

ACADEMIC MOTIVATION IN JEWISH AND
NON-JEWISH HIGH SCHOOL STUDENTS

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ABSTRACT

ACADEMIC MOTIVATION IN JEWISH AND NON-JEWISH HIGH SCHOOL STUDENTS

by Uri Rueveni

The purpose of this study was (1) to explore differences in academic motivation and aptitude between Jewish and non-Jewish high school students; (2) to ascertain what differences exist in academic motivation, achievement, aptitude, and parental socio-economic status between Jewish Conservative, Orthodox, and Reform students; (3) to investigate the relationships existing between academic motivation, achievement, aptitude, and parental socio-economic status; and (4) to explore the underlying factorial structure of academic motivation for Jewish students.

The sample consisted of 388 Jewish and 369 non-Jewish male and female students selected from four high schools. Motivational, achievement, and aptitude scores were obtained from each. The motivation scores were obtained on the Michigan M-Scale developed by Farquhar and associates. Achievement scores consisted of the students' ninth and tenth grade point average (GPA). Aptitude scores consisted of transformed Z scores obtained as follows: the Differential Aptitude Test-Verbal Reasoning (DAT-VR) for the Jewish Conservative and Reform Students; the School College Ability Test-Verbal (SCAT-V) for the Jewish Orthodox females; the

College Board Scholastic Aptitude Test-Verbal (SAT-V) for the Jewish Orthodox males; and the Minnesota Scholastic Aptitude Test (MSAT) for the non-Jewish males and females. Parental socio-economic scores were obtained from the Jewish students only.

Four procedures were used to analyze the data: (1) analysis of variance, (2) analysis of co-variance, (3) the Scheffé test for differences between means, and (4) correlational and regression analysis.

The results of the analysis of variance indicated that the four male groups differ significantly in academic motivation and aptitude. The four female groups differed significantly in the GSCI and aptitude only. The analysis of co-variance indicated that when aptitude was controlled the four male groups differed significantly in academic motivation while, except for the Generalized Situational Choice Inventory (GSCI) and the M-Scale total, the four female groups did not differ in academic motivation. The Scheffé test revealed that the Jewish male groups exceeded the non-Jewish males in academic motivation and aptitude, while except for the GSCI the Jewish females did not differ in academic motivation from the non-Jewish females. Differences between the Jewish groups indicated the Orthodox male and female groups, each, to exceed the Conservative and Reform groups in academic motivation, achievement and aptitude, while the Reform male and female groups each exceeded the Conservative and Orthodox groups in parental socio-economic status.

Correlational analysis revealed that for the Jewish male and female students a significant relationship was found between academic motivation, aptitude, and achievement. Parental socio-economic status was not found to be significantly correlated with either academic motivation, aptitude, or achievement. The regression analysis indicated that for both the Orthodox male and female students, academic motivation, when added to an aptitude measure increased significantly the precision of prediction of academic achievement. For the Conservative and Reform males the same was the case except for the PJCS. For the Conservative females only the GSCI and total M-Scales increased the precision of prediction of academic achievement while for the Reform females adding the M-Scales to aptitude did not increase significantly the precision of predicting academic achievement. From the factorial structure of the GSCI for both the Jewish male and females, five male and four female factors were identified and labeled. The factorial structure supported the substantive findings that the Jewish male and female students were highly academically motivated.

The study supported the polar theory of academic motivation and indicated the M-Scale to be a useful instrument for the study of academic motivation with Jewish and non-Jewish students.

ACADEMIC MOTIVATION IN JEWISH AND NON-JEWISH
HIGH SCHOOL STUDENTS

By

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CHAPTER I

THE PROBLEM

Each ethnic group has its own traditional beliefs and exerts differing cultural influences upon its members. Research studies indicate that each ethnic and racial group in the United States differs significantly in its outlook upon life, its values, aspirations, and achievement motivation. Members of various ethnic groups may differ in orientation and values and hence in the need to excel educationally, to achieve a higher socio-economic status, to compete, to be socially mobile, and to instill in thier children motivation for intellectual and academic achievement.

This study focuses on one such American sub-culture-- the Jews. Jewish parents have traditionally placed a high value upon educational and intellectual attainments, particularly for their children. The dominant assumption in the literature about Jewish education suggests that the Jewish student is motivated to succeed academically, to pursue a higher educational and vocational goal, and later in life to improve his status educationally and economically and become upwardly mobile. Whether these assumptions are empirically valid is unclear. Academic motivation among

Jewish students has not been studied to date. The relationship between academic motivation, achievement, and aptitude among Jewish students subscribing to different religious orientations, such as Conservative, Orthodox, or Reform, has not been delineated. Answers to the following questions are unknown: Are Jewish male or female students higher in academic motivation than non-Jewish male or female students? Are Jewish students who subscribe to different religious orientations, such as Conservative, Orthodox, or Reform, different in academic motivation and achievement? What relationship exists between the students' academic motivation, achievement, aptitude, and parental socio-economic status? What are the factors underlying academic motivation for Jewish students?

This study is designed to explore further these questions and relationships.

The Purpose of the Study

The basic purpose of this study is to determine whether Jewish and non-Jewish high school students differ in academic motivation and aptitude. In addition, emphasis is directed toward exploring the factors underlying academic motivation in Jewish students, as well as to assess whether Jewish students subscribing to different religious orientations differ in academic motivation, aptitude, achievement, and socio-economic status. An attempt is also made to investigate the strength of the relationships between

academic motivation, achievement, aptitude, and parental socio-economic status.

Theory

McClelland¹ maintained that the need for achievement could be observed from the subjects' responses to certain Thematic Apperception Test (TAT) cards which introduced three interpretive constructs based upon the subjects' concern for long-term involvement, unique accomplishment, and competition with a standard of excellence.

Farquhar² viewed academic motivation in terms of objective measurements. He defined academic motivation as "a combination of forces which initiate, direct, and sustain behavior towards a scholarly goal." Farquhar added three alternate constructs to those of McClelland. They are: (1) short-term involvement, (2) common accomplishment, and (3) a maximal and minimal competition or competition with a standard of excellence.

The first two constructs were the antithesis of McClelland's hypothesis. The third one was conceived as

¹D. McClelland, T. Atkinson, R. Clark, and E. Lowell, The Achievement Motive (New York: Appleton-Century-Crofts, 1953), pp. 110-113.

²William W. Farquhar, A Comprehensive Study of the Motivational Factors Underlying Achievement of Eleventh Grade High School Students, Research Project No. 846 (8450), supported by the U. S. Office of Education in cooperation with Michigan State University, 1963.

a continuum with both extreme low and high motivated subjects having either maximal or minimal competition. (See Table 1.1).

A summary of the polar theoretical dimensions of academic achievement formulated by Farquhar and associates can be found in Table 1.1.

TABLE 1.1--Summary of the polar theory of high and low academic achievement.

High Achievement Motivation	Low Achievement Motivation
1. Long term involvement	1. Short term involvement
2. Unique accomplishments	2. Common accomplishments
3. Competition with maximum standard of excellence	3. Competition with a minimal amount of excellence

From this polarized dimensional theory of achievement motivation, Farquhar developed the Motivations Scale (M-Scale) to serve as an objective instrument for measuring academic motivation which can increase the precision of predicting high school grade-point average when added to an aptitude measure. The M-Scales consists of:

1. The Generalized Situational Choice Inventory (GSCI), which measures the student's need for academic achievement.

2. The Preferred Job Characteristic Scale (PJCS), which measures the occupational aspirations of the subject.
3. The Word Rating List (WRL), which measures the student's self-concept in an academic setting.
4. The Human Trait Inventory (HTI) which measures the personality characteristics of high- and low-motivation students in an academic situation.

The research by Farquhar¹ has presented evidence which empiracally demonstrates that academic motivation is a syndrome composed of non-intellectual factors such as the need for academic achievement, self-concept, occupational aspirations and academic personality factors.

Further support to the fact that self-concept, occupational aspirations and personality traits are related to achievement were given by the studies of Payne,² Taylor,³ Duetsch,⁴ Green,⁵ and KipfmueLLer.⁶

¹William W. Farquhar, A Comprehensive Study of the Motivational Factors Underlying the Achievement of Eleventh Grade High School Students, Research Project No. 846 (8450), supported by the U. S. Office of Education in cooperation with Michigan State University, 1959.

²David A. Payne and William W. Farquhar, "The Dimensions of an Objective Measure of Academic Self-Concept," Journal of Educational Psychology, LIII, No. 4 (February, 1962), pp. 187-192.

³Ronald G. Taylor and William W. Farquhar, "The Validity and Reliability of the Human Trait Inventory Designed to Measure Under and Over Achievement," The Journal of Educational Research, LIX, No. 5 (January, 1966), pp. 19-21.

⁴Martin Deutsch, "Minority Group and Class Status as Related to Social and Personality Factors in Scholastic

This study presents a further attempt to use an objective measure of academic motivation (the M-Scale) with a sample of eleventh grade male and female Jewish and non-Jewish students.

Research Hypothesis

1. Jewish Conservative, Orthodox and Reform male or female students each will exceed the non-Jewish male or female students in academic motivation and aptitude.

2. Jewish Conservative, Orthodox and Reform male or female students each will exceed the non-Jewish male or female students in academic motivation, when aptitude is controlled for.

3. Jewish Orthodox male or female students will each exceed the Conservative and Reform male or female students in academic motivation, achievement, and aptitude.

4. Jewish Reform male or female students will each exceed the Conservative and Orthodox male or female students in parental socio-economic status (SES).

Achievement," Society for Applied Anthropology and Personality Factors in Scholastic Achievement (Society for Applied Anthropology, No. 2, 1960), pp. 1-32. (Mimeographed.)

⁵Robert Lee Green and William W. Farquhar, "Negro Academic Motivation and Scholastic Achievement," Journal of Educational Psychology, LVI, No. 5 (September, 1965), pp. 241-243.

⁶Mark Kipfmueeller, "The Predictability and Factored Dimensions of the M-Scale for Eleventh Grade Parochial School Students" (unpublished Ph.D. dissertation, Michigan State University, 1963), pp. 22-29.

5. There is a significant relationship between each of the following variables: academic motivation sub- and total M-Scale scores, achievement, aptitude, and parental socio-economic status for the Jewish Conservative, Orthodox and Reform male or female students.

6. Academic motivation sub- and total M-scale scores, when added to an aptitude measure, will increase the precision of prediction of academic achievement (GPA) for the Jewish Conservative, Orthodox and Reform male or female students.

7. The factor analysis of the Jewish male or female students' responses to the General Situational Choice Inventory (GSCI) will yield an interpretable structure supportive of the polar theory of academic motivation.

Overview

The general plan of the dissertation is as follows: In Chapter II, a review of the literature pertaining to academic achievement motivation of Jewish students. Chapter III is an account of the methodology used in collecting and organizing the data and the statistical methods used for analyzing them. Results of the analysis of variance, difference between means, correlational and regression analysis appear in Chapter IV. Results of the factor analysis is reported in Chapter V. The summary, conclusions, and recommendations appear in the final chapter.

CHAPTER II

REVIEW OF LITERATURE

Sources of Academic Motivation and Achievement in Jewish Children

Jews have traditionally placed a high value upon education and intellectual attainment or achievement. The Jewish parent was expected to provide as much education as the sons showed themselves capable of absorbing. Learning was considered to give the Jew prestige, respect, authority, and a chance for a better marriage.

The European "shtetle" (town) status came primarily from two sources: The amount of traditional learning one mastered and how available money was used, i.e., whether it was used for socially approved purposes. Immigrant parents recognize that the accomplishments that bring status here are beyond their achievement. They recognized therefore, that they will gain their status from how well their children achieve in America and train their children to strive for the status which was so meaningful for them (Hurvitz, 1961¹).

¹Nathan Hurvitz, "Sources of Motivation and Achievement of American Jews," Jewish Social Studies, XXIII, (December, 1961), pp. 217-234.

Warner and Srole² state that the immigrant Jewish parent "is extremely ambitious for his children." This point is made also by Barrabee and Von Mering³ (1955) who state that Jewish boys are pressed by their parents to get ahead.

Jewish. . . boys are continuously urged to achieve good school marks, to obtain higher education, and to be upwardly, socially mobile. The underlying reason is that the Jewish boy is essentially oriented by his parents to satisfy the personal ambition needs of his parents, particularly the mother . . . Jewish boys experience stress when they are unable to fulfill parental expectations regarding education and mobility. They see themselves as having failed in respect to values which they do not question because such values seem to be in complete accord with the highly esteemed American value of education and success.

There may be reason to doubt that the Jewish boy is motivated primarily by his mother's needs, as Barrabee and Von Mering suggest. Status in the Jewish family comes from the position achieved by the man. Especially in the first generation family, it is the status gained by the son that gives status to the father. Therefore, the son's achievement is felt more acutely by the father, who may express his anxiety and shame about his son's lack of achievement within the family, and especially to the mother who is the intermediary between her husband and her son. The mother

²Lloyd W. Warner and U. E. Srole, The Social Systems of American Ethnic Groups (New Haven: Yale University Press, 1945), p. 147.

³Paul Barrabee and Otto Von Mering, "Ethnic Variations in Mental Stress in Families with Psychotic Children," in Arnold Rose, Mental Health and Mental Disorder (New York: Wiley and Sons, 1933), p.

has the daily, on-going relationship with the son, and she interprets the importance of achievement to him. In short, it is more likely that it is the father's needs that are being satisfied rather than the mother's.

Hurvitz (1962) has suggested that in their relationship with their children the parents foster achievement by pointing out that winning the rewards of achievement is not harmful to others, by suggesting that it helps develop a way of life in which it is not necessary to be dependent upon the non-Jews, and by revealing that it offers ways to overcome non-Jewish adversaries in more subtle ways than the prohibited direct aggression. Thus, in training the child for achievement, awards and honors are subjects of family discussion and the significance of the child's peers, neighbors, and relatives are held up as examples to be emulated. The parents emphasize that they regard achievement as the good child's fulfillment of their expectations. The inability of the child to fulfill his parent's achievement expectations may be met with disproportionate response, which exerts considerable pressure on the child not to give up the goals his parents set for him. For example, a child who decides to stop going to high school before he graduates may be met by the mother's cries that "she will die of shame," and the father's exclamations that "he will have a heart attack."

Miller and Swanson¹ (1958) have suggested that achievement training of the first-generation American Jewish child takes place in a family which uses an "individuated-entrepreneurial" versus a "welfare-bureaucratic" pattern of child training. The first-generation American Jews are associated with "individuated-entrepreneurial" settings which are marked by small size, single division of labor, small capitalization, and provision for mobility and income through risk taking and competition. Children raised in such homes "will be encouraged to be highly rational, exercise self-control, be self-reliant, and to assume an active manipulative stand to their environment." The American Jewish family is comparable to the "American" family which entered the mobility pattern a generation ago.

Hurvitz (1961) hypothesized that the American-born Jewish child accepts the direction set out for him by his parents because the parents' values are given early and are constantly reinforced, because it is the most comfortable response of the child to the parents' training and manipulation, and because the child can demonstrate his love for his parents by accepting their values. The growing child becomes aware that he is a member of a community or movement which supports his parents' achievement expectations. These expectations are fostered not only by his friends

¹Daniel R. Miller and Guy E. Swanson, The Changing American Parent (New York: Wiley and Sons Co., 1958), pp. 32-35.

and relatives and the institutions of the Jewish community, especially the Hebrew school, but also by the public high schools.

As he matures, the young adult identifies more completely with the parents' values and expectations because he recognizes that these are the values and expectations of the prevailing culture and they mean success for him.

In relation to the first-generation American Jewish family, Hurvitz further points out that although among American Jews family stability and solidarity are greater, there are psychological strains and tensions stemming from the following common sources:

1. Socio-historical factors--which are sources of the middle-class value orientation of modern Jews.

2. Culture conflict between European-born parents and their children.

3. The repression of aggressive and hostile feelings in the American-born Jewish child.

These tensions are resolved by achievement expected from the child, and for which he is trained.

Dimont¹ suggests that the abstract God idea was a great factor in the development of and the stress put upon the intellect, the logic, the abstract, and the symbolic ideas among Jews since early times.

¹Max Dimont, Jews, God and History (New York: Simon and Schuster, 1962), p. 45.

