Masculinity and academic adjustment of tenth grade males: A comparison of a coeducational and an all-male school.

Donald T. Abrash
University of Windsor

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MASCULINITY AND ACADEMIC ADJUSTMENT OF TENTH GRADE MALES:
A COMPARISON OF A COEDUCATIONAL AND AN ALL-MALE SCHOOL

BY
DONALD T. ABRASH

A Thesis
Submitted to the Faculty of Graduate Studies through the
Department of Psychology in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts at the University
of Windsor

Windsor, Ontario
1971
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ABSTRACT

The purpose of this study was to test the major hypothesis that the environment of an all-male high school is more conducive to the academic adjustment of masculine males than is the environment of a coeducational high school.

A review of the literature revealed that masculine males tend to be less successful in school than their less masculine counterparts. However, it was noted that research with high school age subjects has been conducted exclusively in coeducational schools. The present study endeavoured to extend the investigation of the relationship between masculinity-femininity and school performance into the all-male school environment.

Male subjects from the tenth grade of both a coeducational and an all-male school were administered a questionnaire, and on the basis of subjects' responses on the CPI Masculinity-Femininity scale, groups of masculine and feminine males were selected. Masculine and feminine males in each school were then compared on the variables of academic achievement, achievement motivation, and attitudes toward education.

The results revealed that for the coeducational sample feminine males were significantly higher than masculine males in overall average, achievement in mathematics and science, and in achievement motivation;
these feminine males also expressed significantly more favorable attitudes toward school than masculine males. However, masculine and feminine males in the all-male school did not differ significantly in either academic achievement or orientation towards education.

It was concluded that the environment of an all-male school is more conducive to the academic adjustment of masculine males than is the environment of a coeducational school. Various explanations were suggested for the effect of type of school on the academic adjustment of males, and suggestions for future research were proposed on the basis of the findings of the present study.
ACKNOWLEDGMENTS

The development of an idea into a finished project necessitates the effort of so many persons. It would not be possible to name all who have contributed to this study, but, I would like to extend my appreciation to each and every one.

I am especially indebted to Dr. Frank W. Schneider, the chairman of my committee, for his invaluable guidance, patience, and trust during the past two years. I am also most grateful to Dr. Akira Kobasigawa and Meyer Starr for their great assistance in the design and completion of this research.

The administration, teachers, and students of the schools in which this study was conducted are extended a very special thanks, for without their co-operation this study would not have been possible.

The patience, understanding, and support of my wife, Trudy, cannot be measured. I thank her for just always being there.
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CHAPTER I

INTRODUCTION

The purpose of the present thesis was to investigate some of the personality characteristics associated with over and under-achievement of male students within an all-male high school and within a coeducational school. More specifically, the primary objective was to answer the following question: Do masculine boys more easily obtain academic success within an all-male school environment than within a coeducational school environment? The secondary objective of the study was to examine the relationship between adjustment by social conformity and academic adjustment within each school environment.

The first question above is based on the hypothesis that an all-male school provides a more masculine environment, better suited to the interests of males, than does a coeducational school. In fact, more than half a century ago, Ayres (1909), commenting on the problem of male "laggards" in the schools, proposed that schools are better fitted to the needs and natures of girl pupils than of boy pupils. This observation reappeared in more explicit form twenty years later when St. John (1932) hypothesized
that males' lower scholastic achievement is due to the inability of teachers to adapt themselves to the personalities and interests of boys. More recently many others (e.g., Cottle, 1968; Luce, 1967; Sexton, 1969) have proposed that the masculine pupil is at a disadvantage in what they describe as the somewhat passive, dependent, and feminine environment of the coeducational school. According to Sexton (1969), if a boy absorbs school values he may become "feminized" himself, while if he resists, he may be pushed toward academic failure, alienation, and dropping out.

Research on sex differences in school performance has provided indirect support for this "feminine coeducational school environment" assumption. Studies have revealed that not only does the percentage of males who fail to be promoted each year substantially surpass that of females (Johnson, 1967; National Education Association, 1959), but also the majority of those students that dropout of school each year are boys (Bledsoe, 1959; Bureau of the Census, 1962). Furthermore, the female superiority in school performance does not appear to be a result of intelligence differences between the sexes (Hartley, 1959; Helton & Morris, 1961; Johnson, 1967).

Studies which have examined the relationship between
sex of the teacher and student achievement further suggest that the coeducational school provides a more favorable environment for females. In a carefully controlled study by McNeil (1964), a group of first grade boys were found to be superior to girls in learning to read after auto-instructional procedures that ensured equal opportunities to respond to questions. However, after one year of classroom instruction from a female teacher, the same boys were inferior to the girls on a similar learning task. Shinedling and Pederson (1970) compared fourth grade students with male teachers to those with female teachers. The results indicated that male students benefited academically from having a male teacher. For instance, boys who had male teachers performed better than the other students on the California Achievement Test; whereas those who had female teachers were poorer than other students on verbal tasks. In addition, McFarland (1966) found masculine boys' school performance increased when a male instructor assisted their female teacher.

Support for the feminine coeducational school assumption also is found in studies dealing with the reactions of both students and teachers to coeducational and single-sex schools. Dale (1969) observed that the percentage of male students that preferred male teachers far exceeded that which preferred female teachers.
Koselnik (1965) asked teachers who had experience in both coeducational and single-sex schools whether specified objectives could be obtained better by teaching boys and girls separately or together. Approximately 75% of the teachers favored separation of the sexes at grades seven through twelve. The most frequent comment made by the teachers interviewed by Koselnik was that boys need male teachers with whom they can identify. Other teachers stated that in all-male classes material with a strong masculine flavour can be emphasized. Therefore, it appears that both teachers and students are sensitive to the fact that masculinity in boys may conflict with the essentially feminine norms of the coeducational school environment. In summary, studies of school achievement reveal that high achievers in school are more likely to be females than males and that males both prefer male teachers and perform better under male teachers.

The following section presents a review of research related to the hypothesis that the masculine male, in contrast to the feminine male, is at a disadvantage in the coeducational school environment. While the literature will be found to support the hypothesis, it will be noted that most investigations of the relationship between masculinity-femininity and achievement have been restricted to
coeducational settings. Such a limitation suggests the value of examining the relationship between masculinity-femininity and achievement in an environment which is dominated by male students and male teachers.

Relationship between Masculinity-Femininity and Achievement

A number of studies, using a variety of measures of masculinity-femininity, have compared the performance of masculine and feminine males in school. The results of many of these studies tend to support the feminine school assumption (Cattell, 1964; Lamkin, 1968; Lewis, et al., 1965; Ponzo, 1968; Shultz & Hartup, 1967), although some studies have reported inconsistent findings (Grandland & Knowles, 1969; Oxhorn, 1966; Shaw & White, 1965). Ponzo (1968) correlated the Sex Role Identity Instrument scores of high school males with their grade point averages and found that masculinity correlated negatively with achievement. Similarly, Lewis, et al. (1965) obtained a significant negative correlation between masculinity scores on the Strong Vocational Interest Scale and male college freshmen's high school averages. The findings of Ponzo and Lewis were supported by those of Lamkin (1968) which revealed significant negative correlations between masculinity (Terman-Miles Mf Test) and sixth grade boys' achievement in language arts and arithmetic. In addition,
Cattell (1964) demonstrated that the personality traits of submissiveness and docility were those most highly related to school success for males. In contrast to the above studies, other studies have failed to find a negative relationship between masculinity and achievement. Oxhorn (1966) found no significant difference between the scores of achievers and underachievers on the Guilford-Martin Mf Scale. And two studies have shown that male achievers identify with their fathers more than do male underachievers. In one (Grandland & Knowles, 1969) masculinity-femininity was measured by the Bell Adjustment Inventory and in the other (Shaw & White, 1965) by students' self-father ratings.

The relative inconsistency in the findings may or may not prove to be a result of sampling and measuring technique differences. One factor which may help to account for the inconsistent findings has been observed by Ponzo (1968):

In feminine oriented schools . . . boys who are unsure of their masculinity would seemingly be threatened by any move in the feminine direction and instead would assert their masculinity in ways that impede academic achievement (p. 2290).

Therefore, the masculine underachiever may be either a boy who has identified with a male figure or a boy who attempts to project a masculine image as an overcompensation for a lack of masculine identification. The complexity of this problem suggested that for the purpose of this thesis masculinity-femininity should be operationally defined in
terms of conscious social role preference. As Cottle (1968) maintains, it is the behaviors and attitudes manifested by the male student which affect his adjustment and achievement in school by either complying or conflicting with teacher demands. The underlying identification patterns, while recognized as important determinants of manifest masculinity-femininity in males, unnecessarily confuse the issue at hand; hence this study primarily was concerned with manifest masculinity-femininity as indicated by boys' responses to a variety of statements to which males normally respond differently than females.

A review of research with the California Psychological Inventory Masculinity-Femininity Scale, developed by Gough (1956), reveals the value of using a measure of manifest masculinity-femininity to study the relationship between masculinity and academic achievement in boys. In fact, considering the inconsistency which appears when other measures are used, the results of studies using the California Psychological Inventory (CPI) have been remarkably consistent in demonstrating a negative relationship between masculinity and achievement.

