</tbody>
</table>

Summary

In an attempt to generate a formula which would predict academic success among underachieving Alpha students, 10 hypotheses were addressed.

HSGPA and ACT scores proved to be poor predictors of college GPA among underachieving Alpha students. The highest relationship was...
These factors did not predict well for any subsection within the Alpha sample.

Among the Alpha sample, students from Years 1 and 2 were dissimilar on the measures employed in this study. Few Year 1 students were confident in personality style; they admitted few behavior problems; were cooperative, conforming, sociable, and tolerant; but expressed high concerns about personal esteem, body comfort, sexual acceptance, and peer security. Year 2 students also admitted few behavioral problems and were cooperative. These students, however, were not concerned about personal or social issues and were low in forceful personality traits.

The students in this study deviated significantly from the normative group representing the general population of adolescents in proportions of personality styles. The sample was more sociable than is the norm. Also, personality styles were more rigid among the sample than is the norm.

Several sets of predictive formulas were developed which predict these underachieving students' college grades in the $R = .43$ to $.70$ range. Because of the heterogeneity of Alpha students from Years 1 and 2, formulas differed for the pooled group, Year 1, and Year 2. For the pooled sample of Alpha students, college GPA can be predicted at $R = .43$ by using measures of sensitive personality, self-concept, social conformity, and introversion. For Year 1 students, $R = .60$ with measures of self-esteem, peer security, introversion, inhibited personality, respectful personality, and sensitive personality. For Year 2 students, $R = .70$ with measures of HSGPA, sensitive
personality, self-concept, social conformity, introversion, and cooperative personality.

No relationship existed between personality styles and college grades. Neither the styles considered by Millon (1981) as more adaptive or more maladaptive nor the styles considered by Millon to be more successful for men or women were related to college grades. Nor did rigidity of personality style appear to mediate college grades. No relationships of any strength could be found to support the contention that personality style per se is related to college grades among underachievers.

Although intensity of expressed concerns and behavioral problems were not related to college grades at significant levels, the results were suggestive of a negative relationship between expressed concerns and college grades. Behavior problems also were negatively related to college grades. Behaviors demonstrating social nonconformity were uniformly negative in their relationship to college grades.
CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Chapter V is organized as follows: (a) discussion and conclusions, (b) limitations of the study, (c) theoretical and practical implications, (d) recommendations for further research, and (e) summary.

Discussion and Conclusions

The purpose of this study was to determine whether the personality styles, expressed concerns, and behavioral correlates construed by Millon's (1969, 1977, 1981; Millon et al., 1982) theory of personality were mediators of academic success for a group of underachieving entering first year college students.

A goal of this study was to isolate a cluster of nonintellective factors associated with personality traits related to academic achievement in college which tends to occur frequently in underachieving students. Achievement of this goal would facilitate prediction of academic success among underachieving students entering college and would allow those associated with higher education increased accuracy in their admission decisions concerning this population. Such an achievement would also facilitate understanding of the psychological differences occurring between those who achieve normally and underachievers, giving clearer direction for planning remedial programs.

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This section includes a discussion of the findings of the 10 hypotheses addressed by this study. The hypotheses can be organized into three main issues: (a) personality style, expressed concerns, and behavioral correlates as mediators of academic success in underachieving college students; (b) "successful" personality styles as mediators of academic success in underachieving college students; and (c) differences between personality style in underachieving and normally achieving college students.

**Personality Style, Expressed Concerns, and Behavioral Correlates As Mediators of Academic Success in Underachieving College Students**

This study examined correlates between nonintellective variables and GPA to ascertain if GPA may be predicted from nonintellective variables. A set of predictor variables was developed which matched predictions of normally achieving students' academic performance based on the usual intellective factors. ACT literature (1981) reported predictions of normally achieving students' college GPAs at $R = .50$ to $R = .60$ using ACT composite scores and HSGPAs. ACT data were consistent with the general Western Michigan University (WMU) population data. According to Bunda and Haiderson (1981), $R = .46$ and $R^2 = .21$ using ACT and HSGPA for the total WMU student population. With underachieving samples, intellective factors historically have been poor predictors of college GPA (Beach, 1968; Lenning et al., 1980; Pantages & Creedon, 1978; Sawyer & Maxey, 1981; Stein, 1963). Predictive data for WMU Alpha students between 1979 and 1982 showed weak correlations between college GPA and HSGPA and ACT. The
best effort was a prediction that accounted for 12% of 1981 entrants' variance in college GPA (Bunda & Halderson, 1981). For the combined Alpha samples from Years 1 and 2 in this study, $R = .13$ and $R^2 = .02$ using HSGPA and ACT to predict first year college grades. These results are consistent with Beach's (1968) conclusions that HSGPA, SAT scores, and class rank are of no use in predicting college grades.