Strodtbeck,¹ when discussing some aspects of the Eastern European Jewish culture, suggests that the Jewish beliefs appear congruent with a belief in rational mastery of the world. "For the Jew there was always the expectation that everything could be understood." Emphasis on learning as a means of control was strong. "The mind was the great tool for the Jew, but ever under discipline and purposeful direction. In the early morning prayer, the mind turned to sacred matters, on the Sabbath to non-business matters." The Jews typically have urged their children to leave home if in so doing they faced better opportunities. The European Jewish society, from which most American Jewry is descended, vigorously stressed the importance of planning and working for the future. The tradition was that the parents save for many years to improve their son's vocational opportunities.

Levinson,² who concerned himself with the impact of the Jewish subculture upon the emotional reactions and thinking of the Orthodox Jew, suggests that "book learning is of paramount importance among Jews who have always been called 'the people of the Book'." According to Levinson, the religious dictum to study in order to become wise, as

¹Fred L. Strodtbeck, "Family Interaction, Values and Achievement," in D. McClelland, Talent and Society (New York: Van-Norstrand, 1958), p. 12.

²Boris M. Levinson, "Some Research Findings with Jewish Subjects of Traditional Background," Mental Hygiene, XLVII, (January, 1963), pp. 129-137.

well as pious, has evolved into a tremendous love and respect for learning and knowledge "for its own sake." Consequently, says Levinson, it may be expected that children from traditional Jewish homes will show "increasing development of verbal abilities." Furthermore, says Levinson, in the Jewish traditional home the boy is expected to transmit the traditions of the family, religion, and nation.

Landes and Zborowski,¹ discussing the question of independence from parental control, suggest that in the Jewish culture intellectual matters, individuality, and independence are highly valued. They refer mainly to the Eastern European Jewish culture and observe that the Jewish child was taught to question authority in his schooling, since even the divine law is subject to interpretation, and in intellectual matters independence was encouraged.

Discussion

What then can one conclude from the literature dealing with the sources of academic motivation and achievement in Jewish children? One point is repeatedly stressed. The American Jew represents a distinct ethnic group or sub-culture with values, aspirations, cultural traditions, and beliefs, all of which have a unique influence upon the achievement motivation of the Jewish child, and are directed

¹Ruth Landes and Mark Zborowski, Mark, "Hypothesis Concerning the Eastern European Jewish Family," Psychiatry, IV, (January, 1953) p. 24.

toward rational mastery, higher educational and vocational achievements, status, and mobility.

Some interesting questions, not dealt before in the literature arise. Would Jewish students subscribing to different religious orientations differ in academic motivation and achievement? Would the Orthodox male or female student be higher academically motivated than the Conservative or Reform male or female students? Would there be differences in aptitude, achievement, and parental socioeconomic status between these groups of students? The descriptive assumptions reviewed suggests that there may be a difference in the direction of a higher academic motivation and achievement on the part of the Orthodox male students, but not on the part of the Orthodox females.

Another question which arises from the above discussion, is whether or not Jewish and non-Jewish students differ in academic motivation and achievement? To what extent would the Jewish male or female Conservative, Orthodox and Reform students differ from the non-Jewish male or female students in academic motivation and achievement? An attempt will be made in this study to explore further some of these questions.

Review of Research Studies

Most of the earlier studies concerned themselves with comparing the intelligence of Jewish to non-Jewish students. The type of question usually asked was, "Are Jewish students

superior to non-Jewish students in intelligence test scores?" Cohen¹ was concerned with the scores of 193 Jewish and non-Jewish native white freshmen who entered Ohio State University in the Fall of 1925. On the Ohio State University Psychological Examination the average score made by the Jewish men was 52, by the Jewish women 60, by the non-Jewish men 47, and by the non-Jewish women 45. The difference between the scores made by the Jewish women and the non-Jewish women was statistically significant, as was the difference between the total Jewish and the total non-Jewish scores.

Garrett² found the Columbia College Jewish freshmen superior to the Protestant and Catholic freshmen on the Thorndike Intelligence Examination for High School Graduates. On this test, the average score of the 75 Jewish boys was 87, that of 136 Protestant boys 79, and that of 58 Catholic boys 77.

The above two studies did not control for socioeconomic status and there was no evidence concerning the adequacy and reliability of the statistical method used.

Held³ compared scores obtained on the American Council Psychological Examination by Jewish and non-Jewish college

¹I. L. Cohen, Intelligence of Jews as Compared to Non-Jews (Columbus: Ohio State University Press, 1927), p. 43.

²H. E. Garrett, "Jews and Others," Personality Journal, VII, (October, 1927), p. 43.

³Omar C. Held, "A Comparative Study of the Performance

freshmen. For each student there was computed a linguistic score, a quantitative score, and a gross total score. The statistical analysis consisted of percentile ranks and sigma difference for the mean of two groups. No socio-economic controls were employed. The results indicate that the non-Jewish boys had a lower score on the linguistic portion of the test.

Shuey¹ administered the American Council Psychological Examination to a large sample of new Catholic, Protestant, and Jewish students entering Washington Square College. After controlling for age, place of birth, and occupation, her results did not uphold Cohen's or Garrett's findings that Jewish college students are superior to non-Jewish subjects on intelligence tests. The statistical method in Shuey's experiment consisted of comparing mean standard deviation and employing the critical ratio.

Brown² found the following methodological inadequacies in most of the research in this field: (1) Failure to control socio-economic status in most of the experiments, (2) Failure to show evidence that reading disability has been

of Jewish and Gentile College Students in the American Council Psychological Examination," Journal of Social Psychology, XIII, (November, 1941), pp. 407-411.

¹A. M. Shuey, "Differences in Performance of Jewish and Non-Jewish Students on the American Council Psychological Examination," Journal of Social Psychology, XXV, (January, 1942), pp. 221-243.

²Fred Brown, "A Comparative Study of the Intelligence of Jewish and Scandinavian Kindergarten Children," Journal of Genetic Psychology, LXIV, (February, 1944), pp. 67-92.

eliminated, (3) Failure to weed out problem children, (4) The small sample size, (5) Failure to use adequate statistical controls, and (6) Failure to define clearly what is meant by non-Jewish.

Using the analysis of variance and controlling for such variables as age, sex, and socio-economic class, Brown administered the Stanford-Binet to a sample of 324 second-generation Jewish kindergarten children. His results indicate that

1. No difference in general mental level between the two groups of children exists when socio-economic status is controlled for in parents' occupation.

2. Neither group exceeds the other in general vocabulary score, basal age, or chronological age. However, Jewish children surpass Scandinavian children on tests which require counting pennies, comprehension, naming coins, and giving dates,

3. Scandinavian children surpass Jewish children in drawing a square and copying a diamond, and

4. Scandinavian male and female children surpass Jewish male and female children on tests of motor control. On the other hand, Jewish females surpass Scandinavian females on verbal experiential tests.

Clark¹ examined the records of 6,774 freshmen at Northwestern University. He divided the students into

¹Edward L. Clark, "Motivation of Jewish Student," Journal of Social Psychology, XXIX, (September, 1949), pp. 113-117.

Jewish and non-Jewish groups and took the scores they achieved on a scholastic aptitude test as a measure of their ability, and their first semester grade point ratio as a measure of their achievement. For the first five classes the American Council on Education Psychological Examination was used, while the test scores for the remaining five classes were obtained from the Ohio State University Psychological Examination. The author had 40 groups with 20 comparisons to make by computing the correlation between test scores and grades for 20 non-Jewish sex-class groups. He set up regression equations for predicting grades by means of test scores, using each one of these equations once for predicting the expected grades of the Jewish group from their average test scores. He then compared the average obtained by the regression equation with the average grades made by each Jewish group.

Clark's study was weak on several counts. The problem was not clearly specified, no hypotheses were formulated, and the method of sampling was not clearly specified. No attempt was made to clarify what was meant by "Jewish Student" with regard to religion orientation (Conservative, Orthodox, and Reform), and no evidence of reliability of grades as a criteria means was given.

Because no hypotheses were formulated, the statistical analysis which is necessary for a valid test of the hypotheses was not satisfied. The conclusions derived were logically deduced and limited to the population studied.

His results indicate that there is a tendency for Jewish students to make better freshmen grades than the non-Jewish students, aptitude test scores being held constant; this tendency was not entirely established for Jewish women, although the author points out that it was probable that Jewish women did a little better than their test scores would predict.

Clark interprets his data as evidence that the Jewish students, as a group, are better motivated to achieve higher grades as freshmen.

Rosen¹ investigated differences in motivation, values, and aspirations of six racial and ethnic groups. The subjects were mothers and their sons, ranging in age from 8 to 14. Data was collected from the children's responses on a projective instrument (TAT cards) and from interviews with the mothers concerning their achievement value orientations, educational-vocational aspirations for their sons, and the degree to which they trained them to be independent. Rosen's findings pertaining to Jews were as follows:

1. Jews expect earliest evidence of self-reliance from their children (mean age 6.18). Ethnicity and social class were significant at .01 level.

2. The mean for achievement motivation scores was second highest for Jews (10.53) and highest for Greeks.

¹Bernard C. Rosen, "Race, Ethnicity, and the Achievement Syndrome," American Sociological Review, XXIV, (December, 1959), pp. 47-60.

However, differences between Greeks, Jews, and Protestants were not significantly different.

3. For the Jewish sample, achievement scores were inversely related to social status.

4. The mean ethnic value scores (from a value index based upon interviews with mothers) were the highest for the Jewish mothers, 5.54. The scores for Jews, Protestants, and Greeks did not differ significantly higher than the scores for Italians.

5. Data derived from the vocation aspiration index (mothers ask to respond to a list of occupations) indicate that the mean scores for the Jews were significantly higher than the scores for Protestants and Greeks.

Bieri¹ analyzed differences in social mobility in a sample of 96 Jewish and Catholic men, ranging in age from 19 to 40 years, in terms of their responses to questions measuring (1) The generation of their parents (foreign or native born), (2) Self-concept, (3) Acceptance of authority, (4) Parental identification, (5) Family power relations, and (6) Education and Intelligence.

His results indicate that (1) Jewish subjects are more mobile than Catholic subjects, (2) Subjects with foreign-born fathers are more mobile than those with native-born fathers, (3) Feelings of dominance are inversely related to

¹James Bieri, Robin Lobeck, and Harold Plutnick, "Psychosocial Factors in Differential Social Mobility," Journal of Social Psychology, LVIII, (June, 1962), pp. 183-200.

mobility, especially for lower-class Jewish subjects, ($p < .02$), (4) In contrast to Catholic subjects, Jewish subjects are less accepting of authority, report less external forms of parental discipline, and perceive their parents as less controlling, ($p < .05$), (5) Parental identification is more related to occupational choice than mobility, and (6) Education and intelligence are primary factors in these mobility differences. Jewish subjects tend to excel over Catholic subjects both in amount of education and in intellectual attainment.

Levinson¹ paired 47 Jewish subjects with Irish and Italian subjects of the same age, attending the same grades in parochial schools, and of identical W.I.S.C. full scale I.Q. Among the Jewish subjects the difference between the verbal and the performance scale was significantly higher, statistically, than among the Irish and Italian subjects.

In another study, Yeshiva College freshmen ($N=48$) were found to have a significantly higher interest on the Kuder Preference Record in scientific, literary, and social areas, and significantly lower interest in mechanical, computational, artistic, and musical areas than a comparable college freshmen group ($N=1426$).²

¹Boris M. Levinson, "Subcultural Variations in Verbal and Performance Ability at the Elementary School Level," Journal of Genetic Psychology, XCVII, (July, 1960), pp. 149-160.

²Boris M. Levinson, "The Vocational Interests of Yeshiva College Freshmen," Journal of Genetic Psychology, XCIX, (September, 1961), pp. 235-244.

Discussion of Research Studies

The studies reported by Cohen,¹ Shuey,² Brown,³ and Clark⁴ did not deal directly with the question of achievement motivation. The main emphasis was on comparing intelligence test scores of Jewish students to a sample of non-Jewish students. Thus the results, even if they were consistent (and they were not), are only indirectly related to the question of academic motivation and achievement. Except for one study (Brown), these experiments were lacking in adequate controls of such factors as socio-economic class and the sampling procedures were inadequately explained. In all these studies the conclusions, as far as achievement motivation is concerned, appear to be logical rather than empirical. Theoretical formulations were lacking or inadequate.

In the experimentally more sophisticated studies of Rosen,⁵ Strodtbeck,⁶ and Bieri,⁷ a better control of such important variables as socio-economic class was attempted.

¹Cohen, op. cit., p. 43.

²Shuey, op. cit., pp. 221-243.

³Held, op. cit., pp. 407-411.

⁴Brown, op. cit., pp. 67-92.

⁵Clark, op. cit., pp. 113-117.

⁶Rosen, op. cit., pp. 47-60.

⁷Strodtbeck, op. cit., p

⁸Bieri, Lobeck, and Plutnick, op. cit., pp. 183-220.

Also, an attempt was made to formulate apriori or aposteriori theoretical structure, and to use more reliable and careful statistical analysis, as well as to formulate the hypotheses adequately. However, no study has dealt with the high school Jewish student, no attempt has been made to compare his academic motivation to that of the non-Jewish student, no study has attempted to account for any differences in academic motivation and achievement between Jewish students subscribing to different religious orientations. No study has attempted to investigate what relationship exists, if any, between academic motivation achievement, aptitude and parental socio-economic status for Jewish Conservative, Orthodox and Reform male and female students.

Summary

Theoretical speculation and experimental studies which dealt with the problem of Jewish achievement, although scant, have generally indicated a pattern of higher achievement needs on the part of Jews.

To account for these differences in motivation achievement some suggest such factors as parental stress upon educational and intellectual attainment, expectation of higher academic and intellectual achievement, higher status for the child as perceived by his parents, and reinforcement of the values of academic achievement by the school and community, especially the Jewish community

(Hurvitz). Others (Strodtbeck) suggest the European influences that prevailed among the first-generation Jewish parents--the stress on early independence, mastery of the rational and logical, and the attainment of high intellectual curiosity (particularly of the written word), the stress on learning, success and achievement--as means for higher academic achievement and socio-economic status. Levinson suggests that the pressures on the Orthodox youth to transmit the cultural heritage are another factor in higher academic achievement.

Early experimental studies compared intellectual capacities of Jews and non-Jews. Although not all the studies were in agreement there is some indication that the Jewish student or child scored higher on tests that measured intellectual attainment, particularly on the verbal skills.

These studies lacked controls, were poorly designed and the statistical techniques were unsophisticated.

Recent studies (Rosen, Bieri) have been more directly related to the problem at hand. Rosen found that compared to other ethnic groups (Greeks), Jewish parents do expect earlier self-reliance from their children, Jewish children did score higher on achievement measures, and tended to excel over Catholic students both in amount of education and intellectual attainment. In reviewing the literature, it was observed that no study has attempted to investigate the relationships between aptitude, achievement, and academic motivation among Jewish high school students. No

attempt has been made to investigate the difference if any in academic motivation between Jewish and non-Jewish male and female high school students. The possibilities of differences in academic motivation and achievement among Jewish students who subscribe to different religious orientations (Conservative, Orthodox, Reform) have not been explored. Such factors as parental socio-economic status and its relationship to the students academic motivation and achievement have not been explored as yet.

CHAPTER III

DESIGN AND METHODOLOGY

The design of this study is described under three headings: (1) Sample Selection, (2) Nature of Data, and (3) Analysis Procedure.

Sample Selection

The samples selected for this study consisted of 388 Jewish male and female students and 369 non-Jewish male and female students. The Jewish samples were selected from one Detroit and two New York high schools; the non-Jewish sample¹ was selected from a Duluth, Minnesota, high school. All students were in the eleventh grade. The Jewish sample consisted of six sub-samples with Conservative, Orthodox, and Reform male and female groups (see Table 3.1).

Nature of Data

The following data was gathered on each student: (1) Academic Motivation Scores, (2) Achievement Scores, (3) Aptitude Scores, (4) Parental Socio-economic Status.

¹The data for the non-Jewish sample was taken from an existing study conducted by Dr. William W. Farquhar, Michigan State University.

TABLE 3.1--Summary of sample characteristics.

Sample Size N	Sex	Religious Affiliation	Grade	Geographical Location
61	Male	Conservative	11	Detroit, Michigan
43	Male	Reform	11	Detroit, Michigan
59	Female	Conservative	11	Detroit, Michigan
47	Female	Reform	11	Detroit, Michigan
97	Male	Orthodox	11	New York, New York
81	Female	Orthodox	11	New York, New York
179	Male	Non-Jewish	11	Duluth, Minnesota
190	Female	Non-Jewish	11	Duluth, Minnesota

Academic Motivation

The objective measures of motivation were based upon the Michigan M-Scales. This Scale consists of four subscales: (1) Generalized Situational Choice Inventory (GSCI), (2) Preferred Job Characteristic Scale (PJCS), (3) Word Rating List (WRL), and (4) Human Trait Inventory (HTI). (For a detailed description of the Scales, see Appendix A.)