The Masculinity-Femininity scale of the CPI was constructed to measure the masculinity (low scores) or femininity (high scores) of interests for samples of normal males and females. It is composed of statements to which boys respond very differently from girls regarding
attitudes toward aggression, propriety, vocation and interests. Masculinity-femininity, as measured by the CPI, has been found to be an independent dimension in a number of factor analytic studies—for male high school students (Parloff, 1968; Springbob & Struening, 1964) and for male and female college students (Crites, et al., 1961; Leton & Walter, 1965; Mitchell, 1963; Mitchell & Pierce-Jones, 1960; Shure & Rogers, 1963). According to Becker (1968), the advantage of the CPI Masculinity-Femininity scale is that a greater number of its items are less obviously sex related than those of other masculinity-femininity scales.

The results of investigations that have employed the CPI scale to study the relationship between masculinity-femininity and high school performance consistently support the hypothesis that masculine males are less successful in school than their feminine male peers (Gough, 1964; Pierce, 1961; Roberts, 1962; Sexton, 1969; Young, 1962). For instance, Pierce (1961) administered the CPI to tenth grade boys who had been designated as high or low achievers on the basis of their academic performance. The high achievers scored significantly higher on femininity than the low achievers. More recent support is provided by Sexton (1969). Sexton's results not only demonstrated that the more masculine the boy the
lower his report card average tended to be, but also revealed grade specific differences in achievement. For example, in English and mathematics feminine boys were much more likely than masculine boys to earn 'A' grades, while in science and social studies, although feminine boys were superior, the differences were substantially less marked than with English and mathematics. Sexton concluded that the masculine boys did relatively well in science and social studies due to the fact that in the schools examined male teachers popular with the students taught these two subjects.

The findings of studies dealing with pre- and post-high school age subjects are less consistent. Two studies involving younger children have been reported. Kleimowitz and Ansbacher (1960) found no significant differences in the masculinity-femininity scores of high and low achievers in eighth grade mathematics. However, Webb (1963) did find good school attendance for seventh to ninth grade males with high femininity scores, whereas extensive absenteeism for more masculine boys.

Five of eight studies which have employed college males as subjects indicated no significant relationship between college achievement and masculinity-femininity (Hardy, 1956; Holland, 1959; McFadden, 1968; Watson, 1968; Winkleman, 1962). A study by Cottle (1968) and two by
Holland (1959) have supported the hypothesis that masculine males receive lower marks in college.

The results of research with high school and college populations stand in sharp contrast. Only the former consistently support the thesis that masculine males are likely to reject the feminine coeducational school environment and, consequently, display relatively poor academic achievement. However, examination of the research with college students reveals an interesting pattern which may help to account for the discrepancy. The studies which dealt with high school students were conducted exclusively within coeducational schools. On the other hand, of the five college studies which indicated no significant achievement differences between masculine and feminine males, one was conducted at an all-male engineering college (Winkleman, 1962), another at an all-male technical college (Holland, 1959), and a third at an all-male agricultural college (Hardy, 1956). Thus, the results of these three college studies, rather than being contradictory, are supportive of the premise underlying the present study—the masculine male is disadvantaged in a coeducational school because of its feminine orientation, but in the more masculine environment of an all-male school his disadvantage is reduced.

Two of the college studies (McFadden, 1968; Watson, 1968) showed no significant correlation between femininity
and achievement even in a coeducational college. Perhaps these results merely reflect the more masculine nature of a university environment, wherein the majority of the faculty members are likely to be males, and achievement is based to a greater extent on independent effort rather than on conformity to the instructors' classroom behavior norms. An alternative interpretation of the nonsignificant results is that masculine males are less likely to attend college than feminine males; hence the results reflect a more restricted distribution of masculinity-femininity.

In the majority of the studies reviewed, especially those that employed the CPI masculinity-femininity measure, feminine males received significantly higher school grades than their more masculine male peers. Furthermore, while these differences were significant for males in coeducational schools, in all-male schools the feminine males did not outperform the more masculine students. It appears that there exists a school environment—student personality interaction which accounts for some of the variance in the school achievement of males.

Social Conformity and Academic Achievement

While the present study primarily was concerned with the relationship between masculinity-femininity and school achievement, it was recognized that other characteristics
of the individual's personality affect his academic performance. As Spinks (1969) recently suggested with regard to the resurgence of sex-segregated classes in Ontario, it is the school's predisposition to neatness and emphasis on quantifying and packaging, not the female teacher, that "feminizes" boys. Spinks maintains that a type of conformity or adjustment to the restrictions of a sterile school environment is an important determinant of boys' school success. This interpretation is consistent with Mitchell's (1968) suggestion that for high school students, "A willingness to conform and abide by the rules, values, and expectations of the academic setting . . . is most crucial in determining how the individual perceives the various aspects of his school environment (p. 55)."

In light of Spinks' (1969) and Mitchell's (1968) suggestions, it was considered worthwhile to examine the effects of social conformity on the academic achievement of males. The previously cited factor analytic studies of the CPI revealed, beside the Masculinity-Femininity dimension, other factors including an Adjustment by Social Conformity dimension (Crites, 1961; Leton & Walter, 1961; Mitchell, 1963; Mitchell & Pierce-Jones, 1960; Parloff, 1968; Springob & Struening, 1964). The Adjustment by Social Conformity dimension has been defined as measuring general psychological maturity reflected in a concern for
values, compliance, cooperation, and conformity to conventional standards of behavior (Crites, 1961; Mitchell, 1963; Mitchell & Pierce-Jones, 1960). Two CPI scales, the Self-Control and Achievement via Conformance scales, have consistently loaded highly on this factor. The Self-Control scale assesses an individual's degree of self-regulation and freedom from impulsivity. The Achievement via Conformance scale identifies those factors of interest and motivation which facilitate achievement in any setting where conformance is a positive behavior (Gough, 1956).

In spite of the consistent evidence pertaining to validity of the Adjustment by Social Conformity factor, researchers have continued to use individual scale scores rather than scores computed for this single dimension. For samples of high school males (Gough, 1968; Holland, 1959; Pierce, 1961; Roberts, 1962; Young, 1962) and senior grade school males (Kleimowitz & Ansbacher, 1960) research has found that high achievers score significantly higher on both the Self-Control and Achievement via Conformance scales than low achievers. However, studies using college populations have demonstrated no significant relationship between academic achievement and either self-control or conformance (Hardy, 1956; McFadden, 1968; Watson, 1968; Winkleman, 1962). The conflicting results of high school and college studies merely provides further evidence
that the college environment differs from that of high school and grade school settings. It appears that in contrast to what occurs in high school, the college male who is feminine, self-controlled, and conforming fails to have an advantage. Nevertheless, the evidence suggests that the Adjustment by Social Conformity variable operates, in addition to the Masculinity-Femininity variable, as a determinant of the school adjustment of high school students.

**Problem**

To reiterate, the purpose of the present study was to determine whether an all-male high school, in contrast to a coeducational high school, provides an environment which is more conducive to the academic performance of the male student, especially the masculine male. The evidence presented in the literature review certainly appears to support the assumption that a coeducational school environment favours the academic adjustment of females and feminine males to the disadvantage of masculine males. In particular, males with feminine attitudes and interests tend to be more successful in school than their more masculine counterparts. However, research with high school age subjects has focused exclusively on a comparison of the achievement of masculine and feminine males in coeducational schools. Thus the present study
sought to compare the differences between the academic adjustment of masculine and feminine males from an all-male school with the differences between the academic adjustment of masculine and feminine males from a coeducational school. A secondary objective involved an examination of the effect of Adjustment by Social Conformity on the school performance of boys within each school environment.

**Hypotheses**

On the basis of the evidence regarding the relationship between masculinity-femininity and academic achievement, the following major hypothesis was formulated:

The environment of an all-male school is more conducive to the academic adjustment of masculine males than is the environment of a coeducational school.

In order to test this major hypothesis the following three more specific hypotheses were formulated:

**Hypothesis 1.** Within a coeducational high school the academic performance of feminine males exceeds the academic performance of masculine males; whereas within an all-male high school feminine males and masculine males do not differ in their academic performance.

**Hypothesis 2.** Within a coeducational high school feminine males are higher in achievement motivation than
masculine males; whereas within an all-male high school feminine males and masculine males do not differ in achievement motivation.

**Hypothesis 3.** Within a coeducational high school feminine males possess more favorable educational attitudes than masculine males; whereas within an all-male high school feminine males and masculine males do not differ in their educational attitudes.

On the basis of the research pertaining to the relationship between social conformity and achievement, the following hypotheses were formulated:

**Hypothesis 4.** Within both a coeducational high school and an all-male high school males high on adjustment by social conformity demonstrate higher academic performance than males low on adjustment by social conformity.

**Hypothesis 5.** Within both a coeducational high school and an all-male high school males high on adjustment by social conformity are higher in achievement motivation than males low on adjustment by social conformity.

**Hypothesis 6.** Within both a coeducational high school and an all-male high school males high on adjustment by social conformity possess more favorable educational attitudes than males low on adjustment by social conformity.
CHAPTER II

METHOD

Subjects

The subjects were tenth grade male students enrolled in either an all-male high school or a coeducational high school. The all-male school was a Separate school located in Windsor, Ontario, a city of 200,000 inhabitants. The coeducational school was a public high school located in Chatham, Ontario, a city of 36,000 inhabitants. The all-male school is staffed by male teachers only, whereas the coeducational school employs both male and female teachers.