A regression equation was developed using nonintellective variables which accounted for 19% of the shared variance in academic performance of the pooled sample of Year 1 and 2 Alpha students. For the pooled sample the $R = .43$ was considerably greater than the $R = .13$ using HSGPA and ACT alone to predict grades and was within the range of predictive value achieved by ACT (1981) using ACT and HSGPA.

The predictive formula developed for the pooled Alpha sample utilized five variables measured by the MAPI-G: sensitive personality style (Variable 12), self-concept expressed concern (Variable 13), social conformity behavioral correlate (Variable 22), introversive personality style grouped score (Variable 25), and sensitive personality style grouped score (Variable 32). All except the grouped scores on sensitive personality style were significant at $p < .05$. Underachieving students who achieved higher college GPAs than their underachieving peers were more discontent, pessimistic, and moody; behaved more unpredictably; and experienced more guilt. Further, these students were more socially conforming, more introversive, more respectful, and had better self-concepts than their less successful underachieving peers. A more complete description of these personality styles may be found in Appendix C.
However, when the Alpha sample was analyzed by Years 1 and 2, prediction formulas differed, suggesting that the two samples cannot be viewed as similar when predicting academic success when using nonintellective variables. For the Year 1 Alpha sample, the best set of predictors of GPA was based on MAPI-G measures suggesting that successful students had fewer concerns about personal esteem (Variable 14), were more secure about peer relationships (Variable 17), were more introverted (Variable 25), more inhibited (Variable 26), and more respectful (Variable 31) than their less successful underachieving peers. This prediction formula for Year 1 Alpha students accounted for 36% of the shared variance of college GPA with $R = .60$ and thus was a considerable improvement over predicting this group's academic success using HSGPA and ACT which yielded an $R = .13$.

Regression equations yielded higher coefficients of determination for Year 2 Alpha students than for Year 1 subjects and greater than for the pooled sample. Prediction using HSGPA and five non-intellective factors measured by the MAPI-G produced an $R = .70$ and an $R^2 = .49$. These six variables were all significant ($p < .05$). The more successful Year 2 underachieving students had higher HSGPAs (Variable 2), were more sensitive (Variable 12), more introverted (Variable 25), more cooperative (Variable 27), had better self-concepts (Variable 13), and were more socially conforming (Variable 22) than their less successful peers.

Although most of the results of these step-wise regression analyses were statistically significant and appeared to predict college GPA better than previously developed methods, application of the
regression equations for prediction of future students' grades requires caution. The question of homogeneity among groups of underachieving college students must be addressed. Just as the step-wise regression results disclosed different predictive formulas applied to Years 1 and 2 Alpha students, factor analysis results showed the samples from Years 1 and 2 lacked homogeneity on the variables measured by this study.

Although Alpha students have appeared similar in HSGPA, ACT, and college GPA across groups (Bunda & Halderson, 1981), they were dissimilar on MAPI-G measures of personality, expressed concerns, and behavioral correlates. Factor analyses revealed that no common variables employed in this study were loaded on any factor at significant levels when the pooled sample made up of Years 1 and 2 subjects was analyzed. The lack of homogeneity between Year 1 and Year 2 samples on measures of nonintellective traits supported observations of other researchers who concluded that no consistent pattern of nonintellective factors is clearly associated with academic success (Astin, 1976; Goodstein et al., 1962; Lenning et al., 1980; Peterson, 1963). Lack of homogeneity may explain the conflicting results achieved by past studies and may account for the historic difficulty predicting academic success of underachieving students.

Therefore, the prediction formulas developed by this study must be applied with full realization that just as the two groups of Alpha students differed, future groups of Alpha students as well as other groups of underachievers may exhibit still different patterns of relationships between nonintellective variables and college GPA.
Personality style and academic performance were not related in this study. In fact, correlations between personality style and academic success were among the lowest of any relationships in this study, ranging from a high of $r = .21$ to a low of $r = .05$ for the pooled group of Years 1 and 2 Alpha students. These results may have been due to pooling of men's and women's scores. When taken by year and by sex, relationships between personality style and college grades were stronger, though none reached $r = \pm .707$. A strong relationship of $r = .53$ between the cooperative style and college GPA for women in Year 2 was offset by a low $r = .16$ between the same two factors for women in Year 1. These kinds of conflicting outcomes may have contributed to the weak relationships between personality style and academic performance.