Achievement

The achievement measures consisted of the students' grade point average (GPA) in the ninth and tenth grades as well as the combined total grade point average of the two grades. (For a detailed description of GPA, see Appendix B.)

Aptitude

Aptitude scores for the Jewish Reform male and female students were obtained from the Differential Aptitude Test-Verbal Reasoning (DAT-VR).¹ Aptitude scores for the Orthodox male students were obtained from the Scholastic Aptitude Test-Verbal (SAT-V).² Aptitude scores for the Orthodox female students were obtained from the school College Ability Test-Verbal (SCAT-V).³ Aptitude scores for the non-Jewish

¹Manual for the Differential Aptitude Tests (New York: The Psychological Corporation, 1959), pp. 2-4.

²"Scholastic Aptitude Test," College Entrance Examination Board Scoring Manual (Princeton, New Jersey: Educational Testing Service, 1965), p. 10.

³"School College Ability Test," Manual of Interpretation (Princeton, New Jersey: Educational Testing Service, 1957), pp. 5-7.

TABLE 3.2--Summary of motivation, aptitude, and achievement measures.

Test	Legend	Highest Possible Raw Scores		Sample
		Males	Females	
Generalized Situational Choice Inventory	GSCI	45	30	All Jewish and non-Jewish male and female students
Preferred Job Character- istic Scale	PJCS	20	33	All Jewish and non-Jewish male and female students
Word Rating List	WRL	48	48	All Jewish and non-Jewish male and female students
Human Trait Inventory	HTI	26	25	All Jewish and non-Jewish male and female students
M-Scale Total		139	136	All Jewish and non-Jewish male and female students
Differential Aptitude Test-Verbal Reasoning	DAT-VR	50	50	Jewish Conservative and Re- form male and female students
School College Ability Test-Verbal	SCAT-V	60	60	Jewish Orthodox female students
Scholastic Aptitude Test-Verbal	SAT-V	90	90	Jewish Orthodox males

TABLE 3.2--Continued

Test	Legend	Highest Possible Raw Scores		Sample
		Males	Females	
Minnesota Scholastic Aptitude Test	M-SAT	--	--	Non-Jewish males and females
Achievement; Ninth and Tenth, Grade Point Average	GPA	3.00	3.00	All Jewish Conservative, Orthodox and Reform male and female students

male and female students were obtained from the Minnesota Scholastic Aptitude Test (MSAT).¹ All aptitude scores were normalized (Z-transformation) using the means and standard deviations of eleventh grade norms for each aptitude measure used.

Parental Socio-Economic Status (SES)

To obtain an estimate of parental socio-economic status all students were asked to complete a data card responding to (1) the highest educational level attained by their father, (2) the highest educational level attained by their mother, (3) their father's occupation, and (4) their mother's occupation. Information from 1, 2, and 3 was used to develop a parental socio-economic status (SES) index. The procedure was the same used by Farquhar² and McDonald.³ (For derivation of SES index and description of the socio-economic questionnaire and weights, see Appendix C.)

Reliability Analysis--M-Scales

To obtain reliability estimates for the M-Scales and the sub-scales for each of the groups of Jewish students,

¹Minnesota Scholastic Ability Test (MSAT), Student Counseling Bureau, University of Minnesota, 1965.

²Farquhar, op. cit., 1963, pp. 99-100.

³Keith H. McDonald, "The Relationship of Socio-Economic Status to an Objective Measure of Motivation," The Personnel and Guidance Journal, XLII, no. 10 (June, 1964), pp. 997-1002.

Kuder-Richardson Reliability Estimate Formula No. 20 was employed. The reliability estimates are given in Tables 3.3 and 3.4.

The total M-Scale reliability estimate ranged from .90 to .94 for the male groups, and from .88 to .94 for the female groups. Sub-scales reliability estimates for males ranged from .55 to .94 for females, .57 to .95 for males. The reliability of the GSCI for both the Orthodox males and females was somewhat lower than all other sub-scales--.55 for males and .57 for females. Except for the GSCI for these two groups, the reliability estimates obtained indicate that the total as well as the sub-tests' reliability for the Jewish male and female group was acceptable.

Achievement Criterion Reliability

To obtain an estimate of achievement criterion reliability, intercorrelations between ninth and tenth grades GPA were calculated for the Conservative, Orthodox, and Reform male and female students. Intercorrelations for the ninth and tenth grade GPA attained for the Conservative males were .69, for the Orthodox males .51, and for the Reform males .67. Intercorrelations between ninth grade GPA were .75 for the Conservative females, .81 for the Orthodox females, .69 for the Reform females (see Tables 3.5 and 3.6).

TABLE 3.3--Reliability estimates of total M-scales and sub-scales for Jewish and non-Jewish male samples.¹

Variable	Conservative N=61	Orthodox N=97	Reform N=43	Non-Jewish Sample ⁷
GSCI ²	.73	.55	.71	.84 (N=45)
PJCS ³	.69	.67	.67	.89 (N=20)
WRL ⁴	.89	.89	.92	.98 (N=48)
HTI ⁵	.68	.77	.90	.78 (N=23)
Total M-Scale ⁶	.91	.90	.94	.94 (N=24)

¹Based on Kuder-Richardson Formula No. 20.

²Based on 45 items for males and 30 items for females.

³Based on 20 items for males and 33 items for females.

⁴Based on 48 items for males and 48 items for females.

⁵Based on 26 items for males and 25 items for females.

⁶Based on 139 items for males and 136 items for females.

⁷Items from Farquhar's study using his analysis of variance reliability estimate.

TABLE 3.4--Reliability estimates¹ of total M-scales and sub-scales for Jewish and non-Jewish female samples.

Variable	Conservative N=59	Orthodox N=81	Reform N=47	Non-Jewish Sample ⁷
GSCI ²	.67	.57	.86	.90 (N=30)
PJCS ³	.89	.75	.88	.83 (N=23)
WRL ⁴	.88	.88	.90	.88 (N=48)
HTI ⁵	.72	.64	.90	.76 (N=23)
Total M-Scale ⁶	.92	.88	.95	.93 (N=240)

¹Based on Kuder-Richardson Formula No. 20.

²Based on 45 items for males and 30 items for females.

³Based on 20 items for males and 33 items for females.

⁴Based on 48 items for males and 48 items for females.

⁵Based on 26 items for males and 25 items for females.

⁶Based on 139 items for males and 136 items for females.

⁷Items from Farquhar's study using his analysis of variance reliability estimate.

TABLE 3.5--Achievement criterion reliability for ninth, tenth grades and total GPA
Jewish Conservative, Orthodox, and Reform females.

Achievement GPA	Conservative Females N=59		Orthodox Females N=81		Reform Females N=47	
	Tenth Grade GPA	Total GPA	Tenth Grade GPA	Total GPA	Tenth Grade GPA	Total GPA
Ninth grade GPA	0.75*	0.93*	0.81*	0.85*	0.69*	0.46*
Tenth grade GPA		0.93*		0.87*		0.69*

TABLE 3.6--Achievement criterion reliability for ninth, tenth grades and total GPA
Jewish Conservative, Orthodox, and Reform males.

Achievement GPA	Conservative Males N=61		Orthodox Males N=97		Reform Males N=43	
	Tenth Grade GPA	Total GPA	Tenth Grade GPA	Total GPA	Tenth Grade GPA	Total GPA
Ninth grade GPA	0.69*	0.92*	0.51*	0.79*	0.67*	0.91*
Tenth grade GPA		0.90*		0.76*		0.85*

Analysis Procedure

Four procedures were used to analyze the data: (1) analysis of variance and co-variance, (2) Scheffé test for multiple comparisons between means, (3) correlational and regression analysis, and (4) factor analysis.

Analysis of Variance and Co-Variance

The analysis of variance¹ model was used to test differences in academic motivation and aptitude between Jewish Conservative, Orthodox, and Reform students and non-Jewish students. In addition, the analysis was used to test differences in parental socio-economic status between the Jewish groups. An analysis of co-variance² was used to test whether or not academic motivation scores differ between the Jewish and non-Jewish groups when aptitude is controlled.

Scheffé Test for Multiple Comparisons³

To test whether or not mean scores of academic motivation and aptitude differ between the Jewish and non-Jewish group the Scheffé test was employed. The Scheffé was also

¹Michigan State University, Least Square Routine Programs, CDC 3600 Computer Service, 1965.

²Michigan State University, Least Square Routine Programs, Modified for Analysis of Co-Variance by William Rubel, 1965.

³Henry Schaffé, The Analysis of Variance (New York: John Wiley and Sons, 1959), pp. 66-67.

used to test whether or not the Jewish groups differ in academic motivation, achievement, aptitude, and parental socio-economic status. The one-tail test with $\alpha = .05$ level was determined as the region for rejecting the Null Hypothesis.

Correlation and Regression Analysis

Zero order correlation coefficients¹ were computed for each of the Jewish male and female groups separately to estimate the strength of the relationship existing between academic motivation, achievement, aptitude, and parental socio-economic status.

A regression analysis was used to test whether or not the M-Scale when added to an aptitude measure increased the precision of the estimation of student achievement (Grade Point Average).

Each of the M-Scale sub-tests was added separately to the aptitude measure in regression estimation of the grade point average criterion. Beta weights of the resultant regression equation were obtained by using the Michigan State University, CDC 3600 computer, the least square routine programs.

Factor Analysis

To understand the academic motivational structure of the Jewish male and female students, all forty-five male

¹Data was analyzed by using the Michigan State University CDC 3600 Computer, the Least Square Routine Programs.

items and all thirty female items of the Generalized Situational Choice Inventory (GSCI) were factor analyzed.

Procedure.--A sample of one hundred male and one hundred female students were selected randomly from the existing pool of 388 Jewish students. In each sample, the proportion of students subscribing to each of the three Jewish religious orientations was as follows: forty Conservative, twenty Orthodox, and forty Reform students.¹

Rotation of factors.--Forty-five male items and thirty female Generalized Situational Choice Inventory items were factor analyzed separately. The principle axis solution was used for the unrotated factors. The Quartimax method of rotation² was used with a minimum eigen value of one as the criteria for rotating a factor. Each factor had to have loadings of $n-1$ items (n = number of factors) before rotation was completed. In addition, the content had to make psychological sense. The factors, their content and factor loadings are presented in Tables 4.1 through 4.5.

¹Based on the assumption that the three Jewish religious orientations among American Jews approximate these proportions.

²Factor Analysis, Technical Report No. 31, Computer Institute for Social Science Research (East Lansing, Michigan: Michigan State University, 1965).

Null Hypotheses

1. There is no difference in academic motivation and aptitude between Jewish Conservative, Orthodox, and Reform male or female students, each, and non-Jewish male or female students.
 - 1a. Jewish Conservative, Orthodox, and Reform male or female students, each, will not exceed the non-Jewish male or female students in academic motivation and aptitude.
2. There is no difference in academic motivation (when aptitude is controlled for) between the Jewish Conservative, Orthodox, and Reform male or female students and the non-Jewish male or female students.
 - 2a. Jewish Conservative, Orthodox, and Reform male or female students, each, will not exceed the non-Jewish male or female students in academic motivation when aptitude is controlled for.
3. There is no difference in academic motivation, achievement, and aptitude between the Jewish Conservative, Orthodox, and Reform male or female students.
 - 3a. Jewish Orthodox male or female students, each, will not exceed the Conservative and Reform male or female students in academic motivation, achievement, and aptitude.
4. There is no difference in parental socio-economic status (SES) between the Jewish Conservative, Orthodox, and Reform male or female students.

- 4a. Jewish Reform male or female students, each, will not exceed the Conservative and Orthodox male or female students in parental socio-economic status.
5. There is no relationship between each of the following variables: academic motivation, sub- and total M-Scale scores, achievement, aptitude, and parental socio-economic status for the Jewish Conservative, Orthodox, and Reform male or female students.
6. Adding the sub- or total M-Scale scores to an aptitude measure will not increase the precision of estimating achievement (GPA) for the Jewish Conservative, Orthodox, and Reform male or female students.
7. The factor analysis of the Jewish male or female students pooled responses to the Generalized Situational Choice Inventory (GSCI) will not yield an interpretable structure supportive of the polar theory of academic motivation.

Summary

A sample consisting of 388 Jewish male and female 369 non-Jewish male and female eleventh grade students were selected from three different high schools. Motivational, achievement, aptitude, and parental socio-economic status scores were obtained for each of the Jewish students. Estimate of reliability for the total M-Scale ranged from .90 to .94 for males and from .88 to .94 for females.

Four statistical procedures were used to analyze the data: (1) analysis of variance and co-variance, (2) the Scheffé test for multiple comparison between means, (3) correlational and regression analysis, and (4) factor analysis. Seven Null Hypothesis were formulated.

CHAPTER IV

ANALYSIS OF DATA

In this chapter will be presented the following:

(1) results of the analysis of variance, (2) results of the analysis of co-variance, (3) results of the Scheffé multiple range test, and (4) results of the correlation and regression analysis.

Results of the Analysis of Variance

The Male Analysis of Variance for Academic Motivation and Aptitude between Jewish Conservative, Orthodox, Reform and Non-Jewish Students

Between and within sum of squares, mean squares, and F ratios are presented in Table 4.1.

The null hypothesis tested was:

H_{01} : There is no difference in academic motivation and aptitude between Jewish Conservative, Orthodox, and Reform male or female students, each, and non-Jewish male or female students.

Inspection of Table 4.1 reveals significant F's at the .01 level between the four male groups in the GSCI $F = 27.2$, PJCS $F = 7.4$, WRL $F = 6.7$, HTI $F = 36.2$, total M-Scale $F = 3.3$, and aptitude $F = 100$.

TABLE 4.1--Analysis of variance for academic motivation and aptitude between Jewish Conservative, Orthodox, Reform and non-Jewish males.

Variable	Source of Variance	Sum of Squares	Degrees of Freedom	Mean Squares	F
GSCI	Between groups	2140.0	3	713.1	27.2*
	Within groups	9963.7	376	26.5	
	Total	12103.7	379		
PJCS	Between groups	188.2	3	62.0	7.4*
	Within groups	3287.2	376	8.5	
	Total	3475.4	379		
WRL	Between groups	1882.7	3	627.0	6.7* ⁴⁵
	Within groups	36724.6	376	93.1	
	Total	38607.3	379		
HTI	Between groups	1600.9	3	532.2	36.2*
	Within groups	5946.2	376	16.2	
	Total	7547.1	379		
M-Scale Total	Between groups	31024.0	3	1036.5	3.3*
	Within groups	100310.2	376	291.1	
	Total	131334.2	379		
Aptitude	Between groups	481.7	3	160.0	100.0*
	Within groups	571.4	376	1.6	
	Total	1053.1	379		

*Significant at the .01 level.

Null Hypothesis 1 was rejected concluding that the Jewish Conservative, Orthodox, Reform and non-Jewish males were significantly different in academic motivation and aptitude.

The Female Analysis of Variance for
Academic Motivation and Aptitude
between Jewish Conservative,
Orthodox, Reform and Non-
Jewish Students

Between and within sum of squares, mean squares, and F ratios are presented in Table 4.2.

The null hypothesis tested was:

H_{01} : There is no difference in academic motivation and aptitude between Jewish Conservative, Orthodox, and Reform male or female students, each, and non-Jewish male or female students.

Inspection of Table 4.2 reveals significant F at the .01 level between the four female groups for the GSCI $F = 6.4$ and aptitude $F = 10.0$. Insignificant F's were obtained for the PJCS $F = 0.82$, WRL $F = 0.67$, HTI $F = 0.16$, and M-Scale total $F = 1.7$.

Null Hypothesis 1 was accepted concluding that the four female groups did not differ significantly in academic motivation (except GSCI).

Null Hypothesis 1 was rejected concluding that the four female groups were significantly different in the GSCI and aptitude.

TABLE 4.2--Analysis of variance for academic motivation and aptitude between Jewish Conservative, Orthodox, Reform and non-Jewish females.