There were 110 subjects from the coeducational school and 112 subjects from the all-male school. Sixty-six subjects from the coeducational school were enrolled in a technical program. Because of their lower I.Q. scores and the nature of their curriculum, the special program students were considered not to be comparable to the other subjects; therefore, data from this group were eliminated from the analyses. The final coeducational sample was comprised of 52 tenth grade males in a general arts and science program similar to the program of the 112 tenth grade males from the all-male school. A requirement for inclusion of a student in the study was
that he must have attended the participating school
during the previous academic year.

**Instruments**

Each participant in the study was given an answer
booklet and a questionnaire booklet. The answer booklet
(see Appendix A-1) contained three pages. The first page
was a Student Agreement Form which a subject signed
giving the researcher permission to use data from the
subject's school records. The second page of the answer
booklet provided space for the subject to record specified
biographical information. The third page was the answer
sheet for the accompanying questionnaire.

The questionnaire booklet (see Appendix A-2) contained
seven pages, the first of which included instructions to
the subject about how to complete the questionnaire. The
additional six pages was the questionnaire which listed
192 self-descriptive statements to which the subject was
instructed to respond true or false on the answer sheet.
The questionnaire included items from the following
inventories (see Appendix A-3):

1. California Psychological Inventory (Gough, 1956)
2. Personality Research Form (Jackson, 1967)
3. Attitude toward School Scale (Remers, 1960)
4. Criticism of Education Scale (Brown, 1956)
The California Psychological Inventory (CPI) was developed by Gough (1956) for use with normal subjects. This instrument is comprised of over 480 true-false items constructed by the method of criterion keying and internal consistency analysis. Kleinmuntz (1967) describes the CPI as "well on its way to becoming one of the best, if not the best, personality measuring instrument of its kind (p. 239)." The reliability coefficients, determined by test-retest methods, are generally reported to be in the upper .80's and lower .90's. In the CPI manual Gough (1956) cites evidence demonstrating adequate validity for each scale included in the inventory. The CPI originally was constructed to measure 18 relatively independent dimensions. However, as noted in the Introduction, a substantial number of factor analytic studies invariably have concluded that the inventory actually measures only four or five dimensions.

For the present thesis only two CPI dimensions were examined—the Masculinity-Femininity and Adjustment by Social Conformity dimensions. According to Cottle (1969) a score on the Masculinity-Femininity dimension can be used as a predictor of a male's conscious preference for behavior and performance styles that are perceived as typically masculine or feminine. The Adjustment by Social Conformity dimension has been described as measuring a
person's adjustment to his environment, adjustment being characterized by conformity, compliance, cooperativeness, and self-control (Crites, et al., 1961; Mitchell, 1963). The Self-Control scale and the Achievement via Conformance scale load approximately .90 and .80, respectively, on this dimension. In the present study each subject's scores on these two scales were combined to yield a measure of his adjustment by social conformity. Therefore, the 126 items chosen from the CPI for inclusion in the questionnaire included all of the items from the Masculinity-Femininity, Self-Control, and Achievement via Conformance scales.

The questionnaire also consisted of items from the Achievement Motivation scale (Form AA) of the Personality Research Form (Jackson, 1967). The Achievement Motivation scale was designed as a measure of a subject's aspiration to accomplish difficult tasks and willingness to put forth effort to attain success.

A final group of items was adopted from the Attitude toward School scale (Remers, 1960) and the Criticism of Education scale (Brown, 1956). A high score on the Attitude toward School scale reflects a favorable attitude toward teachers, classes, and academic assignments. A person with a high score on the Criticism of Education scale is classified as very hostile toward formal
education in general and toward teachers in particular. All items from both scales were included in the questionnaire.

Procedure

The questionnaire was administered on a group basis to the subjects during a single class period. One day was spent in each school. Insofar as possible, similar procedures were followed in both the all-male and co-educational schools. The experimenter introduced himself as follows:

I am Don Abrash, a graduate student from the University of Windsor. As part of my work towards a Master's degree I am collecting information regarding the interests of high school students; therefore, I greatly appreciate maximum participation, although participation in the study is entirely voluntary. Everything you put down will be confidential—no one will see it except me. If you are interested, I will, at a later date, report my findings to you.

The subjects were given the answer booklet and were instructed to complete the Student Agreement Form and Background Information sheet. Less than 2% of the subjects expressed a wish not to participate in the study and were permitted to leave the room. When all subjects had completed filling out the first two pages of the answer booklet, they were asked to turn to the questionnaire booklet. The experimenter read the questionnaire...
instructions to the subjects.

This booklet contains a series of statements. Read each one, decide how you feel about it, and then mark your answer on the special answer sheet. If you agree with a statement or feel it is true about you, fill in the space under T (true) on the answer sheet. If you disagree with a statement or feel it is not true about you, fill in the space under F (false). In marking your answers on the answer sheet make sure the number of the statements are the same as the number on the answer sheet. Work individually and as quickly as possible. Please respond to each statement honestly and accurately. The instructor will collect the question and answer sheets at the end of the period.

Unless specific questions concerning these instructions were asked, the experimenter did not provide further assistance to the subjects during completion of the questionnaire.

Five minutes prior to the end of the allotted period the experimenter asked the subjects to ensure that they had completed the background information and had signed the agreement form.

During the following week of school, the experimenter returned to each school and collected the required achievement data. This included each subject's most recent I.Q. score (Lorge or Dominion test), his overall average, and grades in English, mathematics, science, and physical education. Once sufficient information had been recorded for each subject, his signature was removed from the questionnaire in compliance with the agreement of participant anonymity.
CHAPTER III

RESULTS

Masculinity-Femininity and Academic Adjustment

In order to select masculine and feminine subjects, the median of the scores of all subjects on the CPI Masculinity-Femininity scale was calculated (Mdn. = 16.5). Subjects were assigned to the "masculine" category if their score fell below the median and to the "feminine" category if their score fell above the median. Table 1 reports the number of subjects scoring in the masculine and feminine ranges for each school. Chi-square analysis was carried out on the data in Table 1. The results of this analysis indicate that masculinity-femininity and type of school attended were related ($X^2 = 7.35; df = 1; p < .01$). In the coeducational sample there were significantly more masculine males than feminine males; whereas in the all-male sample there were significantly more feminine males than masculine males.¹

To facilitate the performance of the analyses of

¹ In the coeducational school 63% of the special program students (those not included in this study) were masculine males and 37% were feminine males.
Table 1. Number of Masculine and Feminine Subjects According to School Attended

<table>
<thead>
<tr>
<th></th>
<th>Masculine subjects</th>
<th>Feminine subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coed school</td>
<td>31</td>
<td>21</td>
</tr>
<tr>
<td>All-Male school</td>
<td>41</td>
<td>69</td>
</tr>
</tbody>
</table>
variance, the number of subjects was equated from cell to cell by randomly selecting 20 feminine and 20 masculine subjects for each of the two schools. The size of the group was determined to be 20 because there were only 21 feminine subjects in the coeducational school. One additional restriction for the selection of subjects was that all groups were matched for level of socio-economic status which was calculated on the basis of the occupations of the subjects' fathers using the Duncan scale (Duncan, 1961). The data for each group regarding masculinity-femininity (M-F), age, I.Q., and socio-economic status (SES) are summarized in Appendix B-2.

**Hypothesis 1.** Within a coeducational high school the academic performance of feminine males exceeds the academic performance of masculine males; whereas in an all-male school feminine males and masculine males do not differ in their academic performance.

Data pertaining to the subjects' academic performance during the first semester of their tenth year was used to test Hypothesis 1. The hypothesis was evaluated in two ways—first, by comparing the subjects' overall tenth grade averages, and secondly, by comparing subjects' achievement in four specific courses. The overall grade point average was obtained on the basis of subjects' performance in all of the courses they were taking. The
mean grades in four courses and overall grade point average for the four groups are presented in Table 2. A 2 X 2 (School X M-F) analysis of variance was carried out on overall grade point averages. The results of this analysis are summarized in Table 3. Examination of Table 3 indicates that the interaction between School and Masculinity-Femininity was marginally significant. Figure 1 illustrates more clearly the meaning of this interaction.

Analysis of variance for simple effects, summarized in Table 4, reveals no significant difference in overall averages between masculine and feminine males in the all-male school; however, for the coeducational school feminine males had significantly higher overall averages than masculine males. In addition, the simple effects analysis reveals that School had a significant effect only for masculine males. That is, masculine males in the all-male school were superior in overall grade point average to masculine males in the coeducational school. Feminine males in the all-male and coeducational schools did not differ significantly in overall average.

Thus the results pertaining to overall average support Hypothesis 1 by showing that feminine males outperform masculine males in a coeducational school environment but not in an all-male school environment.