The belief that personal concerns and worries or behavioral problems impede academic success was not supported by this study. Measures of relationships between intensity and number of expressed concerns and behavioral correlates as measured by the MAPI-G did not reach $r = .707$. However, of the 40 correlation coefficients generated in measuring relationships between expressed concerns and college GPA, 31 were in the predicted negative direction, suggesting that less intensity of worries is related, however weakly, to higher college GPA. Of the 20 coefficients produced when examining relationships between behavior problems and college GPA, 18 were negative, suggesting that fewer behavior problems are related to better college grades. Coefficients expressing the relationship between social conformity and college GPA were consistently greater than for
any other expressed concern or behavioral correlate. For Year 2 Alpha students, $r = -0.34$ for females and $r = -0.42$ for males. For the pooled group of Alpha students from Years 1 and 2, $r = -0.31$. Social conformity was also an additive factor which was significant at $\alpha = 0.05$ or greater in the predictive formulas generated by step-wise regression analyses developed by this study. These data suggest that among underachievers, those who do not perform well on college GPA may be unable or unwilling to comply with societal regulations. The social conformity scale also measures acting-out behaviors, impulsivity, delinquent behavior, poor family relationships, and turning away from acceptable achievements. These results showed traits similar to those found in Hummel's (1966) work distinguishing underachievers from overachievers by characterizing underachievers as hostile and negative in their interpersonal relations and having high independence-dependence conflicts.

"Successful" Personality Styles As Mediators of Academic Success in Underachieving Students

Millon's (1981) personality theory postulated that, of the eight basic personality styles, some facilitate successful accomplishment of life's tasks better than others. The results of this study failed to support these hypotheses. Of the eight styles, cooperative (termed submissive in Millon's 1981 work), sociable (gregarious in Millon's 1981 work), confident (narcissistic), and forceful (aggressive) personality styles were deemed the more "successful" styles. The detached styles, introversive (asocial), inhibited (avoidant),

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and the ambivalent styles, respectful (conforming) and sensitive (negativistic) are seen as impeding adaptive functioning.

Millon's (1981) theory postulated that women possessing traits associated with sociable and cooperative personality styles (Millon et al., 1982), labeled gregarious and submissive styles in Millon's (1981) original theory, would be more successful in life's endeavors than women with other styles or than men with these two styles. Likewise, the theory proposed that men possessing traits associated with the confident and forceful styles (Millon et al., 1982), labeled narcissistic and aggressive styles in Millon's (1981) original theory, would be more successful than men with other styles or than women with these two styles. Although no coefficients reached \( r = \pm .707 \), for women, cooperative personality style was associated with higher college GPA and forceful personality style was associated with lower GPA, results which were congruent with Millon's propositions. No clear relationships existed for the other propositions regarding successful styles for men and women. For Year 1 females, sociable traits were positively related to college GPA at \( r = .30 \). For Year 2 females, sociable traits were negatively related to college GPA at \( r = -.41 \). For men, personality style was not related to college GPA with coefficients ranging from \( r = .01 \) to \( r = .30 \).

"Successful" personality styles, as hypothesized by Millon (1981), appeared to be poor predictors of academic success in these underachieving college students.
Differences Between Personality Style in Underachieving College Students and the Normative Population

As compared to the normative group used in construction of the MAPI-G, the pooled Alpha sample was significantly more sociable and more rigid in their personality styles. Also, the proportions of what are construed by Millon et al. (1982) to be normal distributions of the various personality styles among the normal adolescent population do not hold in this group of 18 and 19 year old underachievers at WMU. The underachievers in this study displayed personality styles in proportions that were, in most cases, significantly different from those patterns Millon construes as "normal." According to test construction data (Millon et al., 1982), the MAPI-G normative group is representative of the adolescent population as a whole; therefore, analyses can be considered to compare normally achieving students with underachieving students. As Stein (1963), DeBoer (1981), and Lavin (1965) reported, each college setting is distinctive and student success may be in part determined by the "fit" between student and institution. Possibly, WMU students in general tend to differ from the general population of college students. A control group of normally achieving students at WMU was not employed in this study so comparison could be made of proportions of personality styles among underachieving and normally achieving WMU students. The fact exists, however, that this sample was different in personality style from the normative group.

Generally, both men and women in this sample are more rigid in their personality styles ($p \leq .05$). Millon (1981) postulated that
more rigid traits cause less successful functioning in life's tasks. Perhaps rigidity, no matter what personality style, is a key to underachievement. Although there are fewer cooperative women in the sample, when sample women are cooperative these are the most observable traits in their behavior. Women are also more rigidly sociable than in Millon et al.'s (1982) normative group at a ratio of 4 women from the sample to every 1 woman from the normative group. Forty-one percent of the entire female sample is rigidly sociable. Women who are confident are not only twice as apt as the norm to be confident, but they are also three times as apt to be rigidly confident. Men in the sample are more rigid in their inhibitions than are men in the average population. Likewise, confident men are more apt to express these traits as their most prominent behaviors.

Further, this sample is more sociable than is the normative population. Sixty-two percent of the women and 40% of the men in this sample are sociable in personality style as compared to 29% of women and 29% of men in the normative population. Both men and women in the sample were more rigidly sociable than the norm. Forty-one percent of the women in the sample exhibited sociability as a prominent or most observable trait of their behavioral pattern. One wonders if all this sociability doesn't interfere with studying; but within the sample population, no significant relationships existed between college grades and sociable style. This may be due to the fact that almost all Alpha students are so sociable that differences do not show up. Again, a comparison with normally achieving students is necessary to discover whether sociable style contributes to
underachievement; for within underachievement, the presence or prominence of sociable style does not appear to correlate with college grades. However, a social orientation to life was found related to underachievement by Hummel (1963), and Merrill and Murphy (1959) found underachievers to be "more affiliative."