Variable	Source of Variance	Sum of Squares	Degrees of Freedom	Mean Squares	F
GSCI	Between groups	535.3	3	177.1	6.4*
	Within groups	10037.6	373	27.3	
	Total	10572.9	376		
PJCS	Between groups	74.8	3	24.5	0.82
	Within groups	1117.5	373	29.1	
	Total	11252.3	376		
WRL	Between groups	161.4	3	53.6	0.67
	Within groups	30894.3	373	82.5	
	Total	31055.7	376		
HTI	Between groups	102.8	3	34.2	0.16
	Within groups	7045.2	373	18.7	
	Total	7148.0	376		
M-Scale Total	Between groups	9817.5	3	3287.0	1.7
	Within groups	63941.7	373	1725.2	
	Total	73759.4	376		
Aptitude	Between groups	30.4	3	10.1	10.0*
	Within groups	404.2	373	1.1	
	Total	434.6	376		

*Significant at the .01 level.

**Significant at the .05 level.

The Male Analysis of Variance for
Parental Socio-Economic Status
between Jewish Conservative,
Orthodox, and Reform Students

Between and within sum of squares, mean squares, and F ratios are presented in Table 4.3.

The null hypothesis tested was:

Ho₄: There is no difference in parental socio-economic status (SES) between Jewish Conservative, Orthodox, and Reform male or female students.

Inspection of Table 4.3 indicates significant differences at the .01 level between the three Jewish male groups in parental SES, $F = 53.2$.

Null Hypothesis 4 was rejected concluding that the Jewish Conservative, Orthodox, and Reform male students were significantly different in parental socio-economic status.

The Female Analysis of Variance for
Parental Socio-Economic Status
between Jewish Conservative, Orthodox,
and Reform Students

Between and within sum of squares, mean squares, and F ratios are presented in Table 4.4.

The null hypothesis tested was:

Ho₄: There is no difference in parental socio-economic status (SES) between the Jewish Conservative, Orthodox, and Reform male or female students.

TABLE 4.3--Analysis of variance for socio-economic status (SES) Conservative, Orthodox,
and Reform males.

Variable	Source of Variance	Sum of Squares	Degrees of Freedom	Mean Squares	F
SES	Between groups	4231.2	2	2115.1	53.2*
	Within groups	7827.1	198	39.3	
	Total	12058.3	200		

*Significant at the .01 level.

TABLE 4.4--Analysis of variance for parental socio-economic status (SES) between Jewish
Conservative, Orthodox, and Reform females.

Variable	Source of Variance	Sum of Squares	Degrees of Freedom	Mean Squares	F
SES	Between groups	3482.2	2	1741.	71.1*
	Within groups	4567.4	184	24.6	
	Total	8049.6	186		

*Significant at the .01 level.

Inspection of Table 4.4 indicates significant differences at the .01 level between the three Jewish female groups in parental socio-economic status, $F = 71.1$.

Null Hypothesis 4 was rejected concluding that the Jewish Conservative, Orthodox, and Reform female students were significantly different in parental socio-economic status.

Results of Analysis of Co-Variance

The Male Analysis of Co-Variance for Academic Motivation between Jewish Conservative, Orthodox, Reform and Non-Jewish Students

Sum of squares, mean squares, and F ratios are presented in Table 4.5.

The null hypothesis tested was:

H2: There is no difference in academic motivation (when aptitude is controlled for) between the Jewish Conservative, Orthodox, and Reform male or female students and the non-Jewish male or female students.

Inspection of Table 4.5 indicates that when aptitude is controlled, the four male groups differ significantly at the .01 level in the GSCI $F = 4.5$, PJCS $F = 3.5$, HTI $F = 20.2$, and M-Scale total $F = 9.4$; and at the .05 level in the WRL $F = 2.2$.

Null Hypothesis 2 was rejected. The Jewish Conservative, Orthodox, Reform, and non-Jewish males differed significantly in academic motivation when aptitude was controlled.

TABLE 4.5--Analysis of co-variance for academic motivation for Jewish Conservative,
Orthodox, Reform and non-Jewish males.

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F
GSCI	356.3	118.1	3	4.5*
Error	10435.7	26.1	376	--
Total	10792.0	--	379	--
PJCS	70.0	33.3	3	3.5*
Error	3475.1	9.5	376	--
Total	35451.4	--	379	--
WRL	609.3	203.0	3	2.2**
Error	36428.1	97.4	376	--
Total	37037.4	--	379	--
HTI	1063.1	353	3	20.2*
Error	6372.4	17.4	376	--
Total	7435.5	--	379	--
Total M-Scale	1452.5	481	3	9.4*
Error	116048.9	52.1	376	--
Total	117501.4	--	379	--

*Significant at the .01 level.

**Significant at the .05 level.

The Female Analysis of Co-Variance
for Academic Motivation between
Jewish Conservative, Orthodox,
Reform and Non-Jewish Students

Sum of squares, mean squares, and F ratios are presented in Table 4.6.

The null hypothesis tested was:

H_{02} : There is no difference in academic motivation (when aptitude is controlled for) between the Jewish Conservative, Orthodox, and Reform male or female students and the non-Jewish male or female students.

Inspection of Table 4.6 indicates that when aptitude was controlled only the GSCI $F = 5.0$ and M-Scale total $F = 16.2$ were significantly different at the .01 level between the four female groups. The PJCS $F = 0.5$, WRL $F = 0.42$, and HTI $F = 1.46$ were not significantly different between the four female groups.

Null Hypothesis 2 was rejected for the GSCI and M-Scale total only and accepted for the PJCS, WRL, and HTI.

Results of the Scheffé Test

Results of the Scheffé Test Comparing
Academic Motivation and Aptitude
between Jewish and Non-Jewish
Male Groups

For the Jewish and non-Jewish males means and F ratios are presented in Table 4.7.

The null hypothesis tested was:

TABLE 4.6--Analysis of co-variance for academic motivation for Jewish Conservative,
Orthodox, Reform and non-Jewish females.

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F
GSCI	384.3	128.1	3	5.0*
Error	9628.6	25.9	373	--
Total	10012.9	--	376	--
PJCS	46.1	15.3	3	0.50
Error	11048.8	29.5	373	--
Total	11094.9	--	376	--
WRL	14.7	37.1	3	0.42
Error	30085.8	82.1	373	--
Total	30200.5	--	376	--
HTI	83.2	27.7	3	1.46
Error	7015.2	18.9	373	--
Total	7098.4	--	376	--
Total M-Scale	1236.8	412.0	3	16.2*
Error	6471.0	17.1	373	--
Total	7707.8	--	376	--

*Significant at the .01 level.

Ho_{1a}: Jewish Conservative, Orthodox, and Reform male or female students, each, will not exceed the non-Jewish male or female students in academic motivation and aptitude.

Jewish Conservative versus non-Jewish males.--Inspection of Table 4.7 reveals significant F's at the .01 level in PJCS F = 6.1, WRL F = 6.5, HTI F = 8.2, M-Scale total F = 13.2, and aptitude F = 3.8 all in favor of the Conservative males. Significant F's at the .05 level were obtained from the GSCI F = 2.8 in favor of the Conservative males.

Null Hypothesis 1a was rejected concluding that the Jewish Conservative males exceeded the non-Jewish males in academic motivation and aptitude.

Jewish Orthodox versus non-Jewish males.--Inspection of Table 4.7 reveals significant F's at the .01 level for the GSCI F = 4.4, PJCS F = 5.4, WRL F = 6.5, HTI F = 4.5, M-Scale total F = 16.7, and aptitude F = 4.4, all in favor of the Jewish Orthodox males.

Null Hypothesis 1a was rejected concluding that the Jewish Orthodox males exceeded the non-Jewish males in academic motivation and aptitude.

Jewish Reform versus non-Jewish male.--Inspection of Table 4.7 reveals significant F's at the .01 level for the GSCI F = 5.5, PJCS F = 5.9, WRL F = 3.9, HTI F = 4.0, M-Scale total F = 13.6, and aptitude F = 3.8 all in favor of the Jewish Reform males.

TABLE 4.7--The Scheffé test comparing mean academic motivation and aptitude for Jewish Conservative, Orthodox, and Reform males, each, with non-Jewish males.

Variable	Males						Males						Males					
	Jewish Conservative			Non-Jewish			Jewish Orthodox			Non-Jewish			Jewish Reform			Non Jewish		
	Mean	Error Mean Square	df	Mean	Error Mean Square	df	Mean	Error Mean Square	df	Mean	Error Mean Square	df	Mean	Error Mean Square	df	Mean	Error Mean Square	df
GSCI	36.2	8.2	32.3	10.4	239	2.8**	39.6	7.2	32.3	10.4	275	4.4*	34.5	9.8	32.3	10.4	221	5.5*
PJCS	17.8	9.2	16.0	5.2	"	6.1*	19.8	5.5	16.0	5.2	"	5.4*	16.2	4.7	16.0	5.2	"	5.9*
WRL	31.6	9.8	25.0	7.8	"	6.5*	34.9	6.8	25.0	7.8	"	6.5*	28.5	6.2	25.0	7.8	"	3.9*
HTI	20.8	7.2	16.4	4.9	"	8.2*	24.4	4.9	16.4	4.9	"	4.5*	18.2	3.3	16.4	4.9	"	4.0*
M-Scale Total	106.4	34.4	89.7	28.3	"	13.2*	119.7	23.4	89.7	28.3	"	16.7*	97.4	24.0	91.7	28.3	"	13.0*
Aptitude	17.8	2.2	13.4	11.3	"	3.8*	20.2	5.1	13.4	11.3	"	4.4*	15.5	1.8	13.4	11.3	"	3.8*

*Significant at the .01 level.
 **Significant at the .05 level.

Null Hypothesis 1a was rejected concluding that the Jewish Reform males exceeded the non-Jewish males in academic motivation and aptitude.

Results of the Scheffé Test Comparing Academic Motivation and Aptitude between Jewish and Non-Jewish Female Groups

Means and F ratios for the Jewish and non-Jewish females are presented in Table 4.8.

The null hypothesis tested was:

H_{01a} : Jewish Conservative, Orthodox, and Reform male or female students, each, will not exceed the non-Jewish male or female students in academic motivation and aptitude.

Jewish Conservative versus non-Jewish females.--

Inspection of Table 4.8 reveals significant F's at the .01 level for the M-Scale total $F = 23.6$ and aptitude $F = 3.6$ in favor of the Jewish Conservative females. Significant F's at the .05 level were obtained in GSCI $F = 2.8$, PJCS $F = 2.9$, WRL $F = 2.7$, and HTI $F = 2.6$ all in favor of the Jewish Conservative females.

Null Hypothesis 1a was rejected concluding that the Jewish Conservative females exceeded the non-Jewish females in academic motivation and aptitude.

Jewish Orthodox versus non-Jewish females.--Inspection of Table 4.8 reveals significant F's at the .01 level in M-Scale total $F = 24.5$ and aptitude $F = 3.8$ in favor of the

TABLE 4.8--The Scheffé test comparing mean academic motivation and aptitude for Jewish Conservative, Orthodox, and Reform females, each, with non-Jewish females.

Variable	Females						Females											
	Jewish Conservative			Non-Jewish			Jewish Orthodox			Non-Jewish								
	Error Mean Square	Mean Square	df	F	Error Mean Square	Mean Square	Error Mean Square	Mean Square	df	F	Error Mean Square	Mean Square						
GSCI	25.4	5.9	20.1	4.3	1 & 248	2.8**	29.8	6.9	20.1	4.3	1 & 270	2.6**	32.3	3.9	20.1	4.3	1 & 236	2.8**
PJCS	27.5	6.7	24.8	5.1	"	2.9**	29.5	5.4	24.8	5.1	"	2.8**	25.8	4.5	20.1	5.1	"	2.6**
WRL	27.5	6.9	25.0	4.9	"	2.7**	29.0	5.2	25.0	4.9	"	2.9**	26.1	4.6	20.1	4.9	"	2.2**
HTI	17.7	3.3	12.1	2.8	"	2.6**	19.9	3.8	12.1	2.8	"	2.5**	15.1	3.3	12.1	2.8	"	3.2*
M-Scale Total	99.9	22.8	82.0	17.1	"	23.6*	107.2	21.3	82.0	17.1	"	24.5*	89.7	16.3	82.0	17.1	"	13.1*
Aptitude	16.8	2.3	9.7	1.2	"	3.6**	19.6	2.4	9.7	1.2	"	3.8*	12.2	1.1	9.7	1.2	"	3.1*

*Significant at the .01 level.

**Significant at the .05 level.

Jewish Orthodox females. Significant F's at the .05 level were observed in GSCI $F = 2.6$, PJCS $F = 2.8$, WRL $F = 2.9$, and HTI $F = 2.5$ all in favor of the Jewish Orthodox females.

Null Hypothesis 1a was rejected concluding that the Jewish Orthodox females exceeded the non-Jewish females in academic motivation and aptitudes.

Jewish Reform versus non-Jewish females.--Inspection of Table 4.8 reveals significant F's at the .01 level for HTI $F = 3.2$, M-Scale total $F = 13.1$, and aptitude $F = 3.1$ in favor of the Reform females. Significant difference at the .05 level were obtained in the GSCI $F = 2.8$, PJCS $F = 2.6$, and WRL $F = 2.2$ all in favor of the Jewish Reform females.

Null Hypothesis 1a was rejected concluding that the Jewish Reform females exceeded the non-Jewish females in academic motivation and aptitude.

Results of the Scheffé Test Comparing
Adjusted Means of Academic Motivation
between Jewish and Non-Jewish Males

Adjusted means and F ratios for the Jewish and non-Jewish males are presented in Table 4.9.

The null hypothesis tested was:

H_{02a} : Jewish Conservative, Orthodox, and Reform male or female students, each, will not exceed the non-Jewish males or females when aptitude is controlled for.

Jewish Conservative versus non-Jewish males.--Inspection of Table 4.9 reveals significant F's at the .01 level in WRL $F = 5.9$, HTI $F = 7.1$, and M-Scale total $F = 12.6$ in favor of the Jewish Conservative males. Significant F's at the .05 level were obtained in GSCI $F = 2.5$ and PJCS $F = 2.6$ in favor of the Jewish Conservative males.

Null Hypothesis 2a was rejected concluding that the Jewish Conservative males exceeded the non-Jewish males in academic motivation when aptitude was controlled.

Jewish Orthodox versus non-Jewish males.--Inspection of Table 4.9 reveals significant F's at the .01 level in GSCI $F = 3.4$, PJCS $F = 5.8$, WRL $F = 6.1$, HTI $F = 4.4$, and M-Scale total $F = 16.5$ all in favor of the Jewish Orthodox males.

Null Hypothesis 2a was rejected concluding that the Jewish Orthodox males exceeded the non-Jewish males in academic motivation when aptitude was controlled.

Jewish Reform versus non-Jewish males.--Inspection of Table 4.9 reveals significant F's at the .01 level in M-Scale total $F = 10.4$ in favor of the Jewish Reform males. Significant F's at the .05 level were obtained in GSCI $F = 2.6$, WRL $F = 2.9$, PJCS $F = 2.7$, and HTI $F = 2.8$ all in favor of the Jewish Reform males.

Null Hypothesis 2a was rejected concluding that the Jewish Reform males exceeded the non-Jewish males in academic motivation when aptitude was controlled.

TABLE 4.9--The Scheffé test comparing adjusted mean academic motivation for Jewish Conservative, Orthodox, and Reform males, each, with non-Jewish males.

Variable	Males						Males						Males					
	Jewish Conservative			Non-Jewish			Jewish Orthodox			Non-Jewish			Jewish Reform			Non-Jewish		
	Mean	Square	Error	Mean	Square	Error	Mean	Square	Error	Mean	Square	Error	Mean	Square	Error	Mean	Square	Error
			df			F			df			F			df			F
GSCI	35.1	6.2	30.3	9.5	239	2.5**	38.9	7.0	275	30.3	9.5	3.4*	32.2	9.5	221	30.3	9.5	2.6**
PJCS	17.6	7.8	15.0	4.9	"	2.6**	19.5	5.3	"	15.0	4.9	5.8*	16.1	4.5	"	15.0	4.9	2.7**
WRL	30.2	9.4	24.5	7.3	"	5.9*	34.1	5.9	"	24.5	7.3	6.1*	28.2	5.9	"	24.5	7.3	2.9**
HTI	20.3	7.1	16.2	4.5	"	7.1*	24.1	4.5	"	16.2	4.5	4.4*	18.0	3.1	"	16.2	4.5	2.8**
M-Scale Total	103.2	30.5	86.0	26.2	"	12.6*	116.6	22.7	"	86.0	26.2	16.5*	94.5	23.0	"	86.0	26.2	10.4*

*Significant at the .01 level.