Data pertaining to performance in specific courses
Table 2. Mean Course Grades and Overall Average of Masculine and Feminine Subjects in the Coeducational School and in the All-Male School

<table>
<thead>
<tr>
<th>School</th>
<th>M-F</th>
<th>English</th>
<th>Math</th>
<th>Science</th>
<th>Physical Education</th>
<th>Overall average</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-Male</td>
<td>Masc.</td>
<td>63.6</td>
<td>69.2</td>
<td>60.7</td>
<td>69.6</td>
<td>65.1</td>
</tr>
<tr>
<td></td>
<td>Fem.</td>
<td>62.9</td>
<td>70.7</td>
<td>60.8</td>
<td>67.9</td>
<td>65.3</td>
</tr>
<tr>
<td>Coed.</td>
<td>Masc.</td>
<td>58.0</td>
<td>54.1</td>
<td>60.8</td>
<td>67.9</td>
<td>59.5</td>
</tr>
<tr>
<td></td>
<td>Fem.</td>
<td>59.2</td>
<td>63.2</td>
<td>67.9</td>
<td>67.4</td>
<td>65.9</td>
</tr>
</tbody>
</table>

\*A subject's overall average represents the mean grade of all courses taken, including other courses as well as English, mathematics, science and physical education.
Table 3. Summary of Analysis of Variance for Overall Grade Average

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>School (A)</td>
<td>1</td>
<td>122.52</td>
<td>2.36</td>
</tr>
<tr>
<td>M-F (B)</td>
<td>1</td>
<td>214.52</td>
<td>4.14**</td>
</tr>
<tr>
<td>A X B</td>
<td>1</td>
<td>195.30</td>
<td>3.77*</td>
</tr>
<tr>
<td>Within Cell</td>
<td>76</td>
<td>51.87</td>
<td></td>
</tr>
</tbody>
</table>

* p < .10
** p < .05
Fig. 1. Mean Overall Grade Point Average of Masculine and Feminine Subjects in the Coeducational and in the All-Male High School.
Table 4. Summary of Analysis of Variance for Simple Effects on Overall Grade Point Average

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-F for All-Male School</td>
<td>1</td>
<td>0.20</td>
<td>-</td>
</tr>
<tr>
<td>M-F for Coed. School</td>
<td>1</td>
<td>409.63</td>
<td>7.89**</td>
</tr>
<tr>
<td>School for Masculine Males</td>
<td>1</td>
<td>313.61</td>
<td>6.04*</td>
</tr>
<tr>
<td>School for Feminine Males</td>
<td>1</td>
<td>4.20</td>
<td>0.08</td>
</tr>
<tr>
<td>Within Cell</td>
<td>76</td>
<td>51.92</td>
<td></td>
</tr>
</tbody>
</table>

* p<.05
** p<.01
also was analyzed to test Hypothesis 1. A 2 X 2 X 4 (School X M-F X Course) analysis of variance with repeated measures on the third factor was carried out on course grades. The results of this analysis are summarized in Table 5. Examination of Table 5 reveals a non-significant School X M-F interaction. Although this interaction between School and M-F was not significant, planned comparisons were made with t-tests between masculine and feminine subjects' grades in specific courses. These comparisons showed that masculine and feminine subjects in the all male school did not differ significantly in achievement in any of the four courses; however, for the coeducational sample feminine males obtained significantly higher grades than masculine males in mathematics (t = 3.34; df = 1; p<.01) and science (t = 2.93; df = 1; p<.01). Thus, the results pertaining to specific course grades partially support Hypothesis 1 by showing that feminine males outperformed masculine males, at least in two of the four courses, in a coeducational school environment but not in an all-male school environment.

The significant School X Course interaction may be accounted for by the fact that the students in the all-male school achieved higher grades in mathematics than the students in the coeducational school (F = 12.44; df = 1, 76; p<.01), whereas for each of the other courses there were
<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School (A)</td>
<td>1</td>
<td>1076.78</td>
<td>5.73**</td>
</tr>
<tr>
<td>M-F (B)</td>
<td>1</td>
<td>420.91</td>
<td>2.24</td>
</tr>
<tr>
<td>A X B</td>
<td>1</td>
<td>290.70</td>
<td>1.54</td>
</tr>
<tr>
<td>Subj. w. groups</td>
<td>76</td>
<td>188.02</td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course (C)</td>
<td>3</td>
<td>816.16</td>
<td>11.01***</td>
</tr>
<tr>
<td>A X C</td>
<td>3</td>
<td>712.68</td>
<td>9.62***</td>
</tr>
<tr>
<td>B X C</td>
<td>3</td>
<td>171.74</td>
<td>2.31</td>
</tr>
<tr>
<td>A X B X C</td>
<td>3</td>
<td>58.31</td>
<td>0.79</td>
</tr>
<tr>
<td>C X Subj. w.</td>
<td>228</td>
<td>74.12</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p<.05  
*** p<.01
no significant differences between the schools.

Hypotheses 2 and 3 focused on how masculinity-femininity is related to achievement motivation and attitudes toward education.

**Hypothesis 2.** Within a coeducational high school feminine males are higher in achievement motivation than masculine males; whereas in an all-male school feminine males and masculine males do not differ in achievement motivation.

**Hypothesis 3.** Within a coeducational high school feminine males possess more favorable educational attitudes than masculine males; whereas within an all-male high school feminine males and masculine males do not differ in their educational attitudes.

Table 6 shows the achievement motivation and educational attitude data for the masculine and feminine males of both schools. In the present context "educational attitude" refers to the combined effect of the Attitude toward School scale and the Criticism of Education scale. Furthermore, "educational orientation" refers to the combined effect of all three scales—the Achievement Motivation, Attitude toward School, and Criticism of Education scales. A $2 \times 2 \times 3$ (School X M-F X Scale) analysis of variance with repeated measures on the third factor was carried out on the educational orientation.
Table 6. Mean Achievement Motivation, Attitude toward School, and Criticism of Education Scores for Masculine and Feminine Subjects in the Coeducational School and in the All-Male School

<table>
<thead>
<tr>
<th>School</th>
<th>M-F</th>
<th>Achievement motivation</th>
<th>Attitude to school</th>
<th>Criticism of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-Male</td>
<td>Masc</td>
<td>51.3</td>
<td>65.8</td>
<td>57.5</td>
</tr>
<tr>
<td></td>
<td>Fem</td>
<td>53.0</td>
<td>71.6</td>
<td>53.0</td>
</tr>
<tr>
<td>Coed.</td>
<td>Masc</td>
<td>40.3</td>
<td>50.2</td>
<td>24.5</td>
</tr>
<tr>
<td></td>
<td>Fem</td>
<td>61.5</td>
<td>70.2</td>
<td>39.5</td>
</tr>
</tbody>
</table>

Note.-- All scores in this table have been transformed into a percentage of the highest possible score on the scale. A high score reflects a positive orientation towards education.
Scores on the Criticism of Education scale were reversed in order to make the results for the three scales comparable. That is, instead of a high score indicating a critical attitude toward education, it was transformed to represent a non-critical attitude. Also, each scale score was standardized by transforming the score into the percentage that it represented of the highest possible score on the scale. The results of the analysis are summarized in Table 7. Examination of Table 7 reveals a significant School X M-F interaction which is illustrated in Figure 2. As Figure 2 demonstrates, when the combined achievement motivation and educational attitude scale scores are used as a measure of educational orientation, the results support the assumptions underlying Hypotheses 2 and 3. In the coeducational school feminine males expressed a significantly more positive orientation towards education than the masculine males ($F = 10.80; \text{df} = 1, 76; p < .01$); however, in the all-male school masculine and feminine males did not differ in their educational orientation.

Although the significant School X M-F interaction supports Hypotheses 2 and 3, the hypotheses do entail specific predictions with respect to achievement motivation and educational attitudes. Analysis of variance for simple effects was carried out on the individual scale scores. This analysis, summarized in Table 8, reveals
Table 7. Summary of Analysis of Variance of Educational Orientation

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School (A)</td>
<td>1</td>
<td>7249.00</td>
<td>7.42***</td>
</tr>
<tr>
<td>M-F (B)</td>
<td>1</td>
<td>5870.70</td>
<td>6.01**</td>
</tr>
<tr>
<td>A X B</td>
<td>1</td>
<td>4725.94</td>
<td>4.84**</td>
</tr>
<tr>
<td>Subj. w. groups</td>
<td>76</td>
<td>977.52</td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale (C)</td>
<td>2</td>
<td>8811.58</td>
<td>404.02***</td>
</tr>
<tr>
<td>A X C</td>
<td>2</td>
<td>2515.11</td>
<td>115.32***</td>
</tr>
<tr>
<td>B X C</td>
<td>2</td>
<td>333.33</td>
<td>15.29***</td>
</tr>
<tr>
<td>A X B X C</td>
<td>2</td>
<td>45.94</td>
<td>2.11</td>
</tr>
<tr>
<td>C X Subj. w. groups</td>
<td>152</td>
<td>21.81</td>
<td></td>
</tr>
</tbody>
</table>

** p<.05
*** p<.01
Fig. 2. Educational Orientation of Masculine and Feminine Subjects in the Coeducational School and in the All-Male School

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Table 8. Comparison of Masculine Males and Feminine Males in Each School on Achievement Motivation, Attitudes Toward School, and Criticism of Education

<table>
<thead>
<tr>
<th>Scale</th>
<th>School</th>
<th>Group Mean</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Masc.</td>
<td>Fem.</td>
</tr>
<tr>
<td>Achievement Motivation</td>
<td>All-Male</td>
<td>51.3</td>
<td>53.0</td>
</tr>
<tr>
<td>Attitude toward School</td>
<td></td>
<td>65.8</td>
<td>71.6</td>
</tr>
<tr>
<td>Criticism of Education</td>
<td></td>
<td>57.5</td>
<td>53.0</td>
</tr>
<tr>
<td></td>
<td>Coed.</td>
<td>40.3</td>
<td>61.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50.2</td>
<td>70.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24.5</td>
<td>39.5</td>
</tr>
</tbody>
</table>

* p<.10  
** p<.05
no significant differences in achievement motivation or either measure of attitudes toward education between masculine and feminine males in the all-male school; however, in the coeducational school feminine males were significantly higher in achievement motivation and there was a marginally significant tendency for the feminine males to express more favorable attitudes toward school than their masculine peers.