Men and women in the study demonstrated a reversal from Millon et al.'s (1982) normative group on proportions of cooperative and confident personality style. Men in the sample were much more cooperative than is usual at a rate of 42% for the sample as opposed to 26% for the normative population. On the other hand, women in the sample were less cooperative than is usual at a rate of 18% for the sample and 40% for the normative group. The cooperative personality style is one construed by Millon (1981) as more "successful" for women than for men. However, in this study, more men were cooperative and fewer women demonstrated this style. Perhaps this reversal contributes to underachievement in a society which rewards cooperative traits such as soft-heartedness, kindly reactions to others, nonassertiveness, lack of initiative and leadership, and dependency in women and punishes men for these traits.

The confident style is construed by Millon (1981) as more successful for men than for women. Those who are confident in style are self-centered and egocentric. They are confident of their own worth and act assertively. These people tend to take others for granted and do not show much concern for the needs of others. Of the women in this sample, 56% were confident in personality style as compared to 22% of the normative group. Perhaps underachieving women are more
confident than the norm and perhaps these traits, successful in men, contribute to women's underachievement in a society which accepts these traits in men but not in women.

Limitations of the Study

This study was designed to develop a prediction formula for college grades of underachieving beginning college students. However, a systematic body of knowledge does not yet exist concerning nonintellective factors mediating underachievement in general. Nor does any clear consensus exist concerning nonintellective mediators of underachievement. Countless "nonintellective" variables exist. Choice of predictor variables was based on the desire to conduct a theory-based study on the recommendation of past literature (Foshay & Misanchuk, 1981; Peterson, 1963). One promising set of variables not included in this study are those associated with person-environment interactions.

The design of this study was descriptive; therefore, no causal interpretations of the data are possible. Relationships among variables were examined only in terms of degree and direction of association.

Sampling bias limits the generalizability of the results. The sample was drawn from a group of special program Alpha students from Western Michigan University in years 1982-83 and 1983-84. Alpha students may not be representative of groups of underachieving students admitted to special programs at other universities.
Alpha students' distribution on the personality styles measured by the MAPI-G are not similar to the distributions of the normal population on these personality styles. Therefore, a range restriction error may have occurred in the statistical analysis of scores. Scores of underachievers may have represented selected scores and may have been clustered in a restricted range of the normal distribution. If this kind of sampling bias existed, lowered correlation coefficients would result. Thus, the predictive power of the statistical analyses would be weakened.

Although the MAPI-G was normed on adolescents between the ages of 13 and 19, the 18 and 19 year olds who made up this study are at the higher ranges of the norm group. Perhaps age range norms for 18 and 19 year olds are needed to accurately compare this age group with its normative counterpart.

The number of women in the sample was too small to be adequately distributed among the basic personality styles. The number of women became too small when the male:female ratio in the sample was held the same as in the at large Alpha population. More women were lost because of unreliable or invalid MAPI-G profiles.

Administration of the MAPI-G occurred during the late fall and early winter terms of 1982-83 and 1983-84. After several months on campus, the college environment may have begun to alter students. Rather than seeing what traits the students brought to college, the study may have detected the effects of person-environment interactions. Thus, a true picture of underachievement as students entered college may have been lost.
If, as this study indicates, underachieving students are heterogeneous in their reasons for underachievement, prediction of academic performance of underachievers may be impossible using any set of independent variables. In the literature, Pantages and Creedon (1978) and Goodstein et al. (1962) reached this conclusion. Goodstein et al. suggested using homogeneous groups when searching for predictive formulas. Homogeneity of HSGPA and ACT may be less important for understanding underachievement than homogeneity of personality factors. Perhaps underachieving students need to be regrouped according to criteria other than high school achievement in order for significant research to occur.

Theoretical and Practical Implications

Based on criticisms of past researchers, this study attempted to address nonintellective mediators of academic performance from the viewpoint of a theoretical orientation. Also, an instrument compatible with both the theoretical orientation and the population under study was suggested by the literature. For this study, the biosocial learning theory of personality developed by Millon (1969, 1981) was selected because of its global, cross-situational nature. The theory seemed to address individual behavior at all levels of functioning including academic performance. It also appeared to encompass a wide enough variety of single traits into styles of personality which might be complex enough to explain phenomenon like underachievement. Further, instrumentation was available which was compatible with both the theory and the adolescent population under
study. The MAPI was based on Millon's theory and in its Guidance Form (MAPI-G) was developed for use in educational settings. Its stated purpose (Millon et al., 1982) is to identify, predict, and understand a wide range of psychological attributes characteristic of adolescents. One of its stated uses (Millon et al., 1982) is to help predict academic underachievement and attitudes toward academic achievement.