**Significant at the .05 level.

Results of the Scheffé Test Comparing
Adjusted Means of Academic Motivation
between Jewish and Non-Jewish Females

Adjusted means and F ratios for the Jewish and non-Jewish females are presented in Table 4.10.

The null hypothesis tested was:

Ho_{2a}: Jewish Conservative, Orthodox, and Reform male or female students, each, will not exceed the non-Jewish male or female students in academic motivation when aptitude is controlled for.

Jewish Conservative versus non-Jewish females.--

Inspection of Table 4.10 reveals significant F's at the .05 level for the GSCI F = 2.6 in favor of the Jewish Conservative females.

Null Hypothesis 2a was rejected concluding that when aptitude was controlled the Jewish Conservative females exceeded the non-Jewish females in the GSCI sub-test only.

Insignificant F's were obtained for the PJCS F = 1.9, WRL F = 1.6, HTI F = 1.7, and M-Scale total F = 1.5.

Null Hypothesis 2a was accepted concluding that when aptitude was controlled the Jewish Conservative females did not exceed the non-Jewish females in academic motivation (except GSCI).

Jewish Orthodox versus non-Jewish females.--Inspection of Table 4.10 reveals significant F's at the .01 level in GSCI F = 3.5 and M-Scale total F = 3.4 in favor of the Jewish Orthodox females.

Null Hypothesis 2a was rejected concluding that when aptitude was controlled the Jewish Orthodox females exceeded the non-Jewish females in the GSCI and total M-scale scores only. Insignificant F's were obtained for the PJCS $F = 2.1$, WRL $F = 2.0$, and HTI $F = 2.2$.

Null Hypothesis 2a was accepted concluding that when aptitude was controlled the Jewish Orthodox females did not exceed the non-Jewish females in academic motivation (except in GSCI and M-Scale total).

Jewish Reform versus non-Jewish females.--Inspection of Table 4.10 reveals significant F's at the .05 level for the GSCI $F = 2.6$ in favor of the Jewish Reform females. Insignificant F's were obtained for the PJCS $F = 2.2$, WRL $F = 2.1$, HTI $F = 1.9$, and M-Scale total $F = 1.3$.

Null Hypothesis 2a was rejected concluding that when aptitude was controlled the Jewish Reform females exceeded the non-Jewish females in GSCI only. Null Hypothesis 2a was accepted concluding that when aptitude was controlled the Jewish Reform females did not differ in academic motivation (except GSCI), from the non-Jewish females.

Results of the Scheffé Test Comparing Academic Motivation, Achievement, Aptitude, and Parental SES between the Jewish Male Groups

Means and F ratios for the Jewish Conservative, Orthodox, and Reform males are presented in Table 4.11.

The null hypotheses tested were:

TABLE 4.10--The Scheffé test comparing adjusted mean academic motivation for Jewish Conservative, Orthodox, and Reform females, each, with non-Jewish female.

Variable	Females						Females						Females					
	Jewish Conservative			Non-Jewish			Jewish Orthodox			Non-Jewish			Jewish Reform			Non-Jewish		
	Mean	Error Mean Square	df	Mean	Error Mean Square	df	Mean	Error Mean Square	df	Mean	Error Mean Square	df	Mean	Error Mean Square	df	Mean	Error Mean Square	df
GSCI	25.2	5.7	248	20.0	4.1	248	29.1	6.5	270	20.0	4.1	270	24.1	2.8	235	20.0	4.1	235
PJCS	24.9	6.5	"	24.7	5.0	"	26.9	5.2	"	24.7	5.0	"	21.0	4.2	"	24.7	5.0	"
WRL	25.1	6.4	"	24.9	4.7	"	26.9	4.1	"	24.9	4.7	"	21.1	4.0	"	24.9	4.7	"
HTI	12.6	2.1	"	11.9	2.5	"	13.5	2.8	"	11.9	2.5	"	13.1	3.2	"	11.9	2.5	"
M-Scale Total	82.8	20.7	"	81.5	17.2	"	96.2	18.6	"	81.5	17.2	"	72.2	14.2	"	81.5	17.2	"

*Significant at the .01 level.

**Significant at the .05 level.

Ho₃: There is no difference in academic motivation, achievement, and aptitude between the Jewish Conservative, Orthodox, and Reform male or female students.

The alternate hypothesis was:

Ho_{3a}: Jewish Orthodox male or female students, each, will not exceed the Conservative and Reform students in academic motivation, achievement, and aptitude.

The hypothesis testing parental SES was:

Ho₄: There is no difference in parental socioeconomic status (SES) between the Jewish Conservative, Orthodox, and Reform male and female students.

The alternate hypothesis was:

Ho_{4a}: Jewish Reform male or female students, each, will not exceed the Conservative and Orthodox male or female students in parental socioeconomic status.

Jewish Orthodox versus Conservative males.--Inspection of Table 4.11 reveals significant F's at the .01 level in GSCI $F = 4.2$, M-Scale total $F = 17.4$, and aptitude $F = 3.7$ in favor of the Orthodox males. Significant F's at the .05 level were obtained in PJCS $F = 2.7$, WRL $F = 2.1$, HTI $F = 2.8$, and achievement $F = 2.9$ in favor of the Orthodox males.

Null Hypothesis 3 was rejected concluding that there were significant differences in academic motivation, achievement, and aptitude between the Conservative and Orthodox males.

Null Hypothesis 3a was rejected concluding that the Jewish Orthodox males exceeded the Conservative males in academic motivation, aptitude, and achievement. Insignificant F's were obtained for parental SES $F = 1.7$.

Null Hypothesis 4 was accepted concluding that there was no difference in parental SES between the Conservative and Orthodox males.

Jewish Conservative versus Reform males.--Inspection of Table 4.11 reveals significant F's at the .01 level in M-Scale total $F = 8.7$ in favor of the Conservative males. Significant F's at the .05 level were obtained in GSCI $F = 2.6$, WRL $F = 2.7$, HTI $F = 2.5$, achievement $F = 2.2$, and aptitude $F = 2.9$ in favor of the Conservative males.

Null Hypothesis 3 was rejected concluding that there were significant differences in academic motivation, aptitude, and achievement between the Conservative and Reform males.

Null Hypothesis 3a was rejected concluding that the Jewish Conservative males exceeded the Reform males in academic motivation, aptitude, and achievement.

Insignificant F was obtained for PJCS $F = 1.9$. Null Hypothesis 3 was accepted concluding that for the PJCS

there were no significant differences between the Conservative and Reform males.

A significant F at the .01 level was obtained for parental SES $F = 10.8$ in favor of the Reform males. Null Hypothesis 4 and 4a were rejected concluding that the Conservative and Reform males differed in parental SES, and that the Reform males exceeded the Conservative males in parental SES.

Jewish Orthodox versus Reform males.--Inspection of Table 4.11 reveals significant F's at the .01 level in GSCI $F = 5.4$, PJCS $F = 3.9$, WRL $F = 7.4$, HTI $F = 5.8$, M-Scale total $F = 13.7$, and aptitude $F = 4.1$ in favor of the Orthodox males. Significant difference at the .05 level were obtained for achievement $F = 2.7$.

Null Hypothesis 3 was rejected concluding that the Orthodox and Reform males differed significantly in academic motivation, achievement, and aptitude.

Null Hypothesis 3a was rejected concluding that the Jewish Orthodox males exceeded the Reform males in academic motivation, aptitude, and achievement.

A significant F at the .01 level was obtained for parental SES $F = 10.5$ in favor of the Reform males.

Null Hypothesis 4 and 4a were rejected concluding that there was a significant difference in parental SES between the Orthodox and Reform males and that the Reform males exceeded the Orthodox males in parental SES.

Results of the Scheffé Test Comparing
Academic Motivation, Achievement,
Aptitude, and Parental SES between
the Jewish Female Groups

Means and F ratios for the Jewish Conservative, Orthodox, and Reform females are presented in Table 4.12.

Jewish Orthodox versus Conservative females.--Inspection of Table 4.12 reveals significant F's at the .01 level in GSCI $F = 3.1$, M-Scale total $F = 7.8$, and aptitude $F = 3.8$ in favor of the Orthodox females. Significant F's at the .05 level were obtained in PJCS $F = 2.7$, WRL $F = 2.6$, HTI $F = 2.5$, and achievement $F = 2.5$ in favor of the Orthodox females.

Null Hypothesis 3 and 3a were both rejected concluding that the Orthodox females differed significantly from and exceeded the Conservative females in academic motivation, achievement, and aptitude.

An insignificant F was obtained in parental SES $F = 1.8$. Null Hypothesis 4 was accepted concluding that there was no difference in parental SES between the Orthodox and Conservative females.

Jewish Conservative versus Reform females.--Inspection of Table 4.12 reveals significant differences at the .01 level in WRL $F = 3.1$ and M-Scale total $F = 3.3$ in favor of the Conservative females. Significant differences at the .05 level were obtained in GSCI $F = 2.3$, PJCS $F = 2.5$, and aptitude $F = 2.8$ in favor of the Conservative females. The HTI $F = 1.6$ and achievement $F = 1.1$ were not significant

between the two groups. Parental SES was significant at the .01 level $F = 6.3$ in favor of the Reform females.

Null Hypothesis 3 and 3a were rejected concluding that the Conservative females differed significantly from and exceeded the Reform females in academic motivation (except HTI) and aptitude.

Null Hypothesis 3 was accepted concluding that the Jewish Conservative and Reform females did not differ in HTI and achievement.

Null Hypothesis 4 and 4a were rejected concluding that there was a significant difference in parental SES between the Conservative and Reform females, and that the Reform females exceeded the Conservative in parental SES.

Jewish Orthodox versus Reform females.--Inspection of Table 4.12 reveals significant F 's at the .01 level in the GSCI $F = 4.6$, WRL $= 3.6$, PJCS $F = 4.3$, M-Scale total $F = 11.2$, and aptitude $F = 4.5$ in favor of the Orthodox females. Significant F 's at the .05 level were obtained in HTI $F = 2.7$ and achievement $F = 2.7$ in favor of the Orthodox females.

Null Hypothesis 3 and 3a were rejected concluding that the Orthodox females both differed from and exceeded the Reform females in academic motivation, achievement, and aptitude.

Significant F at the .01 level was obtained for parental SES $F = 12.3$ in favor of the Reform females.

TABLE 4.12--The Scheffé test comparing mean academic motivation, achievement, aptitude, and parental SES between Jewish Conservative, Orthodox, and Reform females.

Variable	Females						Females					
	Orthodox			Conservative			Orthodox			Reform		
	Mean	Square	Error	Mean	Square	Error	Mean	Square	Error	Mean	Square	Error
			df			df			df			df
GSCI	29.1	6.5	139	25.2	5.7	139	29.1	6.5	139	24.1	2.8	127
PJCS	26.9	5.2	"	24.9	6.5	"	26.9	5.2	"	21.0	4.2	"
WRL	26.9	4.1	"	25.1	6.4	"	26.9	4.1	"	21.0	4.0	"
HTI	13.5	2.8	"	12.6	2.1	"	13.5	2.8	"	11.1	3.2	"
M-Scale Total	96.2	18.6	"	82.8	20.7	"	96.2	18.6	"	72.2	14.2	"
Achievement	2.8	1.2	"	1.3	1.0	"	2.8	1.2	"	1.2	1.1	"
Aptitude	19.6	2.4	"	16.8	2.3	"	19.6	2.4	"	17.2	1.1	"
SES	59.6	13.2	"	60.1	14.5	"	59.6	13.2	"	79.5	17.7	"

*Significant at the .01 level.

**Significant at the .05 level.

¹Adjusted mean for academic motivation.

Null Hypothesis 4 and 4a were both rejected concluding that there was a difference in parental SES between the Orthodox and Reform females and that the Reform females exceeded the Orthodox females in parental SES.

Results of Correlational Analysis

Intercorrelations between Academic Motivation, Achievement, Aptitude, and Parental SES for Jewish Conservative, Orthodox and Reform Males

Intercorrelations for the Jewish Conservative, Orthodox, and Reform males are presented in Table 4.13-4.15.

The null hypothesis tested was:

H_{05} : There is no significant relationships between each of the following variables: academic motivation, sub- and total M-Scale scores, achievement, aptitude, and parental socioeconomic status for the Jewish Conservative, Orthodox, and Reform male students.

Intercorrelations for Jewish Conservative males.--

Intercorrelations for the Conservative males are presented in Table 4.13.

Inspection of the table reveals correlations significant from zero at the .01 level between academic motivation sub-scales ranging from .39 to .54, and between sub-scales and M-Scale total ranging from .39 to .84. Correlation between aptitude and academic motivation sub- and total M-Scale were found to be significantly different from zero at .05 level and ranged from .30 to .38.

TABLE 4.13--Intercorrelations between motivation, aptitude, achievement and parental SES
for Jewish male Conservative Students
N=61

Variable	PJCS	WRL	HTI	M-Scale Total	DAT-VR	GPA	SES
Generalized Situational Choice Inventory (GSCI)	0.39*	0.40*	0.44*	0.65*	0.38**	0.36**	-0.24
Preferred Job Character- istic Scale (PJCS)		0.39*	0.40*	0.39*	0.34**	0.35**	0.21
Word Rating List (WRL)			0.54*	0.84*	0.30**	0.32**	-0.12
Human Trait Inventory (HTI)				0.78*	0.36**	0.29**	-0.09
M-Scale Total					0.33**	0.33*	-0.12
Aptitude DAT-VR						0.36**	-0.19
Achievement (GPA)							0.05

*p .01 for the test that $r=0$, if $r > 2.58$.

**p .05 for the test that $r=0$, if $r > 1.96$.

Correlations significantly different from zero at .05 level were also obtained between achievement and academic motivation sub- and total M-Scale ranging from .29 to .36. Correlations significantly different from zero at .05 level was obtained between aptitude and achievement .36.

Null Hypothesis 5 was rejected concluding that for the Conservative males significant relationships exist between academic motivation, sub- and total M-Scale scores, achievement and aptitude.

Insignificant correlations were obtained between parental SES and academic motivation, achievement, and aptitude.

Null Hypothesis 5 was accepted concluding that for the Conservative males no significant relationships exist among parental SES and academic motivation, achievement, or aptitude.

Intercorrelation for the Jewish Orthodox males.--

Intercorrelations for the Orthodox males are presented in Table 4.14.

Inspection of this table reveals correlations significantly different from zero at the .01 level between HTI and WRL .55 and between all sub-scales and M-Scale total ranging from .43 to .90. Achievement correlated .40 with aptitude. Correlations significantly from zero at the .05 level were obtained between academic motivation sub-scales ranging from .25 to .37. Correlations between

TABLE 4.14--Intercorrelations between academic motivation, aptitude, achievement and
for parental SES Jewish Orthodox male students.

Variable	PJCS	WRL	HTI	M-Scale Total	SAT-V	GPA	SES
Generalized Situational Choice Inventory (GSCI)	.36**	.27**	.37**	.57*	.20**	.32**	-.12
Preferred Job Character- istic Scale (PJCS)		.25**	.27**	.43*	.30**	.34**	.08
Word Rating List (WRL)			.55*	.95*	.38**	.32**	.14
Human Trait Inventory (HTI)				.74*	.25**	.35**	.13
M-Scale Total					.35**	.30**	-.15
Aptitude SAT-V						.40*	.10
Achievement GPA							.10

*p .01 for the test that $r=0$, if $r > 2.58$.

**p .05 for the test that $r=0$, if $r > 1.96$.

aptitude and academic motivation sub-scales ranged from .20 to .38. Correlations between achievement and academic motivation sub-scales ranged from .30 to .35.

Null Hypothesis 5 was rejected concluding that for the Orthodox males significant relationships exist between academic motivation, achievement, and aptitude.

Parental SES correlated insignificantly with academic motivation, achievement, and aptitude.

Null Hypothesis 5 was accepted concluding that for the Orthodox males no significant relationships exist between parental SES and academic motivation, achievement, or aptitude.

Intercorrelations for the Jewish reform males.--
Intercorrelations for the reform males are presented in Table 4.15.

Inspection of the table reveals correlations significantly different from zero at the .01 level between academic motivation sub-scales ranging from .39 to .66, and between all sub-scales and M-Scale total ranging from .44 to .91. Achievement correlated .50 with GSCI and .48 with M-Scale total.

Correlations significantly different from zero at the .05 level were obtained between aptitude and academic motivation scales ranging from .31 to .38. Achievement correlated .27 with PJCS, .38 with WRL, and .33 with HTI. Achievement and aptitude correlated .33.