Reference again to Table 7 reveals a significant School X Scale interaction which is depicted in Figure 3. Post hoc analysis, summarized in Table 9, shows that the males in the all-male school expressed less critical attitudes toward education than males in the coeducational school. Further analysis, summarized in Table 10, reveals that this difference was due to the significantly more critical attitudes toward education expressed by masculine males in the coeducational school compared to the masculine males in the all-male school environment.

Adjustment by Social Conformity and Academic Adjustment

In order to select high and low conformers, the median of all subjects' scores on the Adjustment by Social Conformity dimension was calculated (Mdn. = 36.5). Subjects were assigned to either a high conformity or low conformity category, depending on whether their score
Fig. 3. Achievement Motivation, Attitude towards School, and Criticism of Education of Subjects in the Coeducational and in the All-Male School

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Table 9. Comparison of Coeducational and All-Male School Subjects on Achievement Motivation, Attitudes Toward School, and Criticism of Education

<table>
<thead>
<tr>
<th>Scale</th>
<th>Group Means</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coed.</td>
<td>All-Male</td>
</tr>
<tr>
<td>Achievement Motivation</td>
<td>50.8</td>
<td>52.1</td>
</tr>
<tr>
<td>Attitude toward School</td>
<td>60.1</td>
<td>68.6</td>
</tr>
<tr>
<td>Criticism of Education</td>
<td>32.0</td>
<td>55.3</td>
</tr>
</tbody>
</table>

** p<.01
Table 10. Comparison of Masculine and Feminine Males in a Coeducational School with Masculine and Feminine Males in an All-Male School on Achievement Motivation and Educational Attitudes

<table>
<thead>
<tr>
<th>Scale</th>
<th>Masculine Males Coed.</th>
<th>All-Male</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>40.3</td>
<td>51.3</td>
<td>1.18</td>
</tr>
<tr>
<td>Attitude toward School</td>
<td>50.2</td>
<td>65.8</td>
<td>2.38</td>
</tr>
<tr>
<td>Criticism of Education</td>
<td>24.5</td>
<td>57.5</td>
<td>10.66**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale</th>
<th>Feminine Males Coed.</th>
<th>All-Male</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>61.5</td>
<td>53.0</td>
<td>0.71</td>
</tr>
<tr>
<td>Attitude toward School</td>
<td>70.2</td>
<td>71.6</td>
<td>-</td>
</tr>
<tr>
<td>Criticism of Education</td>
<td>39.5</td>
<td>53.0</td>
<td>1.80</td>
</tr>
</tbody>
</table>

** p<.01
fell above or below the median. Subsequently, for both schools groups of 25 high conforming and 25 low conforming males were selected. Selection was randomized, although groups within each school were matched for their level of socio-economic status. The data for each group regarding adjustment by social conformity, age, I.Q., and socio-economic status (SES) are summarized in Appendix B-2.

**Hypothesis 4.** Within both a coeducational high school and an all-male high school males high on adjustment by social conformity demonstrate higher academic performance than males low on adjustment by social conformity.

Table 11 shows the achievement data for the high and low social conformers in both schools. A 2 × 2 (School X Conformity) analysis of variance was carried out on overall grade point averages. The results of this analysis are summarized in Table 12 which reveals no significant school, conformity, or interaction effects. In addition, a 2 × 2 × 3 (School X Conformity X Course) analysis of variance with repeated measures on the third factor was carried out on specific course grades. The results of this analysis are summarized in Table 13 which indicates no significant differences in achievement between high and low conformers. Therefore, the results pertaining to both overall averages and specific course grades fail to support Hypothesis 4 by showing no significant achievement
Table II. Mean Course Grades and Overall Average of High and Low Conformers in the Coeducational School and in the All-Male School

<table>
<thead>
<tr>
<th>School</th>
<th>Conf.</th>
<th>English</th>
<th>Math</th>
<th>Science</th>
<th>Physical education</th>
<th>Overall average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>65.4</td>
<td>71.0</td>
<td>62.3</td>
<td>70.5</td>
<td>65.5</td>
</tr>
<tr>
<td>All-Male</td>
<td>Low</td>
<td>65.4</td>
<td>70.8</td>
<td>60.6</td>
<td>72.8</td>
<td>63.8</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>59.6</td>
<td>60.8</td>
<td>67.5</td>
<td>68.4</td>
<td>64.7</td>
</tr>
<tr>
<td>Coed.</td>
<td>Low</td>
<td>56.8</td>
<td>56.7</td>
<td>61.6</td>
<td>70.2</td>
<td>61.0</td>
</tr>
</tbody>
</table>

* A subject's overall average represents the mean grade of all courses taken, including other courses as well as English, mathematics, science and physical education.
Table 12. Summary of Analysis of Variance of Overall Grade Average

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>School (A)</td>
<td>1</td>
<td>86.49</td>
<td>.61</td>
</tr>
<tr>
<td>Conformity (B)</td>
<td>1</td>
<td>182.25</td>
<td>1.30</td>
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<td>A X B</td>
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<tr>
<td>Within Cell</td>
<td>96</td>
<td>140.26</td>
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</tbody>
</table>
Table 13. Summary of Analysis of Variance for Specific Courses

<table>
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<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>School (A)</td>
<td>1</td>
<td>2181.61</td>
<td>9.95**</td>
</tr>
<tr>
<td>Conformity (B)</td>
<td>1</td>
<td>248.43</td>
<td>1.13</td>
</tr>
<tr>
<td>A X B</td>
<td>1</td>
<td>453.87</td>
<td>2.07</td>
</tr>
<tr>
<td>Subj. w. groups</td>
<td>96</td>
<td>219.36</td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course (C)</td>
<td>2</td>
<td>231.87</td>
<td>6.92**</td>
</tr>
<tr>
<td>A X C</td>
<td>2</td>
<td>1516.62</td>
<td>45.29***</td>
</tr>
<tr>
<td>B X C</td>
<td>2</td>
<td>3.43</td>
<td>0.10</td>
</tr>
<tr>
<td>A X B X C</td>
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<td>36.67</td>
<td>1.09</td>
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<tr>
<td>C X Subj. w. groups</td>
<td>192</td>
<td>33.49</td>
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</tr>
</tbody>
</table>

** p<.05  
*** p<.01
differences between high and low conformers.

The significant School X Course interaction is accounted for by the fact that students in the all-male school achieved higher grades than the coeducational school males in English ($F = 9.02; df = 1, 96; p < .01$) and mathematics ($F = 25.56; df = 1, 96; p < .01$).

Hypotheses 5 and 6 focused on the relationship between adjustment by social conformity and the students' orientation toward education.

Hypothesis 5. Within both an all-male high school and a coeducational high school males high on adjustment by social conformity are higher in achievement motivation than males low on adjustment by social conformity.

Hypothesis 6. Within both an all-male high school and a coeducational high school males high on adjustment by social conformity possess more favorable attitudes toward education than males low on adjustment by social conformity.

Table 14 shows the achievement motivation and attitude toward education data for the high and low conformers in both schools. A 2 X 2 X 3 (School X Conformity X Scales) analysis of variance with repeated measures on the third factor was carried out on the educational orientation data. The results of this analysis are summarized in Table 15 which indicates a significant Conformity main
Table 14. Mean Achievement Motivation, Attitude toward School, and Criticism of Education Scores for High and Low Conformers in the All-Male and in the Coeducational School

<table>
<thead>
<tr>
<th>School</th>
<th>Conf.</th>
<th>Achievement motivation</th>
<th>Attitude to school</th>
<th>Criticism of education</th>
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<td>All-Male</td>
<td>High</td>
<td>59.0</td>
<td>72.4</td>
<td>62.0</td>
</tr>
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<td></td>
<td>Low</td>
<td>51.2</td>
<td>64.2</td>
<td>56.4</td>
</tr>
<tr>
<td>Coed.</td>
<td>High</td>
<td>60.2</td>
<td>66.3</td>
<td>36.0</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>41.2</td>
<td>55.6</td>
<td>27.2</td>
</tr>
</tbody>
</table>

Note.— All scores in this table have been transformed into a percentage of the highest possible score on the scale. A high score reflects a positive orientation towards education.
<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
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<tr>
<td>School (A)</td>
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<td>12883.86</td>
<td>27.85**</td>
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<td>Subj. w. groups</td>
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<tr>
<td><strong>Within Subjects</strong></td>
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<tr>
<td>Scales (C)</td>
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<td>33.50**</td>
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<td>A X C</td>
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<td>3991.85</td>
<td>14.25**</td>
</tr>
<tr>
<td>B X C</td>
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<td>246.41</td>
<td>0.88</td>
</tr>
<tr>
<td>A X B X C</td>
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<td>148.01</td>
<td>0.53</td>
</tr>
<tr>
<td>C X Subj. w.</td>
<td>192</td>
<td>280.07</td>
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<tr>
<td>groups</td>
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<td></td>
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</tr>
</tbody>
</table>

*** p<.01
effect. In both the all-male school ($F = 4.21; df = 1, 96; p < .05$) and the coeducational school ($F = 13.31; df = 1, 96; p < .01$) males high on adjustment by social conformity expressed a significantly more positive orientation toward education than males low on adjustment by social conformity. Analysis of variance of simple effects for specific scales revealed, however, that high conformers were significantly higher than low conformers only on the achievement motivation scale and only for the coeducational school sample ($F = 4.41; df = 1, 96; p < .05$). The results pertaining to achievement motivation and educational attitudes therefore only partially support Hypotheses 5 and 6.