Results of this study failed to support many of the theoretical hypotheses of Millon's work. This study did not show that the personality styles considered as more adaptive for the general population or for men and women yielded better academic performance than styles considered more pathological or maladaptive. In fact, these styles did not seem to have any effect on college grades among the population of this study. However, in this underachieving population, Alpha women were more confident than the norm and Alpha men were more cooperative than the norm. Perhaps this role reversal contributes to underachievement in the first place. Confident women and cooperative men may not adapt as well as cooperative women and confident men in this society because of social reinforcement.

Millon's (1981) hypothesis that rigidity of style contributes to maladaptive functioning received some support. This population of underachievers was much more rigid in personality style than the normative group used in development of the MAPI-G. This normative group was considered a cross-section of the general adolescent population. If the normal population is less rigid in style than underachievers, perhaps it is rigidity which impedes adaptiveness and
flexibility. Lack of adaptiveness and flexibility may hold some back from achieving academically. When rigidity of style was correlated with college grades in this study, no relationships existed. Those underachievers who were more rigid in personality style did no worse than those underachievers who were less rigid in style. Perhaps underachievers in general are rigid in style. Because most underachievers are already rigid, differences in college grades based on rigidity would be difficult to detect statistically.

The theoretical contention that intensity or seriousness of concerns and/or maladaptive problems affect college grades seemed to hold true in this study but at levels which did not achieve statistical significance. On the whole, however, relationships between expressed concerns, behavioral correlates, and college GPA was in the expected negative direction. These results fit with Millon et al.'s (1982) contention that high scores on expressed concerns scales indicated that those areas in which scores were high represent unresolved problems which have a high probability of affecting feelings of the individual on a regular basis. High scores on the behavioral correlate scales indicate that the individual will demonstrate the designated behaviors regularly. These results also support the theories of other researchers (Capella et al., 1982; Forsyth & McMillan, 1981; Stern et al., 1956) who contended that the individual's inner tranquility, interpersonal relationships, attributions, and study habits influenced grades.

The supremacy of intellective factors in predicting college grades was not supported by this study. The work of Kibler (1981)
and Hills (1971) as well as ACT and SAT literature indicated that HSGPA and ACT were the best predictors of college GPA. Although these predictors may be accurate for normally achieving students, among the underachievers of this study, HSGPA and ACT scores were useless in predicting college grades. Perhaps the theory (DeBoer, 1981) that the college and high school environments must be similar in order to make accurate predictions of college grades based on HSGPA is an important factor in intellective as well as nonintellective mediation. That the social climate of the institution is an important variable was stressed by several researchers (Lavin, 1965; Lenning et al., 1980; Stein, 1963).

Practical implications for future Alpha student programming emerged from this study. Alpha students appeared to be much more highly social than is the norm. Alpha students with lower college grades did not conform well to societal rules or to authority. In planning Alpha programs, administrative personnel might use student sociability to promote attendance and motivate students who, because of their low achievement goals, are not motivated by promises of better grades, better jobs, or traditional ideas of "success." Group events could be advertised as social events and a social component could be built into each gathering. Settings which are not overly formal or authoritarian could be chosen for gatherings. Small group counseling rather than individual advising sessions would allow students to interact with peers rather than advisors who are considered authorities. Such small group counseling could address issues such as compliance, impulsivity, family problems, and personal goals—all
of which may be problem areas for those who score high on the social conformity behavioral correlate scale. Approaches to Alpha students should keep the power of authority in a low profile, should stress social contacts, should work at building rapport and trust between advisors and students, and should look for nontraditional ways to motivate.

Recommendations for Further Study

To test the value of the prediction formulas developed in this study, a longitudinal study of 3 or 4 years of WMU Alpha students is suggested. Before the formulas generated by this study can be used for admission purposes, their generalizability must be tested. Also, because of the dissimilarity of the two groups of Alpha students from Years 1 and 2, a longer period is necessary to study several years of Alpha students. Use of all three predictive formulas developed for the pooled group, Year 1, and Year 2 is recommended. It is also recommended that such a study address men and women in separate groups because of their dissimilarity of personality style.

The question of homogeneity is an especially important one to address. If groups of underachieving students are dissimilar from year to year, no predictor variables can ever be devised using the current labels of "underachiever" and "normal achiever." A longitudinal study of Alpha students would address the homogeneity problem.

One of the major conclusions of this study is that underachievers are different from Millon et al.'s (1982) normative group in personality style proportions. Before concluding that these
differences are related to underachievement and are not a phenomenon of WMU students in general, further research is necessary. A group of underachieving Alpha students could be compared with a control group of normally achieving WMU students for comparison of personality style proportions. Because assessing characteristics of underachievers was not a primary goal of this study, no control group was employed. However, the startling differences between the sample and the normative group provided the hypothesis that such factors as rigidity and sociability may mediate underachievement.