TABLE 4.15--Intercorrelations between motivation, aptitude, achievement, and parental SES
for Jewish male Reform students.
N = 43

Variable	PJCS	WRL	HTI	M-Scale Total	DAT-VR	GPA	SES
Generalized Situational Choice Inventory (GSCI)	0.46*	0.49*	0.51*	0.73*	0.36**	0.50*	-0.15
Preferred Job Character- istic Scale (PJCS)		0.39*	0.39*	0.44*	0.30**	0.27**	0.12
Word Rating List (WRL)			0.66*	0.91*	0.31**	0.38**	-0.02
Human Trait Inventory (HTI)				0.82*	0.38**	0.33**	-0.11
M-Scale Total					0.32**	0.48*	-0.07
Aptitude (DAT-VR)						0.32**	0.18
Achievement GPA							-0.14

*p .01 for the test that $r=0$, if $r > 2.58$.

**p .05 for the test that $r=0$, if $r > 1.96$.

Null Hypothesis 5 was rejected concluding that for all Reform males significant relationships exist between academic motivation, achievement, and aptitude.

Insignificant correlations were obtained between parental SES and : academic motivation, achievement, and aptitude.

Null Hypothesis 5 was accepted concluding that for the Reform males no significant relationships exist between parental SES and : academic motivation, achievement, and aptitude.

Intercorrelations between Academic Motivation, Achievement, Aptitude, and Parental SES for the Conservative, Orthodox, and Reform Female Students

Intercorrelations for the Jewish Conservatives, Orthodox, and Reform females are presented in Table 4.16.

The null hypothesis tested was:

H_{05} : There is no significant relationships between each of the following variables: academic motivation, sub- and total M-Scale scores, achievement, aptitude, and parental socio-economic status for the Jewish Conservative, Orthodox, and Reform female students.

Intercorrelations for the Jewish Conservative females.--

Intercorrelation for the Conservative females are presented in Table 4.16.

TABLE 4.16--Intercorrelations between motivation, aptitude, achievement, and parental SES
for Jewish female Conservative students. N = 59

Variable	PJCS	WRL	HTI	M-Scale Total	DAT-VR	GPA	SES
Generalized Situational Choice Inventory (GSCI)	0.45*	0.49*	0.50*	0.75*	0.33**	0.33**	0.22
Preferred Job Character- istic Scale (PJCS)		0.39**	0.39*	0.57*	0.38**	0.36**	0.05
Word Rating List (WRL)			0.68*	0.87*	0.32**	0.33**	0.17
Human Trait Inventory (HTI)				0.77*	0.34**	0.34**	0.03
M-Scale Total					0.33**	0.35**	0.17
Aptitude DAT-VR						0.36**	0.24
Achievement GPA							0.13

*p .01 for the test that $r=0$, if $r > 2.58$.

**p .05 for the test that $r=0$, if $r > 1.96$.

Inspection of Table 4.16 reveals correlations significantly different from zero at the .01 level between academic motivation sub-scales ranging from .39 to .68, and between sub-scales and M-Scale total correlation ranging from .37 to .75.

Correlations significantly different from zero at the .05 level were obtained between aptitude and academic motivation ranging from .32 to .38. Correlations between achievement and academic motivation ranged from .33 to .36. Aptitude and achievement correlated .36.

Insignificant correlations were obtained between parental SES and academic motivation, achievement, and aptitude.

Null Hypothesis 5 was rejected concluding that for the Conservative females there was a significant relationship between academic motivation, achievement, and aptitude.

Null Hypothesis 5 was accepted concluding that for the Conservative females there was no significant relationships between parental SES, academic motivation, achievement, and aptitude.

Intercorrelations for the Orthodox females.--Intercorrelations for the Orthodox females are presented in Table 4.17.

Inspection of the table reveals correlations significantly different from zero at the .01 level between PJCS and HTI .89, WRL and HTI .54, and between M-Scale

TABLE 4.17--Intercorrelations between motivation, aptitude, achievement, and parental SES
for Jewish female Orthodox students. N = 81

Variable	PJCS	WRL	HTI	M-Scale Total	SCAT-V	GPA	SES
Generalized Situational Choice Inventory (GSCI)	0.34**	0.29**	0.32**	0.57*	0.35**	0.38**	0.09
Preferred Job Character- istic Scale (PJCS)		0.34**	0.89*	0.56*	0.36**	0.35**	0.01
Word Rating List (WRL)			0.54*	0.90*	0.34**	0.33**	-0.00
Human Trait Inventory (HTI)				0.68*	0.33**	0.35**	0.04
M-Scale Total					0.36**	0.30**	0.03
Aptitude SCAT-V						0.41*	0.08
Achievement (GPA)						0.05	0.09

*p .01 for the test that $r=0$, if $r > 2.58$.

**p .05 for the test that $r=0$, if $r > 1.96$.

total and all sub-scales ranging from .57 to .90. Aptitude correlated with achievement .41.

Correlations significantly different from zero at the .05 level were obtained between academic motivation sub-scales (except PJCS and HTI, and WRL and HTI) ranging from .29 to .34. Correlations between aptitude and academic motivation sub-scales ranged from .33 to .36; correlations between achievement and academic motivation sub-scales ranged from .33 to .38.

Insignificant correlations were obtained between parental SES and : academic motivation, achievement, and aptitude.

Null Hypothesis 5 was rejected concluding that for the Orthodox females there was a significant relationship between academic motivation, achievement, and aptitude.

Null Hypothesis 5 was accepted concluding that for the Orthodox females there was no significant relationship between parental SES and : academic motivation, aptitude, and achievement.

Intercorrelations for the Jewish Reform females.--
Intercorrelations for the Reform females are presented in Table 4.18.

Inspection of this table reveals correlations significantly different from zero at the .01 level between academic motivation sub-scales ranging from .41 to .70, and between sub-scales and M-Scale total ranging from .73 to .90.

TABLE 4.18--Intercorrelations between motivation, aptitude, achievement, and parental SES
for Jewish female Reform students.
N = 47

Variable	PJCS	WRL	HTI	M-Scale Total	DAT-VA	GPA	SES
Generalized Situational Choice Inventory (GSCI)	0.70*	0.68*	0.61*	0.87*	0.32**	0.36**	0.18
Preferred Job Character- istic Scale (PJCS)		0.47*	0.41*	0.73*	0.39*	0.38**	0.08
Word Rating List (WRL)			0.68*	0.90*	0.37**	0.35**	0.04
Human Trait Inventory (HTI)				0.81*	0.37**	0.33**	-0.10
M-Scale Total					0.30**	0.32**	0.05
Aptitude DAT-VR						0.30**	-0.00
Achievement GPA							-0.03

*p .01 for the test that $r=0$, if $r > 2.58$.

**p .05 for the test that $r=0$, if $r > 1.96$.

Correlations significantly different from zero at the .05 level were obtained between aptitude and academic motivation ranging from .32 to .39. Correlations between achievement and academic motivation ranged from .32 to .38. Aptitude and achievement correlated .30.

Insignificant correlations were obtained between parental SES and : academic motivation, aptitude, and achievement.

Null Hypothesis 5 was rejected concluding that for the Reform females there was a significant relationship between academic motivation, aptitude, and achievement.

Null Hypothesis 5 was accepted concluding that for the Reform females there was no significant relationship between parental SES and : academic motivation, achievement, and aptitude.

Results of Regression Analysis

Regression Analysis for the Jewish Conservative, Orthodox, and Reform Male Students

Results of the regression analysis for the Jewish Conservative, Orthodox, and Reform males are presented in Table 4.19.

The null hypothesis tested was:

Ho₆: Adding the sub- or total M-Scale scores to an aptitude measure will not increase the precision of prediction of academic achievement (GPA) for the Jewish Conservative, Orthodox, and Reform male students.

TABLE 4.19--Tests of significance of increase in precision of academic motivation sub- and total M-scales to aptitude to estimate achievement for Conservative, Orthodox, and Reform males.

Academic Motivation Scales	Conservative Males F	Reform Males F	Orthodox Males F
	df= 1 & 60	df= 1 & 42	df= 1 & 96
Generalized Situational Choice Inventory (GSCI)	5.61**	8.57*	8.2*
Preferred Job Characteristic Scale (PJCS)	-1.47	3.06	7.3*
Word Rating List (WRL)	-3.08	7.08*	6.5*
Human Trait Inventory (HTI)	5.46*	5.63**	6.5*
Total M-Scale	8.17*	10.2*	8.5*

*Significant at .01 level.

**Significant at .05 level.

Inspection of Table 4.19 indicates significant F's at the .01 level for HTI $F = 5.46$ and M-Scale total $F = 8.17$ for all Conservative males; for GSCI $F = 8.57$, WRL $F = 7.08$, and M-Scale total $F = 10.2$ for the Reform males; and for all academic motivation sub- and total M-Scale scores for the Orthodox males.

At the .05 level the GSCI $F = 5.61$ for the Conservatives, and the HTI $F = 5.63$ for the Reform were found to be significant when added to aptitude.

Null Hypothesis 6 was rejected for the above scales concluding that when they were added to aptitude they increased significantly the precision of prediction of academic achievement.

The PJCS and WRL scales for the Conservative males, and the PJCS for the Reform males when added to aptitude did not increase significantly the precision of predicting academic achievement.

Null Hypothesis 6 was accepted concluding that for the Conservative and Reform males the PJCS and WRL did not increase significantly the precision of prediction of academic achievement.

Regression Analysis for Jewish Conservative, Orthodox, and Reform Female Students

Results of the regression analysis for the Conservative, Orthodox, and Reform females are presented in Table 4.20.

The null hypothesis tested was:

Ho₆: Adding the sub- or total M-Scale scores to an aptitude measure will not increase the precision of prediction of academic achievement for the Jewish Conservative, Orthodox, and Reform female students.

Inspection of Table 4.20 reveals significant F's at the .01 level for the GSCI $F = 7.81$, and M-Scale total $F = 4.8$ for the Conservative females.

Significant F's were obtained for all academic motivation scales for the Orthodox females. Insignificant F's were obtained with the academic motivation scales for the Reform females.

Null Hypothesis 6 was rejected concluding that for the Conservative and Orthodox females the above named scales did increase the precision of prediction of academic achievement.

Null Hypothesis 6 was accepted concluding that for the Reform females academic motivation scales when added to aptitude did not increase the precision of prediction of academic achievement.

TABLE 4.20--Tests of significance of increase in precision of academic motivation, sub- and total M-Scales to aptitude to estimate achievement for Conservative, Orthodox, and Reform females.

Academic Motivation Scales	Conservative Females F	Orthodox Females F	Reform Females F
	df=1 & 58	df=1 & 80	df=1&46
Generalized Situational Choice Inventory (GSCI)	7.81*	19.2*	-3.12
Preferred Job Characteristic Scale (PJCS)	-4.68	9.97*	-0.87
Word Rating List (WRL)	-0.57	10.12*	-1.23
Human Trait Inventory (HTI)	3.93	7.44*	-4.64
Total M-Scale	4.80**	21.2*	0.26

*Significant at the .01 level.

**Significant at the .05 level.

Summary

Results of the analysis of variance indicated the Jewish and non-Jewish male groups to differ significantly in academic motivation and aptitude. The Jewish and non-Jewish female groups were found to differ significantly only in the GSCI and aptitude.

When aptitude was controlled, the Jewish and non-Jewish males were found to be significantly different in academic motivation, while the Jewish and non-Jewish females (except for the GSCI and total M-Scale did not differ significantly in academic motivation. Parental socio-economic status did differ significantly between the three Jewish male groups and the three Jewish female groups, respectively.

Results of the Scheffé test revealed the Jewish Conservative, Orthodox, and Reform males or females, each, to exceed the non-Jewish males and females in academic motivation and aptitude. When aptitude was controlled, the three Jewish male groups exceeded the non-Jewish males in academic motivation, while, except for the GSCI for the Conservative and Reform females and the GSCI and M-Scale total for the Orthodox females, the Jewish and non-Jewish females did not differ significantly in academic motivation. The Scheffé test indicated that the Jewish Conservative males exceeded the Reform males (except in PJCS) and that the Orthodox males exceeded both the Conservative and the Reform males in academic motivation, aptitude, and achievement. The Reform males exceeded both the Orthodox

and Conservative males in parental socio-economic status. For the females, the Orthodox group exceeded both the Conservative and Reform female groups in academic motivation, aptitude, and achievement, while the Conservative females exceeded the Reform females in academic motivation (except HTI and achievement), and aptitude. The Reform females exceeded both the Orthodox and Conservative females in parental socio-economic status.

Correlational analysis for the Jewish males and females revealed that a significant relationship exists between academic motivation, aptitude, and achievement for the Jewish male and female groups. Insignificant relationships were found between parental SES and : academic motivation, achievement, and aptitude.

Results of the regression analysis indicated that for the Orthodox males all academic motivation scales, when added to aptitude, increased the precision of prediction of academic achievement, and, for the Conservative and Reform males only the GSCI, WRL (Reform only), HTI, and M-Scale total did so. For the Orthodox females the academic motivation scales when added to aptitude increased the precision of prediction of achievement. For the Reform females, adding the M-Scale to aptitude did not increase the precision of prediction of achievement. For the Conservative females only the GSCI and M-Scale total increased significantly the precision of prediction of achievement.

CHAPTER V

RESULTS OF THE FACTOR ANALYSIS

The purpose of the factor analysis was to understand the academic motivational structure of the Jewish male and female students' responses to the Generalized Situational Choice Inventory (GSCI).

Forty-five male and thirty female GSCI items were factor analyzed separately.

Results of the GSCI Forty-Five Item Factor Analysis--Jewish Males

The principle axes solution was used for the unrotated factors. The Quartimax method of rotation was used with a minimum eigen value of one as the criteria for rotating a factor. Each factor had to have a loading of $n-1$ items (n = number of factors) before rotation was terminated. In addition, the item content had to make psychological sense. The factors, their content and factor loading are presented in Tables 5.1 through 5.5.

Male Factor I

Sixteen items had the heaviest weighing and met the minimum criteria for interpretation (exceeding the .35 criterion). The underlying theme of the item content was

concerned with the way one approaches his activities. The factor was labeled planned versus impulse activities (Table 5.1).

TABLE 5.1--Item loading for the GSCI Jewish male responses:
Factor I--Planned versus Impulse Activities.

Item Number	Content	Loading
43	Do something that I have done before, or Do something that I have never done before	.70
36	Carry out the plans of others, or Create something of my own	.70
5	Be well prepared for a job after graduation from high school, or Be well prepared to continue learning	.66
4	Buy a car, or Continue my education	.65
15	Do as well as most of my classmates, or Do better than most of my classmates	.62
24	Have everybody in the class get a "C" at the beginning of the course, or Be graded at the end of the course with the possibility of getting higher or lower marks	.61
12	Make quick decisions and sometimes be right and sometimes wrong, or Deliberate over decisions and usually be right	.58
30	Work overtime to make more money, or Earn a great deal of money	.55
6	Have the teacher give everyone the same grade at the beginning of the term and know I passed, or Take chances on getting a higher or lower grade at the end of the course	.54
44	Discover a gold mine, or Discover a new medicine	.51

TABLE 5.1--Continued

Item Number	Content	Loading
39	Be known as a person who knows his own mind, or Be known as a person who gets help in making decisions	.50
18	Work at many less important tasks which I know I could finish, or Work at one very important tasks which may never be entirely finished in my lifetime	.47
22	Have a great deal of money, or Be an expert in my favorite school subject	.44
23	Have average ability and be liked by many people, or Have superior ability but not be liked by as many people	.40
42	Be demanding on myself to do good work, or Be demanding on my friends so that they will do good work	.40
31	Inherit a great deal of money, or Earn a great deal of money	.37

Male Factor II

Nine items exceeded the .35 criterion for factor interpretation. Most of the items dealt with an external standard or doing as well as some average group. The factor was labeled unique versus common accomplishments (Table 5.2).

TABLE 5.2--Item loadings for the GSCI Jewish male responses:
Factor II--Unique versus Common Accomplishments.

Item Number	Content	Loading
37	Be known as being a "good guy" or "good gal," or Be known as a person who "does things well"	.65
28	Think of an idea that no body has ever thought of, or Set a world's speed record	.54
9	Be successful in finishing a job, or Finish a job	.49
16	Be considered as being strong but not very smart, or Be considered as being weak but smart	.45
38	Be very happy, or Have lots of money	.45
32	Wait until I had finished college and make a better salary, or Get a job right after high school and make a good salary	.45
20	Work rapidly just "skimming" along, or Work slowly with great thoroughness	.37
3	Have the best teachers in the state in my school, or Have a large recreation center in my school	.36
2	Receive a grade on the basis of how well I did on the teacher's test, or Get a grade on the basis of how hard I tried	.29

Male Factor III

Seven items exceeded the criterion for factor interpretation. The main theme of the item content dealt with the time dimension of accomplishment. The factor was labeled long term versus short term accomplishment (Table 5.3).