With regard to the School X Scale interaction, analysis of variance of simple effects, summarized in Table 16, indicates that males from the all-male high school expressed significantly less critical attitudes toward education than the males from the coeducational school.
Table 16. Comparison of Coeducational and All-Male School Subjects on Achievement Motivation, Attitudes Toward School, and Criticism of Education

<table>
<thead>
<tr>
<th>Scale</th>
<th>Group Means</th>
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<tr>
<td>Achievement Motivation</td>
<td>50.7  55.1</td>
<td>0.94</td>
</tr>
<tr>
<td>Attitude toward School</td>
<td>60.9  68.3</td>
<td>2.61</td>
</tr>
<tr>
<td>Criticism of Education</td>
<td>31.6  59.2</td>
<td>37.24**</td>
</tr>
</tbody>
</table>

** p<0.01
Masculinity-Femininity and Academic Adjustment

The major hypothesis underlying this study was that an all-male school, in contrast to a coeducational school, provides an environment which is more conducive to the academic adjustment of the male student, especially the masculine male. Three specific hypotheses were formulated to test this major hypothesis. The results pertaining to overall averages of the subjects supported Hypothesis 1. For the all-male school sample feminine and masculine males did not differ significantly in their overall tenth grade averages; whereas, for the coeducational school sample the feminine males achieved significantly higher overall tenth grade averages than the masculine males. Although direct comparisons between schools are limited by the possibility of differences between schools in such factors as academic standards and school climates, the results indicate that the students from the all-male school generally were superior in performance to the coeducational school students. However, the difference between the schools was attributable primarily to the
subaverage achievement of the masculine males in the coeducational school. There were no significant differences between the overall averages of the feminine males from the all-male school, feminine males from the coeducational school, and masculine males from the all-male school. However, the masculine males from the coeducational school were significantly lower in achievement than all three of those groups. This finding lends further support for the hypothesis that the coeducational school environment mitigates against the academic performance of the masculine boy. On the other hand, for specific course grades there was not as strong support for Hypothesis 1. For the all-male school sample masculine and feminine males did not differ significantly in their achievement in English, mathematics, science, or physical education; whereas, for the coeducational school sample the feminine males achieved significantly higher grades than the masculine males in mathematics and science. However, there were no significant differences in the achievement of masculine and feminine males in English and physical education for this coeducational school sample.

Thus, the results pertaining to the academic achievement of masculine and feminine males in each school environment generally support the major hypothesis. It appears that an all-male school, in contrast to a coeducational
school, does provide an environment which is more conducive to the academic performance of the masculine male student. The findings of the present research are consistent with those of previous research. Studies in coeducational schools have consistently found that masculine boys obtain lower academic averages than feminine boys (Gough, 1964; Pierce, 1961; Roberts, 1962; Sexton, 1969; Young, 1962), while research in all-male colleges has indicated that masculine males achieve at a level similar to that of the feminine males (Hardy, 1956; Holland, 1959; Winkleman, 1962).

Two additional hypotheses were examined to test the major hypothesis. These hypotheses predicted that within a coeducational high school feminine males are higher in achievement motivation (Hypothesis 2) and possess more favorable attitudes toward education (Hypothesis 3) than masculine males; whereas within an all-male high school feminine males and masculine males do not differ in either achievement motivation or attitudes toward education. Hypothesis 2 received support from the results; no significant differences in achievement motivation were observed between the masculine and feminine males in the all-male school, whereas, in the coeducational school feminine males were significantly higher in achievement motivation their masculine male peers. Hypothesis 3 was
only partially supported by the results. As predicted, no significant differences in attitudes toward school or criticism of education were observed between the masculine and feminine males in the all-male school; however, in the coeducational school feminine males expressed significantly more favorable attitudes toward school than the masculine males, but feminine and masculine males did not differ significantly in their criticism of education. Consistent with the findings for school performance, the feminine males in the all-male school, feminine males in the coeducational school, and masculine males in the all-male school did not differ significantly in their general orientation toward education (combined achievement motivation and educational attitude scores). The masculine males in the coeducational school, however, were significantly less favorably oriented towards education than the other three groups of males.

Thus, the results pertaining to both the students' academic performance and orientation toward school support the proposition that a conflict does exist between the masculine male and the coeducational school environment. Although these results do not suggest why this conflict exists, the following two interpretations are at least possible. One explanation is that the problem of the masculine male in the coeducational school may reflect
his difficulty adjusting to the expectations of the female teachers. As Sexton (1969) suggests, female teachers most often favor students who are neat, clean, polite, and obedient. Female teachers, more than male teachers, tend to discourage talking and expect their students to passively attend to their lessons with little or no participation and definitely no movement. It is suggested that the male student, and especially the masculine male, finding such behavior norms extremely difficult to comply with, rejects these feminine expectations and, perhaps, the classroom environment in general.

A second explanation of the conflict between the masculine male and the coeducational school environment centers on the effect of the presence of female students in the classroom. It is suggested that a tendency exists for some boys to assert their masculinity to a greater degree in the presence of female peers than when solely in the presence of peers of their own sex. This "assertion of masculinity" may be interpreted as expressing those behaviors which attempt to present an image of independence, fearlessness, adventurousness, aggressiveness, strength, and insensitivity. These "masculine" behaviors may be contrasted with those perceived by society as typically "feminine": passivity, sensitivity, dependence, obedience, and weakness. In the presence of female peers, then,
certain boys behave so as to present an image of masculinity as described above. These behaviors obviously conflict with the feminine behavior norms of the female teacher and add to the conflict between the masculine male and the coeducational school. Such an interpretation is supported by the data in Table 1 in the Results section. In the coeducational school sample 60% of the males scored in the highly masculine range on the CPI, whereas, in the all-male school sample only 38% of the males scored in the masculine range. The large proportion of masculine males in the coeducational sample may reflect the need of the males to assert their masculinity in the presence of female peers and against the feminizing influence of the female teachers.

In contrast, the male student's behavior patterns are more consistent with the normative expectations of the all-male school environment. Furthermore, the absence of female students (and teachers) reduces the male's need to exhibit those behaviors classified as masculine; therefore, he can conform to the academically oriented demands of the all-male school without fear of jeopardizing his masculinity. The smaller proportion of masculine males in the all-male school sample in Table 1 may reflect the absence of this need to assert their masculinity. In the all-male school, then, the masculine
male has favorable attitudes toward education and is motivated to succeed since academic success can be achieved without abandonment of his masculine interests and behavior patterns.

Adjustment by Social Conformity and Academic Adjustment

Three hypotheses were formulated to investigate the relationship between social conformity and school adjustment. These hypotheses predicted that, regardless of the school attended, those subjects high on adjustment by social conformity are higher in academic achievement (Hypothesis 4) and achievement motivation (Hypothesis 5) and possess more favorable attitudes toward education (Hypothesis 6) than subjects low on adjustment by social conformity.

The findings regarding the relationship between social conformity and school achievement were generally inconclusive. No significant differences were observed between subjects high and low on adjustment by social conformity when their overall averages and specific course grades were compared. However, all differences between high and low social conformers were in the predicted direction. That is, for both the coeducational and all-male schools high conformers were higher in achievement than low conformers.
The findings regarding the subjects' orientation toward education were more consistent with the experimental predictions. Regardless of the school sampled, those individuals high on adjustment by social conformity expressed a significantly more positive orientation toward education than did those low on adjustment by social conformity. However, when specific scale differences were investigated it was observed that those subjects high on social conformity were significantly higher than subjects low on social conformity only in achievement motivation. No significant differences were obtained between these groups on either attitudes toward school or criticism of education. Furthermore, the results revealed that high and low conformers in the all-male school were significantly less critical of education than both high conformers and low conformers in the coeducational school. This finding further emphasizes the hypothesized conflict between the coeducational school environment and the male student.