Social conformity appears to be a fruitful area for further study. Traits associated with the social conformity behavioral correlate scale of the MAPI-G may be associated with underachievement. Such factors as acting out or delinquent behaviors, impulsivity, poor family relationships, disregard for societal rules and regulations, authority problems, and disdain for acceptable achievements are recommended for further study as are associated traits suggested by the literature (Hummel, 1966), such as hostile and negative interpersonal relationships and high conflict over independence-dependence.

This study excluded institutional factors in an effort to be theory based. Also excluded were most demographic variables. However, these factors were postulated as significant to academic performance by several authors (Lavin, 1965; Lenning et al., 1980; Stern, 1963). Further studies are recommended with inclusion of demographic variables such as socioeconomic status, family rapport, race, and birth order. Recommended for inclusion are institutional variables such as extracurricular activities, college living.
arrangements, and relationships with faculty and advisors. A questionnaire is recommended to provide this data.
Appendix A

Dependent and Independent Variables
## Dependent and Independent Variables

<table>
<thead>
<tr>
<th>Variable #</th>
<th>Name of Variable</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GPA 1st two college semesters</td>
<td>Raw score</td>
</tr>
<tr>
<td>2</td>
<td>Cumulative high school GPA</td>
<td>Raw score</td>
</tr>
<tr>
<td>3</td>
<td>Score on ACT</td>
<td>Composite Score</td>
</tr>
<tr>
<td>4</td>
<td>Sex  Total females = 34  Males = 53</td>
<td>0 = male  1 = female</td>
</tr>
<tr>
<td>5</td>
<td>Introversive personality style</td>
<td>Base-rate scores</td>
</tr>
<tr>
<td>6</td>
<td>Inhibited personality style</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>7</td>
<td>Cooperative personality style</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>8</td>
<td>Sociable personality style</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>9</td>
<td>Confident personality style</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>10</td>
<td>Forceful personality style</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>11</td>
<td>Respectful personality style</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>12</td>
<td>Sensitive Personality Style</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>13</td>
<td>Self-concept expressed concern</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>14</td>
<td>Personal esteem expressed concern</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>15</td>
<td>Body comfort expressed concern</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>16</td>
<td>Sexual acceptance expressed concern</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>17</td>
<td>Peer security expressed concern</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>18</td>
<td>Social tolerance expressed concern</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
<tr>
<td>19</td>
<td>Family rapport expressed concern</td>
<td>&quot;  &quot;  &quot;  &quot;</td>
</tr>
</tbody>
</table>
Dependent and Independent Variables--Continued

<table>
<thead>
<tr>
<th>Variable #</th>
<th>Name of Variable</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Academic confidence expressed concern</td>
<td>Base-rate scores</td>
</tr>
<tr>
<td>21</td>
<td>Impulse control behavioral correlate</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>22</td>
<td>Social conformity behavioral correlate</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>23</td>
<td>Scholastic achievement behavioral correlate</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>24</td>
<td>Attendance consistency behavioral correlate</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>25</td>
<td>Introversive personality style</td>
<td>0 = base-rate 0-73</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = base-rate 74-83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = base-rate 84-120</td>
</tr>
<tr>
<td>26</td>
<td>Inhibited personality style</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>27</td>
<td>Cooperative personality style</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>28</td>
<td>Sociable personality style</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>29</td>
<td>Confident personality style</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>30</td>
<td>Forceful personality style</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>31</td>
<td>Respectful personality style</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>32</td>
<td>Sensitive personality style</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>33</td>
<td>Expressed concerns</td>
<td>Low (none higher than 73) = 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (1-2 over 73) = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (3 or more over 73) = 2</td>
</tr>
<tr>
<td>34</td>
<td>Behavioral correlates</td>
<td>Low (none higher than 73) = 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium (1 over 73) = 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High (more than 1 over 73) = 2</td>
</tr>
<tr>
<td>35</td>
<td>Year</td>
<td>Year = 1 (1982-83)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Year = 2 (1983-84)</td>
</tr>
</tbody>
</table>
Appendix B

Summary of Millon's Basic Personality Patterns

<table>
<thead>
<tr>
<th>Summary of Millon's (1969) Basic Personality Patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
</tr>
<tr>
<td>Asocial</td>
</tr>
<tr>
<td>Clinical picture</td>
</tr>
<tr>
<td>Apathetic, flat, colorless, dull, aloof</td>
</tr>
<tr>
<td>distant, unconnected, vague, impersonal,</td>
</tr>
<tr>
<td>impasive, complacent, irrelevant, unsponsive,</td>
</tr>
<tr>
<td>insensitive, uncommunicative.</td>
</tr>
<tr>
<td>Etiology and development</td>
</tr>
<tr>
<td>Passive infantile pattern, ectomorphic build,</td>
</tr>
<tr>
<td>limbic and reticular deficits, parasympathetic</td>
</tr>
<tr>
<td>dominance, synaptic dyscontrol.</td>
</tr>
<tr>
<td>Hypothesized biogenic factors</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Asocial and submissive styles are considered passive.</td>
</tr>
<tr>
<td>Avoidant and gregarious styles are considered active.</td>
</tr>
</tbody>
</table>
Summary of Millon's (1969) Basic Personality Patterns—Continued