Male Factor IV

Eight items exceeded the .35 criterion. The item content dealt with the degree of effort one is willing to exert. The factor was labeled maximum versus minimum effort (Table 5.4).

Male Factor V

Five items exceeded the criterion of factor interpretation. The theme of the item content had overtones of competing with external standards or passive accomplishing with the least effort. The factor was labeled competition with versus ease of meeting a standard (Table 5.5).

Null Hypothesis 7 was rejected. Factoring all forty-five GSCI male items yielded an interpretable structure supportive of the polar theory of academic motivation.

TABLE 5.3--Item loadings for the GSCI Jewish male responses:
Factor III--Long-Term versus Short-Term Accomplishments.

Item Number	Content	Loading
34	Study to go to college, or Study to get out of high school	.57
19	Be paid for how well I did a job, or Be paid the same amount no matter how I did the job	.55
10	Get excellent grades because I have a great deal of ability, or Get average grades because I have average ability	.45
25	Receive a grade on the basis of how much my teacher thinks I have learned, or Take the course from an instructor who gives "C's"	.45
35	Have a great deal of influence over people, or Have a great deal of ambition	.44
8	Receive money for my good grades, or Be allowed to take any course I wanted because of good grades	.37
29	Do what I think is right, or Do what others think is right	.27

TABLE 5.4--Item loadings for the GSCI Jewish male responses:
Factor IV--Maximum versus Minimum Effort.

Item Number	Content	Loading
13	Be allowed to take extra courses before or after school, or Just take courses offered during the school day	.71
26	Be paid for the amount of work I did, or Be paid by the hour	.56
27	Study my assignments during study hall, or Wait to study until the mood strikes me	.49
33	Plan my life in advance, or Live my life from day to day	.46
17	Be known as a person with much ability, or Be known as a person with average ability	.44
41	Put together a new object, or Develop new ideas	.38
14	Complete a job which I recognize as difficult, or Complete a job which other's recognize as difficult	.38
7	Develop a new product which may or may not be good, or Make a product as good as the best one available	.36

TABLE 5.5--Item loading for the GSCI Jewish male responses:
Factor V--Competition With versus Ease of
Meeting a Standard

Item Number	Content	Loading
11	Be graded at the end of a course with the possibility of making an "A" or Get a "C" at the beginning of a course along with everyone else	.62
1	Avoid failing in school, or Do well in school	.55
45	Have one of my children win a beauty contest, or Have one of my children win a college scholarship	.53
40	Do something like everyone else, or Do something outstanding	.36
21	Have a better job than my father has, or Have a job like my father has	.36

Results of the GSCI Thirty Item Factor
Analysis--Jewish Females

The factors, their content, and factor loadings for the Jewish female responses are presented in Tables 5.6 through 5.9.

Female Factor I

Twelve items exceeded the .35 criterion. The item content dealt mainly with immediate or delayed action. The factor was termed immediate versus long term gratification (Table 5.6).

TABLE 5.6--Item loading for the GSCI Jewish female responses:
Factor I--Immediate versus Long-Term Gratifications.

Item Number	Content	Loading
3	Wait until I had finished college and make a better salary, or Get a job right after high school and make a good salary	.85
6	Be well prepared for a job after graduation from high school, or Be well prepared to continue learning	.82
24	Study to go to college, or Study to get out of high school	.75
5	Buy a car, or Continue my education	.69
29	Work hard to be outstanding, or Work hard enough to pass my courses	.64
8	Have the teacher give everyone the same grade at the beginning of the term and know I passed, or Take chances on getting a higher or lower grade at the end of the course	.43
17	Work hard in everything I do, or Work at things as they come along	.42
14	Have someone show me a solution to a problem, or Take a long time to figure out a problem for myself	.36
28	Stay for an exam one night and know that I would receive an "A" or Go to a party on this night and take a chance on a lower grade	.34
22	Wait ten years and receive fame throughout the nation, or Receive fame in my community overnight	.31
12	Be a person of leisure, or Be a person of action	.26
13	Receive money for good grades, or Have my picture in the paper for good grades	.16

Female Factor II

Seven items met the .35 criterion for factor interpretation. The main theme dealt with the way one views values. The factor was labeled abstract versus materialistic values (Table 5.7).

Female Factor III

Six items met the criteria for factor interpretation. Item content rejected the degree of easiness or difficulty one is willing to meet in accomplishing his tasks. The factor was labeled ease versus difficulties of accomplishment (Table 5.8).

Female Factor IV

Five items met the .35 criterion. Item content dealt with the external standard on doing as well as same size group. The factor was named unique versus common accomplishments (Table 5.9).

Null Hypothesis 7 was rejected. Factoring all thirty GSCI female items yielded an interpretable structure supportive of the polar theory of academic motivation.

TABLE 5.7--Item loading for the GSCI Jewish female responses:
Factor II-Abstract versus Materialistic Values.

Item Number	Content	Loading
16	Be an able person, or Be wealthy	.61
21	Inherit a great deal of money, or Earn a great deal of money	.53
9	Develop a new product which may or may not be good, or Make a product as good as the best one available	.52
3	Be thought of as being a studious person, or Be thought of as being a carefree person	.48
4	Have the best teachers in the state in my high school, or Have a large recreation within my school	.44

TABLE 5.8--Item loading for the GSCI Jewish female responses:
Factor III--Ease versus Difficulties of Accomplishment.

Item Number	Content	Loading
30	Learn by defeating an experienced player, or Learn by losing to an expert	.51
2	Work hard to be smart, or Take it easy and become rich	.51
1	Work hard for what I get, or Just get what I want	.44
20	Save enough money to buy something with cash, or Buy something on credit and pay for it as I want	.39
7	Pass a usual classroom examination, or Pass a college entrance examination	.29
11	Be known to my parents as an intellegent person, or Be known to my parents as a practical person	.28

TABLE 5.9--Item loading for the GSCI Jewish female responses:
Factor IV--Unique versus Common Accomplishments.

Item Number	Content	Loading
15	Be known as a person with much ability, or Be known as a person with specific ability	.50
26	Be known as being a "good guy" or "good gal," or Be known as a person who "does things well"	.44
27	Do something like everyone else, or Do something outstanding	.31
10	Get excellent grades because I have a great deal of ability, or Get average grades because I have average ability	.25
18	Study my assignments during study hall, or Wait to study until the mood strikes me	.24

Summary

Forty-five GSCI male items and thirty GSCI female items were factor analyzed. The principle axes solution was used for the unrotated factors. The Quartimax method of rotation was used with a minimum eigen value of one as the criteria for rotating a factor. Each factor had to have a loading of $n-1$ items before rotation was terminated. In addition, the item content had to make psychological sense. Five male and four female factors were identified. A summary of the factor names and interpretive emphasis is presented in Tables 5.10 and 5.11.

TABLE 5.10--Interpretive emphasis of the male Generalized Situational Choice Inventory factors.

Name	Task Description
Factor I-- Planned vs. Impulse Activities	The high motivated male chooses responses which are planned ahead of time, the low motivated male chooses responses which involves acts that are not thought through.
Factor II-- Unique vs. Common Accomplishments	The high motivated male chooses responses descriptive of unusual tasks for the typical male, the low motivated male chooses to do what most of his classmates will do.
Factor III-- Long Term vs. Short Term Accomplishments	The high motivated male chooses responses which are descriptive of delayed accomplishments, the low motivated male chooses responses which require immediate accomplishments.
Factor IV-- Maximum vs. Minimum Effort	The high motivated male chooses responses indicative of maximum effort, the low motivated male chooses responses which indicate minimum effort.
Factor V-- Competition With vs. Ease of Meeting a Standard	The high motivated male chooses responses describing a standard as personal challenge, the low motivated male chooses the responses which require the least effort.

TABLE 5.11--Interpretive emphasis of the female Generalized Situational Choice Inventory factors.

Name	Task Description
Factor I-- Immediate vs. Long Term Gratification	The high motivated female chooses responses describing delayed rewards, the low motivated female chooses the immediate rewards.
Factor II-- Abstract vs. Materialistic Values	The high motivated female chooses responses characteristic of non-materialistic values, the low motivated female chooses the materialistic.
Factor III-- Ease vs. Difficulties of Accomplishments	The high motivated female chooses responses descriptive of meeting a difficult standard of accomplishment, the low motivated female chooses responses which require easy accomplishments.
Factor IV-- Unique vs. Common Accomplishments	The high motivated female chooses responses descriptive of unusual tasks for the typical female, the low motivated female chooses to do what most of her classmates will do.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study represented an attempt to investigate academic motivation in eleventh grade Jewish and non-Jewish students.

Purpose of the Study

The major purpose of the study was to explore academic motivation among Jewish and non-Jewish male and female high school students. A further purpose was to investigate what differences exist, if any, in academic motivation, aptitude, achievement, and parental socio-economic status between Jewish Conservative, Orthodox, and Reform male or female students.

An attempt was also made to explore the strength of the relationships existing between academic motivation, aptitude, achievement, and parental socio-economic status for the Jewish male and female groups, as well as to explore the underlying structure of academic motivation for the Jewish students.

Design of the Study

The following data was gathered on each student:

(1) academic motivation, (2) aptitude, (3) achievement, and (4) parental socio-economic status.¹

The objective measure of academic motivation, the M-Scales, consists of four sub-scales, i.e., the Generalized Situational Choice Inventory (GSCI), the Preferred Job Characteristic Scale (PJCS), the Word Rating List (WRL), and the Human Trait Inventory (HTI).

The achievement measures consisted of the students grade point average (GPA) in ninth and tenth grades as well as the combined grade point average of the two grades. The aptitude measure for the Jewish Conservative and Reform males and females was the Differential Aptitude Test-Verbal Reasoning (DAT-VR). For the Jewish Orthodox male students aptitude scores were obtained on the Scholastic Aptitude Test-Verbal (SAT-V). Aptitude scores for the Jewish Orthodox females were obtained on the School College Ability Test-Verbal (SCAT-V). For the non-Jewish male and female students, the aptitude scores were obtained on the Minnesota Scholastic Aptitude Test (MSAT-V). All aptitude scores were transformed to "Z" employing the mean and standard deviation of the normal population for the grade level.

The sample of the study consisted of 388 Jewish male and female eleventh grade students and 369 non-Jewish. Four

¹Only for the Jewish students.

procedures were used to analyze the data: (1) analysis of variance, (2) analysis of co-variance, (3) Scheffé test for multiple comparison of means, and (4) correlation and regression analysis.

Results of the Analysis of Variance

To test if there were any significant differences in academic motivation and aptitude between the Jewish Conservative, Orthodox, Reform and non-Jewish male or female groups an analysis of variance was conducted. Significant differences were obtained between the four male groups in academic motivation and aptitude. Except for the GSCI and aptitude the four female groups did not differ significantly. Significant differences were also obtained between the three Jewish male and the three female groups, each, in parental socio-economic status.

Results of the Analysis of Co-Variance

The analysis of co-variance was conducted to test whether or not the Jewish and non-Jewish male and female groups would differ significantly in academic motivation when aptitude was controlled. Significant differences were obtained in academic motivation between the Jewish and non-Jewish male groups, while except for significant differences in the Generalized Situational Choice Inventory (GSCI) and M-Scale total the Jewish and non-Jewish female groups did not differ significantly in academic motivation.

Results of the Scheffé Test

The Scheffé procedure was employed to test whether or not differences in academic motivation exist between the Conservative, Orthodox and Reform male or female groups, each, and the non-Jewish male or female groups, as well as to test what differences exist, if any, in academic motivation, achievement, aptitude, and parental socio-economic status among the Jewish groups themselves.

Results of the Scheffé indicated that the Jewish Conservative, Orthodox and Reform male groups, each, exceeded the non-Jewish males in academic motivation and aptitude. The Jewish Conservative, Orthodox and Reform female group, each, exceeded the non-Jewish females in academic motivation and aptitude. When controlling for aptitude, the three Jewish male groups exceeded the non-Jewish male groups in academic motivation, while, except for the Generalized Situational Choice Inventory (GSCI) the three Jewish female groups did not exceed the non-Jewish females in academic motivation.

For the Jewish male groups, the Orthodox exceeded both the Conservative and Reform males and the Conservative males exceeded the Reform males in academic motivation, aptitude and achievement. The Reform male group exceeded both the Orthodox and the Conservative males in parental socio-economic status. For the Jewish females, the Orthodox females exceeded both the Conservative and Reform females in academic motivation, aptitude and achievement,

while no differences were obtained in these variables between the Conservative and Reform females. The Reform females exceeded both the Orthodox and Conservative females in parental socio-economic status (SES).

Results of Correlation Analysis

A correlational analysis was conducted to explore the degree of the relationship existing among academic motivation, achievement, aptitude, and parental socio-economic status for the Jewish male and female groups.

Correlations between academic motivation sub- and total M-Scale scores were high and significantly different from zero. A significant relationship was found between academic motivation, aptitude, and achievement for the Jewish male and females. Parental SES was not significantly correlated with academic motivation, achievement, and aptitude.

Results of the Regression Analysis

The regression analysis was conducted to test whether or not academic motivation when added to an aptitude measure would increase the precision of prediction of academic achievement.

Results indicated that for the Orthodox males, all academic motivation scales when added to aptitude increased the precision of prediction of academic achievement, and for the Conservative and Reform males only the Generalized Situational Choice Inventory (GSCI), the Word Rating List

(WRL) (Reform only), the Human Trait Inventory (HTI), and M-Scale total did so. For the Reform females, adding the M-Scale to aptitude did not increase the precision of prediction of achievement. For the Conservative and Orthodox females the Generalized Situational Choice Inventory (GSCI), the Preferred Job Characteristic Scale (PJCS), and the Word Rating List (WRL) (Orthodox females only), the Human Trait Inventory (HTI) and M-Scale totals when added to aptitude did increase the precision of prediction of academic achievement.

Results of the Factor Analysis

The factor analysis was conducted to explore the underlying structure of academic motivation for the Jewish male and female students.

Forty-five Generalized Situational Choice Inventory (GSCI) male and thirty GSCI female items were factor analyzed. The principle axes solution was employed for identifying the unrotated factors. The Quartimax method of rotation was used with the following criteria to be rotated. The factor had to have (1) eigen value (sum of the squares) in excess of 1.00, (2) each factor had to have at least $n-1$ (n = number of factors) items loading highest on the factor, and (3) the factors had to make psychological sense.

Five male and four female factors were identified. The five male factors were labeled: (1) planned versus

impulse activities, (2) unique versus common accomplishments, (3) long-term versus short-term accomplishments, (4) maximum versus minimum effort, (5) competition with versus ease of meeting a standard. The four female factors were labeled: (1) immediate versus long-term gratification, (2) abstract versus materialistic values, (3) ease versus difficulties of accomplishment, and (4) unique versus common accomplishments.

Conclusions

A number of conclusions were generated from the study; all must be interpreted within the limits of the research design.

1. Jewish Conservative, Orthodox, and Reform males, each, exceed the non-Jewish males in academic motivation and aptitude.
2. Jewish Conservative, Orthodox, and Reform females, each, exceed the non-Jewish females in academic motivation and aptitude.
3. When aptitude was controlled, Jewish Conservative, Orthodox, and Reform males exceed non-Jewish males in academic motivation.
4. When aptitude was controlled, Jewish Conservative, Orthodox, and Reform females exceed the non-Jewish females in the GSCI only; the Orthodox females also exceed the non-Jewish females in M-Scale total, but no differences were found

among the groups on all the other academic motivation scales.

5. Jewish Orthodox males exceed both Conservative and Reform males in academic motivation, aptitude, and achievement.
6. Jewish Conservative males exceed Reform males in academic motivation, aptitude, and achievement.
7. Jewish Orthodox females exceed both Conservative and Reform females in academic motivation, aptitude, and achievement.
8. There were no significant differences in academic motivation, achievement, and aptitude between Jewish Conservative and Reform females.
9. Jewish Reform males exceed both Orthodox and Conservative males in Parental Socio-Economic Status (SES).
10. Jewish Reform females exceed both Orthodox and Reform females in Parental Socio-Economic Status (SES).
11. High and significant from zero correlations were found between academic motivation sub- and total M-Scale scores, academic, and achievement for both Jewish male and female students.
12. High and significant from zero correlations exist between achievement and aptitude for the Jewish male and female students.