Conclusions and Implications

The present study attempted to advance the study of the relationship between masculinity-femininity and academic adjustment one step ahead by using all-male high school subjects. To the researcher's knowledge, this was the first study to investigate these relationships in an all-male high school environment. Although the results
generally supported the hypotheses, these results left unanswered the question concerning why the conflict exists between the masculine male and the coeducational school environment. The results also fail to explain why these masculine boys are outperformed by feminine boys in the coeducational school in some courses but not in others. Because of these unanswered questions further investigation of the relationship between masculinity-femininity and academic achievement is needed. As well as replicating the present study using the CPI measure of masculinity-femininity, future studies should employ other measures of masculinity-femininity. In addition, the relatively small sample size and the use of only two school populations severely limit the generalizability of these findings. The use of larger samples and a wider range of schools and grade levels is suggested.

Of significant value would be an examination of the longitudinal effects of exposure of males to each school environment. Another possibility involves a study of the effects on the student of changing from one school environment to another. In fact, such a study could be conducted in the same all-male high school employed in the present study, since this school will become a coeducational school at the commencement of the 1971-72 academic year.

Examination of the school achievement and orientation towards education of masculine and feminine males after a
period of time in the coeducational school environment would add significantly to the understanding of the effects of the type of school environment on the academic adjustment of male students.
APPENDIX A

INSTRUMENTS
APPENDIX A-1

ANSWER BOOKLET

Student Agreement For Research Project

I, the undersigned, give permission for the researcher associated with this project to inspect my school records. I agree to this with the understanding that only information related to academic performance will be looked at and that all information will be kept strictly confidential.

Signature of student ________________________
Background Information

Name ____________  Father's occupation ______

Age ___  Mother's occupation_______

Grade ___  Your occupational goal ___

Number of brothers ___  Check one of the following:
Number of sisters ___  Living with both parents ( )

Since you have been in high school have you been a member of a sports team in or outside of school? If so, list those sports in which you participated in the spaces below:

________________________
________________________
________________________
________________________

Also, to what organizations or clubs have you belonged, in or outside of school? List these below:

________________________
________________________
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APPENDIX A-2

QUESTIONNAIRE BOOKLET

Instructions:

This booklet contains a series of statements. Read each one, decide how you feel about it, and then mark your answer on the special answer sheet. If you agree with a statement or feel that it is true about you, fill in the space under T (true) on the answer sheet. If you disagree with a statement or feel that it is not true about you, fill in the space under F (false). In marking your answers on the answer sheet make sure that the numbers of the statements are the same as the number on the answer sheet.

Work individually and as quickly as possible. Please respond to each statement honestly and accurately. The instructor will collect the booklets at the end of the period.
I usually go to the movies more than once a week.
I like to be with a crowd who play jokes on one another.
I am so touchy on some subjects that I can't talk about them.
I am sure people think I don't have a great deal of drive.
I am pretty sure I know how we can settle the international problems we face today.
Self improvement means nothing to me unless it leads to immediate success.
I never make judgments about people until I am sure of the facts.
I like large noisy parties.
I would like to be a soldier.
I find it hard to keep my mind on a task or job.
I think I would like to belong to a motorcycle club.
People have always said that I am a hard worker.
I must admit that I feel sort of scared when I move to a strange place.
I like adventure stories better than romantic stories.
I am inclined to take things hard.
I consider a matter from every standpoint before I make a decision.
I liked "Alice in Wonderland" by Lewis Carroll.
I would like to be a nurse.
A high school education will help one to be a good citizen.
Generally speaking, students cannot be expected to like their teachers.
I think I would like the work of a dress designer.
I am somewhat afraid of the dark.
I will keep working on a problem after others have given up.
I often do whatever makes me feel cheerful here and now, even at the cost of some distant goal.
My home life was always happy.
I must admit that I have a bad temper, once I get angry.
When someone does me a wrong I feel I should pay him back if I can, just for the principle of the thing.
I like to go to parties and other affairs where there is lots of loud fun.
Are you interested in interpretive dancing?
Sometimes people say I neglect other important aspects of my life because I work so hard.
It is unrealistic for me to insist on becoming the best in my field of work all of the time.
I would do almost anything on a dare.
I don't seem to care what happens to me.
I am often said to be hotheaded.
I think I would like to drive a racing car.
I think I would like the work of a school teacher.
I don't really matter to me whether I become one of the best in my field.

At times I feel like picking a fist fight with someone.

I very much like hunting.

Most people would tell a lie if they could gain by it.

I can learn more working on a job than in high school.

I would like to wear expensive clothes.

A windstorm terrifies me.

In high school pupils learn to disrespect everything of high idealistic character.

Society owes a lot more to the businessman and the manufacturer than it does to the artist and the professor.

When I was going to school I played hooky quite often.

I always try to do at least a little better than what is expected of me.

I get very tense and anxious when I think other people are disapproving of me.

I want to be an important person in the community.

The illustrations, examples, and explanations given by most teachers are too dry or technical.

I prefer a shower to a bathtub.

The main reason students cheat is because of the ridiculous assignments most teachers make.

Sometimes I think of things to bad to talk about.

I think I would like the work of a building contractor.

I would be very unhappy if I was not successful at something I had seriously started to do.

In school I was sometimes sent to the principal for cutting up.

I always try to make the best school grades that I can.

There is something wrong with a person who can't take orders without getting angry or resentful.

Does the strong odor of perspiration disgust you?

Sometimes I feel that I am about to go to pieces.

Most teachers are too rigid and narrow-minded.

I must admit I often try to get my own way regardless of what others may want.

I have frequently found myself, when alone, pondering such abstract problems as free will, evil, etc.

The sole purpose of an education should be to equip students to make a living.

I would rather do an easy job than one involving obstacles which must be overcome.

I like to keep people guessing what I'm going to do next.

I get disgusted with myself when I have not learned something properly.

If I were a reporter I would like very much to report news of the theatre.

I like mechanics magazines.

I think that I am stricter about right and wrong than most people.

I was a slow learner in school.
I like to boast about my achievements every now and then.
I would rather go to high school than to stay at home.
Do you prefer a shower bath to a tub bath?
High school develops self-reliance.
I must admit that I enjoy playing practical jokes on people.
A high school education is worth a million dollars to any young person.
Do you often read such magazines as Good Housekeeping and Ladies Home Journal?
I often act on the spur of the moment without stopping to think.
I like to be the center of attention.
There are too many rules and regulations in school.
I have very few quarrels with members of my family.
Do you like to wear jewelry?
I think I could do better than most of the present politicians if I were in office.
Sometimes I feel as if I must injure either myself or someone else.
Do you like dramas very much?
Planning one's activities in advance is very likely to take most of the fun out of life.
It is very hard for me to start a conversation with strangers.
I am a better talker than a listener.
The thought of being in an automobile accident is very frightening to me.
My parents have often disapproved of my friends.
I think I would like the work of a clerk in a department store.
I think I would like the work of a librarian.
If I get too much change in a store I always give it back.
I enjoy work more than play.
I think I would like the work of a garage mechanic.
I have sometimes stayed away from another person because I feared doing something or saying something that I might regret afterwards.
I become quite irritated when I see someone spit on the sidewalk.
Do you enjoy dancing with a member of your own sex?
I have had blank spells in which my activities were interrupted and I did not know what was going on around me.
Sometimes I feel like smashing things.
My parents were always strict and stern with me.
Do you think it is wrong to shoot rabbits just for fun?
The average person is not able to appreciate art and music very well.
High school may be all right, but I don't think it does any good.
I feel that I have often been punished without cause.
Sometimes I feel like swearing.
Most teachers lack understanding of the needs and interests of their students.
9. Sometimes I rather enjoy going against the rules and doing things I'm not supposed to.
0. Police cars should be especially marked so that you can always see them coming.
1. I used to like it very much when one of my papers was read to the class in school.
2. Sometimes I have the same dream over and over.
3. My classes are very uninteresting.
4. Do you like to wear colorful clothes?
5. Most people are secretly pleased when someone else gets into trouble.
6. I am sometimes cross and grouchy without any good reason.
7. Does it disgust you to hear someone use foul language?
8. I would like to be an actor on the stage or in the movies.
9. I am very slow in making up my mind.
0. High school teachers are parasites on the community.
1. I get excited very easily.
2. I have never done anything dangerous for the thrill of it.
3. Do you dislike the words "belly" and "guts"?
4. Students are not given enough freedom in selecting their own topics for themes and reports.
5. I am apt to show off in some way if I get the chance.
6. I really don't enjoy hard work.
7. I have rarely done extra studying in connection with my work.
8. Does it disgust you to see someone spitting tobacco juice?
9. I like to read about history.
0. Do you like to read about new styles in clothing?
1. High school has its drawbacks, but I like to go.
2. I think I would like to fight in a boxing match sometime.
3. When people are not going to see what I do, I often do less than my very best.
4. I have the wanderlust and am never happy unless I am roaming or travelling about.
5. It helps one to get a job if he has a high school diploma.
6. I have a very strong desire to be a success in the world.
7. I work because I have to, and for that reason only.
8. I prefer to be paid on the basis of how much work I have done rather than on how many hours I have worked.
9. It is almost impossible for the average student to do all his assigned homework.
0. I don't like to associate with people who haven't a high school education.
1. I have had very peculiar and strange experiences.
2. A high school graduate is often worse off morally than he was before going to high school.
3. I would like to see a bullfight in Spain.
44. I am often bothered by useless thoughts which keep running through my mind.
45. My way of doing things is apt to be misunderstood by others.
46. I try to work just hard enough to get by.
47. I like to do school work.
48. I don't mind working while other people are having fun.
49. I often set goals that are difficult to reach.
50. My goal is to do at least a little bit more than anyone else has done before.
51. I certainly feel useless at times.
52. I wake up fresh and rested most mornings.
53. Most teachers have favorites instead of showing equal fairness and impartiality toward all.
54. I enjoy doing things that challenge me.
55. High school is all right, but I don't like it.
56. I think I would enjoy having authority over other people.
57. Do you know what the world record is for either the 100 yard dash, the pole vault or the mile race?
58. I must admit I find it very hard to work under strict rules and regulations.
59. A person needs to "show off" a little now and then.
60. I have strange and peculiar thoughts.
61. Does a big fire scare you?
62. I often feel as though I have done something wrong or wicked.
63. Generally speaking, football coaches contribute more to school life than do the teachers.
64. If given the chance I would make a good leader of people.
65. I do not always tell the truth.
66. I don't care about high school, but I think one ought to.
67. I sometimes pretend to know more than I really do.
68. I like to talk before groups of people.
69. Do you usually read the sports section of your newspaper?
70. Would you like to be an interior decorator?
71. I like to plan out my activities in advance.
72. Do you often use the word "cute" in describing people or things?
73. Do you enjoy arranging flowers?
74. Do you like to read about the construction of airplanes and battleships?
75. I often get disgusted with myself.
76. Does the thought of having burglars in your home at night frighten you?
77. Would you like to be a private secretary?
78. At times I have a strong urge to do something harmful or shocking.
79. I can remember playing sick to get out of something.
80. Do you like to spend considerable time caring for your hands and your complexion?
81. Do you enjoy preparing food and doing housework?
82. I fall in and out of love rather easily.
83. Are you afraid of black widow spiders?
84. Does a drunken man disgust you?
85. I have a tendency to give up easily when I meet difficult problems.
86. Are you afraid of insane persons?
87. Do colors greatly interest you?
88. I keep out of trouble at all costs.
89. I often get feelings like crawling, burning, tingling, or "going to sleep" in different parts of my body.
90. Would you like to be a social worker?
91. I often lose my temper.
92. Do you like to do handicraft work such as knitting, sewing or crocheting?
APPENDIX A-3