<table>
<thead>
<tr>
<th>Hypothesized psychogenic factors</th>
<th>Detached</th>
<th>Dependent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Asocial</td>
<td>Avoidant</td>
</tr>
<tr>
<td>Impoverished sensory attachment stage, parental indifference, fragmented family communications.</td>
<td>Parental rejection or deprecation, peer group alienation.</td>
<td>Parental attachment and overprotection, competitive deficits among peers and sibs, adoption of social roles.</td>
</tr>
<tr>
<td>Distant: insensitive, imperceptive, and indifferent.</td>
<td>Aversive: hyperalert to avoid censure, derision and humiliation.</td>
<td>Complaint: abdicates responsibility and attaches self to others.</td>
</tr>
</tbody>
</table>

Asocial and submissive styles are considered passive. Avoidant and gregarious styles are considered active.
### Summary of Millon's (1969) Basic Personality Patterns—Continued

<table>
<thead>
<tr>
<th>Detached</th>
<th>Dependent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asocial</strong></td>
<td><strong>Avoidant</strong></td>
</tr>
</tbody>
</table>

**Intrapsychic processes**
- Impoverished intrapsychic world, minimal use of mechanisms.
- Cognitive interference, repression and disqualification of memories, thoughts and feelings.
- Identification, denial of autonomous impulses.
- Repression of contrary impulses, feelings of emptiness and social deceptions.

**Self-perpetuation of pattern**
- Impassivity, insensitivity, and infrequent social activities decrease opportunities for growth stimulation.
- Perceptual hyperalertness magnifies social rejection, cognitive interference alienates feelings of self, restricted social life precludes growth, fearful and suspicious behaviors evoke further rejection.
- Avoidance of competence activities and self-deprecation perpetuate and deepen image of incompetence, plaintive behavior provokes exasperation and rebuffs.
- Exteroceptive orientation results in scattered and unintegrated learning, massive repression retards inner growth, feltling attachments perpetuate search for new approvals.

Asocial and submissive styles are considered passive.
Avoidant and gregarious styles are considered active.
<table>
<thead>
<tr>
<th></th>
<th>Narcissistic</th>
<th>Aggressive</th>
<th>Conforming</th>
<th>Negativistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical picture</strong></td>
<td>Self-assured, haughty, spoiled, ungenerous, expansive, buoyant, optimistic, snobbish, boastful, immodest, pretentious, benigly arrogant, self-centered, disdainful, egocentric.</td>
<td>Hostile, vengeful, tough-minded, mistrustful, envious, sadistic, intimidating, controlling, fearless, unsentimental, competitive, power-oriented, vigorous, energetic, domineering.</td>
<td>Narrow-minded, over-controlled, conscientious, methodical, rigid, disciplined, grim, cheerless, austere, compulsive, respectful, ingratiating, prudent, proper, orderly, legalistic.</td>
<td>Unpredictable, erratic, indecisive, restless, impatient, resentful, testy, stubborn, impulsive, irritable, contrary, disgruntled, high-strung, oppositional, bitter, sullen, obstructive, pessimistic, complaining.</td>
</tr>
<tr>
<td><strong>Etiology and development</strong></td>
<td>No factors hypothesized.</td>
<td>Choleric or parmic infantile pattern, mesomorphic-endomorphic build, low reticular arousal threshold, limbic imbalances.</td>
<td>No factors hypothesized.</td>
<td>Irregular infantile pattern, uneven maturation, low neurological or physio-chemical arousal thresholds, extreme and short-lived hormonal changes among women.</td>
</tr>
</tbody>
</table>

Narcissistic and conforming styles are considered passive. Aggressive and negativistic styles are considered active.
### Summary of Millon's (1969) Basic Personality Patterns—Continued

<table>
<thead>
<tr>
<th>Hypothesized psychogenic factors</th>
<th>Independent</th>
<th>Ambivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narcissistic</td>
<td>Aggressive</td>
<td>Conforming</td>
</tr>
<tr>
<td>Parental overvaluation and indulgence, only child status.</td>
<td>Parental overcontrol by contingent punishment, guilt, and responsibility training.</td>
<td>Parental overcontrol by contingent punishment, guilt, and responsibility training.</td>
</tr>
<tr>
<td>Exploitive: presumptuous expectation of admiration and subservience from others.</td>
<td>Vindictive: dominates, controls, and intimidates others.</td>
<td>Respectful: avoids anxiety and conflict by propriety and rigid adherence to conventions.</td>
</tr>
</tbody>
</table>