13. Low and insignificant from zero correlations exist between parental SES and : academic motivation, achievement, and aptitude for both the Jewish male and female students.
14. For the Orthodox males, adding academic motivation scales to aptitude increased the precision of prediction of academic achievement. For the Conservative and Reform males only the GSCI, WRL (Reform only), HTI and M-Scale total did so.
15. For the Conservative and Orthodox females, adding the GSCI, PJCS, and WRL (Orthodox only), HTI, and the total M-Scale to aptitude increased the precision of prediction of academic achievement, while for the Reform females no significant differences were obtained.
16. The factor analysis of the GSCI male and female items separately, yielded an interpretable factorial structure supportive of the Farquhar¹ and associates polar theory of academic motivation. In addition, factors were identified which appear to have particular interpretation emphasis for Jewish students.

Discussion

An important limitation in this study which tended to restrict the generalizations of results was the sample

¹Farquhar, op. cit.

selection. Four (geographically separated) high schools were included. The Jewish students came from Detroit and New York, the non-Jewish from Minnesota. Selecting schools on the basis of a judgmental rather than a random model would suggest caution in generalization of the results obtained. However, the body of data prompts a need for postulating certain generalizations which are speculative in nature.

Differences in academic motivation between Jewish and non-Jewish students.--The most significant finding of this study was the fact that both the Jewish male and female students were found to be more highly motivated academically and had higher aptitude scores than the non-Jewish male and female students. However, when aptitude was controlled only the Jewish males exceeded the non-Jewish males in academic motivation, while the Jewish females (except for GSCI) and the GSCI and M-Scale total for Orthodox females) did not exceed the non-Jewish females in all other academic motivation scales.

What could account for the findings that the Jewish male groups showed a higher degree of academic motivation than the non-Jewish males?

Earlier discussion of the Jewish achievement motivation literature tended to support and explain the findings of this study. Much of the evidence in the literature points toward the values and beliefs about education and achievement held by the Jewish family and culture. These

values were based upon a long tradition of literacy and respect for learning and education. Levinson had suggested that "the Jew more than subjects from other sub-cultures appears to need to cling to his sub-culture, the values of which affects his beliefs and behavior through life."¹ Warner and Srole,² Barrabee and VanMering,³ and Hurvitz⁴ have all focused upon the high premium Jewish parents put upon education and achievement. The empirical evidence of this study supports the observations of the above authors. The Jewish male is more academically motivated than his non-Jewish male counterpart.

Are the expectations for academic achievement equal for the Jewish male and the Jewish female?

Levinson suggested that in the traditional home, "the boy is expected to transmit the traditions of the family, religion, and nation. The boy is under obligation to study and achieve, while the end goal for the girl is to get married and her achievement does not depend upon a superior academic performance."⁵ Levinson's observation offers a plausible explanation for the findings that the

¹Levinson, "Some Research Findings with Jewish Subjects of Traditional Background," op. cit., p. 131.

²Warner and Srole, op. cit.

³Barrabee and VanMering, op. cit. ⁴Hurvitz, op. cit.

⁵Levinson, op. cit.

Jewish males exceeded the non-Jewish males in academic motivation, while the Jewish females were found to differ from the non-Jewish females only in the test describing the academic motivation situation (GSCI), but did not differ in other scales depicting job aspirations, self-concept, or personality characteristics of highly motivated students.

The data of this study would support past speculations that Jewish males possess a high degree of academic motivation and the female is also instilled with such forces but to a lesser degree. Her's is more situationally then personality or reflected self concept oriented. It would be interesting to ascertain if the Jewish females' self-concept is one of achievement, even though she may feel that teachers do not necessarily see her in the academic role.

Differences in academic motivation, aptitude, and achievement between Jewish students.--The findings that the Orthodox students were more highly motivated academically and had higher achievement and aptitude scores than the Conservative and Reform students would be expected on the basis of study of the Jewish culture.

In the Jewish Orthodox family "book learning" is highly praised. Levinson¹ suggests that there is a basic core of Jewish identification in almost all Jews. The Orthodox groups are most likely closest to these

¹Ibid.

"core-values" than other Jewish groups. In Orthodox homes the religious dictum is to study, to become wise and pious. In most Orthodox homes there is a great love and respect for learning and knowledge "for its own sake." In the Orthodox family there is much emphasis upon learning, intellectual attainments, hard work, and the tendency toward academic and intellectual goals. This type of atmosphere approximates the ideal model of training for academic achievements. Results of this study would certainly support this conclusion.

It would appear that the pressure to achieve academically is linked with hard core judaic tradition. As stated above, the Orthodox Jew clings to these traditions the most conscientiously and rigidly--the Reform the least. In this study the ranking in degree of measured academic motivation parallels the same Orthodox-Conservative-Reform continuum. Of course, the study has not established casual relationships, but it certainly raises some high speculation that such is the case.

Differences in parental socio-economic status (SES) between Jewish students.--The socio-economic status was heavily loaded with three main factors: father's education and occupational status, and mother's education. Presumably, the higher the SES index obtained, the higher these parents were on the educational and occupational ladder.

The results of this study indicate that the Jewish Reform parents had more education and more prestigious jobs

than both the Conservative and the Orthodox parents. The findings that the Orthodox and Conservative students scored higher on academic motivation than the Reform students, and that the parental socio-economic status scores significantly differed in the opposite direction offers some interesting speculation. In the sample description it was found that the Orthodox students were more likely to be first generation or foreign born students than the other two Jewish groups. In fact, only a few of the Reform students were from recently immigrated families. It is likely that the breadth of occupational opportunities had not opened for the parents of the Orthodox students.

It appears that among the Jewish students in this study SES was not directly related to academic achievements. In fact, students with lower parental SES scores were found to be more highly academically motivated than those with higher SES scores. It is possible that in Jewish homes where parents have not had a chance to complete their education, or where the parental occupational level was not the most prestigious one, the pressures for academic achievements are greater than in homes with higher SES. This finding suggests that, as originally hypothesized in this study, the Judaic cultural values are more closely related to academic motivation than the values acquired through other sources such as education (which the SES would reflect).

Factor analysis.--The factorial structure of the GSCI for the Jewish males typified students who preferred to plan, think, prepare themselves ahead of time, and to deliberate over their decisions rather than to act impulsively (planned versus impulse activity). Much speculation exist in the literature that one of the unique strengths of the Jew has been his capacity to control his impulse life. Strodtbeck suggested that "for the Jew the mind was the great tool, but ever under discipline and purposeful direction . . . it is never a question of whether the mind can win over impulse . . . the mind always does win."¹

Another factor indicated that the Jewish males preferred to (1) deal with original responses, and to engage in unique types of activities and accomplishments rather than with standard ones (unique versus common accomplishments); (2) be willing to delay and defer immediate types of gratifications, and make substantial efforts to achieve educational goals (long-term versus short-term accomplishments). Dimont² catalogs the impressive list of outstanding Jewish scholars who have contributed disproportionately to their population size in religion, science, and philosophy. McClelland³ suggests that: "Jews are conspicuously over-achievers and have values leading to

¹Strodtbeck, op. cit., p. 149. ²Dimont, op. cit.

³McClelland, Talent and Society, op. cit., p. 20.

upward mobility based upon a long tradition of literacy and respect for learning."

Jewish males preferred to deal with situations requiring hard work, a great deal of effort (maximum versus minimum effort) and were prepared to compete in order to meet a personal challenge, to do a task well, and work to achieve their goals (competition with versus ease of meeting a standard).

Levinson suggested that the Jewish traditional way of life incorporated the belief that success could be achieved by anyone who would work hard and learn to defer gratification. The belief that one must work hard to achieve success is quite strong, particularly among the Jewish Orthodox, and no doubt, is valued by most other Jewish religious orientations.

The factors clearly indicate the Jewish males to be high achievers, and highly motivated students. What does the factorial structure for the Jewish female reveal? Jewish females preferred to delay immediate types of rewards in favor of long-term rewards (immediate versus long-term gratifications). They preferred abstract values rather than materialistic ones (abstract versus materialistic values). Jewish females preferred to meet a difficult challenge or standard and accomplish it rather than to choose an easy goal (ease versus difficulties of accomplishments), and they expressed preference for unique types of activities, originality of response,

and dealing with unusual types of accomplishments rather than common or standard ones (unique versus common accomplishments).

The factorial structure supports the findings that the Jewish females were academically motivated. Though the Jewish females were found to be less academically motivated than the Jewish males, some of the male and female factors overlapped. One female factor (abstract versus materialistic values) suggests that in addition to being concerned with achievement (abstract values) Jewish females were also quite concerned with their feminine role of having a home and raising a family (materialistic values). This finding supports Levinson's contention cited earlier that in the Jewish home the male is expected to achieve academically higher than his female counterpart, while the female is less pressured to achieve academically.

The empirical results of this study are strongly supportive of the many previous historical-descriptive speculations. If the findings of this study have any validity at all, it can be safely concluded that academic motivation is an integral part of the Jewish culture. It is concisely and effectively incalculated in the male, but even the female is subjected to its forces.

The research of the preceding pages represented an attempt to study academic motivation in Jewish and non-Jewish high school students. Within the limitations of

the research design this attempt supported the polar theory of academic motivation and indicated the M-Scale to be a useful instrument for the study of academic motivation with Jewish and non-Jewish adolescents.

Recommendations

1. The study should be replicated using interviews with Jewish parents to better analyze the nature of academic motivation in Jewish families.
2. A longitudinal study should be made with academic motivation of Jewish students whose affiliations are in the process of changing from one Jewish orientation to another.
3. A more thorough investigation should be made of the full meaning of SES in the Jewish community. Apparently generalization derived from the dominant and other sub-cultures do not equally apply to the Jewish culture.
4. A comparison of academic motivation and achievement should be attempted between American Jewish high school students and Israeli students to better understand the nature of cultural differences and their effect on academic motivation.
5. A comparison of urban and rural Israeli students (city versus Kibbutz students) in academic motivation should be attempted.

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APPENDICES

APPENDIX A

ACADEMIC MOTIVATION SCALES*

The motivational scores were obtained from the student's responses to the Michigan State M-Scale. The scale is comprised of four sub-tests: (1) Generalized Situational Choice Inventory, (2) Preferred Job Characteristics Scale, (3) Word Rating List, and (4) Human Trait Inventory.

1. The Generalized Situational Choice Inventory (GSCI) was constructed to describe the academic motivation situation. Students are required to make a forced choice between two types of situations, one which depicts a high and one which depicts a low academic motivation situation. A high score on this scale indicates an individual who has a high need for academic achievement. A low score indicates an individual who chooses activities disassociated from the school's program.
2. The Preferred Job Characteristics Scale (PJCS) was designed to differentiate between the job aspirations of high-low motivated students. Students are required to make a forced choice between two types of jobs, one which depicts high and one which depicts low job aspirations. Students who score high on the scale tend to want jobs where their individuality is recognized, where their talents and skills are used, where opportunities exist for change and advancement. Students who score low on this scale tend to prefer jobs where entry is easy, requirements are low, time restrictions are absent, and where one is "discovered" rather than worked into a position.

*Two separate forms were used: Form C-Males; Form C-Females.

3. The Word Rating List (WRL) was designed to measure the academic self-concept of the student. Students are asked to rate themselves on a series of descriptive phrases and words describing high and low motivated and achieving students. A high score indicates an individual with academic self-concept oriented toward the school environment. An individual who scores low on this scale shows fairly clearly that he is not academically oriented.
4. The Human Trait Inventory (HTI) consists of items from past personality tests that have been found to differentiate between high and low achieving and motivated students. Students are asked to rate how they feel about these statements. Individuals who score high on this scale tend to have personalities more similar to highly motivated students and those scoring low tend to have personalities similar to low motivated students.

APPENDIX B

DERIVATION OF ACHIEVEMENT (GPA) SCORES

The ninth, tenth and total Grade Point Average Scales (GPA) were considered the student's academic achievement scores. To complete the GPA for each student, each subject requiring homework in the ninth and tenth year of schooling was assigned a numerical value as follows: A = 3, B = 2, C = 1, D = 0. Numerical values were added for the ninth and tenth year subjects separately and divided by the number of subjects graded. The resultant values represented the GPA score for the ninth and tenth year students separately. To compute the total GPA for all the ninth and tenth year students, numerical values of both years were added and divided by the number of separate academic grades. The resultant value represented the total (ninth and tenth year) GPA.

APPENDIX C

PARENTAL SOCIO-ECONOMIC STATUS SCORES (SES)

Each student responded to two numbered lists, one of educational level (see Education Level of Parents) and the other of occupations (see Occupational Information about Parents).

To determine parental education students were asked, for each parent, to select from the numbered list of educational categories the appropriate parental educational level (numbered from 1-8) and to write the numerical value corresponding with it in the appropriate space provided on the data card.

To determine parental occupation, students were asked, for each parent, to go through the list of occupations, select the appropriate one, and to write the numerical value representing it in the space provided on the data card.

Three variables were used to calculate parental SES score: Father's and mother's education and father's occupation. The following procedure was used:

Each individual student was given a single score based on the solution of the following equation:

Father's educational level $.4653 X_1 +$

Mother's educational level $.5060 X_2 +$

Prestige ratings of Father's occupation $.0771 X_3$

X_1 = each student's score for father's occupation

X_2 = each student's score for mother's education

X_3 = each student's score for father's occupation

SES score for each of the Jewish groups was based on the mean SES scores of all the students in that group.

Educational Level of Parents

Directions:

Fill in your name, school, and birthdate on the Data Card.

Listed below are eight (8) categories describing eight (8) different educational levels. Read the complete list of categories and select the one category that described the educational level of your Father. Record this category number on the designated space provided on the Data Card. Then select the category number that describes the educational level of your Mother, and record this number on the designated space provided on the Data Card.

Educational Categories

Category
Numbers

1. If attended grade school (grades 1 to 8) but did not finish.
2. If completed grade school through grade 8.
3. If attended high school (grades 9 to 12) but did not finish.
4. If graduated from high school.

Category
NumbersEducational Categories (continued)

5. If attended college but did not graduate.
6. If graduated from college.
7. If attended graduate school or professional school but did not attain a graduate or professional degree.
8. If graduated from graduate or professional school.

Occupational Information About Parents

Directions:

Listed on the following pages are names of occupations or jobs which are listed in alphabetical order. Each occupation listed has a number after it.

EXAMPLE:

<u>Occupation</u>	<u>Number</u>
Truck Driver	54

Look carefully through the following list for your Father's occupation. Write the name of your father's occupation and the number that follows it in the space provided on the Data Card. Also select your Mother's occupation from the same list (if other than housewife) and record the name and the number on the Data Card.

APPENDIX D

ADMINISTRATION PROCEDURES

Upon entering the room each student received a sealed envelope and was asked to be seated. The envelope contained the following materials:

1. The Michigan State M-Scales (male or female form).
2. Numbered lists of parental education and occupation.
3. Data Card.
4. Answer Sheet.

A short introduction by the counselor followed:

"This is not a test but a research inventory of student's choices concerning study habits, study methods, and factors related to better learning methods and academic achievement. There are no right or wrong answers. The results will in no way affect your grades in school. This study is being conducted by Michigan State University. Try to answer the questions as honestly and as frankly as you can without consulting the opinion of your fellow students."

The student was then asked to fill out the Data Card as completely as he could. In order to complete the items concerning parental educational level and occupation, the students were given the following directions:

"Look carefully through the following list for your father's occupation. Write the name of your father's occupation and the number that follows it in the space provided on the Data Card. Also select your mother's occupation from the same list (if other than housewife) and record the name and the number on the Data Card. If you have any questions or cannot find your father's or mother's occupation, raise your hand." Then, "Read the complete list of categories and select the one category that describes the educational level of your father. Record this category number on the the designated space provided on the Data Card. Then select the category number that describes the educational level of your mother, and record this number on the designated space provided on the Data Card."

When the students completed the Data Card they proceeded to complete the M-Scale questions, and upon completion of the scales returned the envelope to the examiner.

DATA CARD

Age Month, Day, Year

Last Name , First , Middle (Spell Out) , School

	<u>EDUCATION</u>	<u>OCCUPATION</u>	<u>Place of Birth</u>	<u>No. of Years in U.S.</u>
	Check category number	Describe and check category number		

FATHER	()	()		
MOTHER	()	()		

RELIGIOUS AFFILIATION:	FATHER	MOTHER	YOURSELF
Orthodox			
Conservative			
Reform			
Other			

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