Narcissistic and conforming styles are considered passive. Aggressive and negativistic styles are considered active.
**Summary of Millon's (1969) Basic Personality Patterns—Continued**

<table>
<thead>
<tr>
<th>Independent</th>
<th>Ambivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narcissistic</td>
<td>Aggressive</td>
</tr>
</tbody>
</table>

**Intrapsychic processes**
- Gratification by fantasy, repression, rationalization and projection of deficiencies.
- Weak intrapsychic controls, rationalizes and projects sadistic impulses.
- Intrapsychic overcontrol, transforms contrary impulses by identification, sublimation, reaction formation, isolation and undoing.
- Lack of intrapsychic controls, impulses "acted out," alternates between projection and intrajection.

**Self-perpetuation of pattern**
- Illusion of competence inhibits growth efforts, lack of self-controls lead to reality distortion, ungenerous behavior provokes social alienation.
- Perceives hostility where none exists; rejects affection and cooperative experience, provokes conflict and hostility.
- Rigidity, internalized guilt and pursuit of restraining regulations preclude opportunities for change and growth.
- Erratic and negativistic behaviors provoke inconsistent and rejecting reactions, anticipates and precipitates disappointments, creates unresolvable conflicts.

Narcissistic and conforming styles are considered passive.
Aggressive and negativistic styles are considered active.
Appendix C

MAPI-G Personality Styles

MAPI-G Personality Styles

<table>
<thead>
<tr>
<th>Passive</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>Introverted</td>
</tr>
<tr>
<td>(Asocial)</td>
<td>(Avoidant)</td>
</tr>
<tr>
<td>Dependent</td>
<td>Cooperative</td>
</tr>
<tr>
<td>(Submissive)</td>
<td>(Gregarious)</td>
</tr>
<tr>
<td>Independent</td>
<td>Confident</td>
</tr>
<tr>
<td>(Narcissistic)</td>
<td>(Aggressive)</td>
</tr>
<tr>
<td>Ambivalent</td>
<td>Respectful</td>
</tr>
<tr>
<td>(Conforming)</td>
<td>(Negativistic)</td>
</tr>
</tbody>
</table>


Scale Characteristics

Scale 1: Introverted (31 items)

High scorers tend to keep to themselves, appearing rather quiet and unemotional. They are even-handed, fair-minded and not easily excited. They tend not to get emotionally involved with others and do not often feel strongly about things. They do not avoid other people, but simply feel indifferent about having others around.

Scale 2: Inhibited (41 items)

High scorers tend to be quite shy or socially ill-at-ease with others. These individuals would like to be close to people but have learned it is better to maintain one's distance and not to trust the friendship of others. Although they often feel lonely, they avoid close interpersonal contact, often fearing rejection and tending to keep their sometimes very strong feelings to themselves.

Scale 3: Cooperative (35 items)

High scorers tend to be soft-hearted, sentimental and kindly in relationships with others. They are extremely reluctant to assert
themselves, however, and avoid taking initiative or assuming a leadership role. They are inclined to be quite dependent, preferring to let others take the lead and give direction. It is typical of them to "play down" their own achievements and to underestimate their abilities.

**Scale 4: Sociable (29 items)**

High scorers are talkative, socially charming, and frequently dramatic or emotionally expressive. They tend to have strong but usually brief relationships with others. These adolescents always look for new excitements and interesting experiences. They often find themselves becoming bored with routine and long-standing relationships.

**Scale 5: Confident (42 items)**

High scorers tend to be quite confident in their abilities and are often seen by others as self-centered and egocentric. They rarely doubt their own self-worth and act in a self-assured manner. These persons tend to take others for granted and do not share or concern themselves with the needs of those to whom they relate.

**Scale 6: Forceful (37 items)**

High scorers are strong-willed and tough-minded, tending to lead and dominate others. They frequently question the abilities of others and prefer to take over responsibility and direction in most situations. They are often blunt and unkind, tending to be impatient with the problems or weaknesses of others.

**Scale 7: Respectful (29 items)**

High scorers are very serious-minded, efficient, and rule-conscious persons who try to do the "right" and "proper" things. They tend to keep emotions under check and dislike "showy" people. They prefer to live their lives in a very orderly and well-planned fashion, avoiding unpredictable and unexpected situations.

**Scale 8: Sensitive (46 items)**

High scorers tend to be discontented and pessimistic. They often find themselves behaving unpredictably; sometimes being outgoing and enthusiastic, then changing quickly to the opposite. These people often feel guilt about their moodiness, apologize to the people involved, but soon are just as moody as ever.

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"TRANSITIONS, To Laura at eleven"

96-98
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