SCALES COMPRISING THE QUESTIONNAIRE

CPI Masculinity-Femininity Scale

I am very slow in making up my mind.
I think I would like the work of a building contractor.
I think I would like the work of a dress designer.
I become quite irritated when I see someone spit on the sidewalk.
It is hard for me to start a conversation with strangers.
I must admit that I enjoy playing practical jokes on people.
I get very tense and anxious when I think other people are disapproving of me.
A windstorm terrifies me.
I think I would like the work of a clerk in a department store.
I get excited very easily.
I like to boast about my achievements every now and then.
I think I would like the work of a garage mechanic.
I like adventure stories better than romantic stories.
I prefer a shower to a bathtub.
The average person is not able to appreciate art and music very well.
The thought of being in an automobile accident is very frightening to me.
At times I feel like picking a fist fight with someone.
Sometimes I have the same dream over and over.
I think I am stricter about right and wrong than most people.
I think I would like to drive a racing car.
I like to be with a crowd who play jokes on one another.
I am somewhat afraid of the dark.
I think I could do better than most of the present politicians if I were in office.
I always try to make the best school grades that I could.
I am inclined to take things hard.
I would like to be a soldier.
I like to go to parties and other affairs where there is lots of loud fun.
I very much like hunting.
In school I am sometimes sent to the principal for cutting up.
I think I would like the work of a librarian.
Sometimes I feel that I am about to go to pieces.
I would like to be a nurse.
If I were a reporter I would like very much to report news of the theatre.
I like mechanics magazines.
I want to be an important person in the community.
I must admit I feel sort of scared when I move to a strange place.
I am pretty sure I know how we can settle the international problems we face today.
If I get too much change in a store I always give it back.
CPI Self-Control Scale

A person needs to "show off" a little now and then. 
I have had very peculiar and strange experiences. 
I am often said to be hotheaded. 
I sometimes pretend to know more than I really do. 
Sometimes I feel like smashing things. 
Most people would tell a lie if they could gain by it. 
I think I would enjoy having authority over other people. 
I find it hard to keep my mind on a task or job. 
I have sometimes stayed away from another person because I feared doing or saying something that I might regret afterwards. 
Sometimes I feel like swearing. 
I like to boast about my achievements every now and then. 
I must admit I often try to get my own way regardless of what others may want. 
Sometimes I think of things too bad to talk about. 
I would do almost anything on a dare. 
I like to be the center of attention. 
I would like to see a bullfight in Spain. 
At times I feel like picking a fistfight with someone. 
Sometimes I have the same dream over and over. 
I do not always tell the truth. 
I fall in and out of love rather easily. 
I would like to wear expensive clothes. 
I consider a matter from every standpoint before I make a decision. 
I have strange and peculiar thoughts. 
My home life was always happy. 
I often act on the spur of the moment without stopping to think. 
My way of doing things is apt to be misunderstood by others. 
I never make judgments about people until I am sure of the facts. 
Most people are secretly pleased when someone else gets into trouble. 
Sometimes I feel as if I must injure either myself or someone else. 
I often do whatever makes me feel cheerful here and now, even at the cost of some distant goal. 
I can remember playing sick to get out of something. 
I think I would like to fight in a boxing match sometime. 
I like to go to parties and other affairs where there is lots of loud fun. 
I have frequently found myself, when alone, pondering such abstract problems as freewill, evil, etc. 
I keep out of trouble at all costs. 
I am apt to show off in some way if I get the chance. 
I am often bothered by useless thoughts which keep running through my mind. 
I must admit that I have a bad temper, once I get angry.
Self-Control Scale continued

I like large, noisy parties.
I often feel as though I have done something wrong or wicked.
I am a better talker than a listener.
Sometimes I rather enjoy going against the rules and doing things I am not supposed to.
I have very few quarrels with members of my family.
I have never done anything dangerous for the thrill of it.
I used to like it very much when one of my papers was read to the class in school.
I feel that I have often been punished without cause.
I would like to be an actor on the stage or in the movies.
At times I have a strong urge to do something harmful or shocking.
I often get feelings like crawling, burning, tingling, or "going to sleep" in different parts of my body.
Police cars should be especially marked so that you can always see them coming.

CPI Achievement via Conformance Scale

I have a very strong desire to be successful in the world.
I liked "Alice in Wonderland" by Lewis Carroll.
I usually go to the movies more than once a week.
I have had very peculiar and strange experiences.
I am often said to be hotheaded.
When I was going to school I played hooky quite often.
I think I would like the work of a school teacher.
When someone does me a wrong I feel I should pay him back if I can, just for the principle of the thing.
Planning one's activities in advance is very likely to take most of the fun out of life.
I was a slow learner in school.
There is something wrong with a person who can't take orders without getting angry or resentful.
I wake up fresh and rested most mornings.
I have a tendency to give up easily when I meet difficult problems.
I certainly feel useless at times.
I have the wanderlust and am never happy unless I am roaming or travelling about.
I am sometimes cross and grouchy without any good reason.
My parents have often disapproved of my friends.
My way of doing things is apt to be misunderstood by others.
I have had blank spells in which my activities were interrupted and I did not know what was going on around me.
I like to keep people guessing what I'm going to do next.
Achievement via Conformance continued

If given the chance I would make a good leader of people.
In school I was sometimes sent to the principal for cutting up.
I like to read about history.
I am so touchy on some subjects that I can't talk about them.
I like to talk before groups of people.
I am often bothered by thoughts which keep running through
my mind.
I like to plan my activities in advance.
I must admit I find it very hard to work under strict rules
and regulations.
I like large, noisy parties.
I always try to do at least a little better than what is
expected of me.
I would be very unhappy if I was not successful at something
I had seriously started to do.
I often lose my temper.
My parents were always very strict and stern with me.
I often get disgusted with myself.
Society owes a lot more to the businessman and manufacturer
than it does to the artist and the professor.
I think I would like to belong to a motorcycle club.
I used to like it very much when one of my papers was read
to the class in school.
I don't seem to care what happens to me.

PRF Achievement Motivation Scale

I enjoy doing things that challenge me.
I get disgusted with myself when I have not learned something
properly.
When people are not going to see what I do, I often do less
than my very best.
I will keep working on a problem after others have given up.
I have rarely done extra studying in connection with my work.
I would rather do any easy job than one involving obstacles
which must be overcome.
I often set goals which are difficult to reach.
I try to work just hard enough to get by.
My goal is to do at least a little bit more than anyone
else has done before.
I work because I have to, and for that reason only.
Self improvement means nothing to me unless it leads to
immediate success.
I really don't enjoy hard work.
I prefer to be paid on the basis of how much work I have
done rather than on how many hours I have worked.
Achievement Motivation Scale continued

People have always said that I am a hard worker.
I don't mind working while other people are having fun.
It doesn't really matter to me whether I become one the
best in my field.
Sometimes people say I neglect other important aspects of
my life because I work so hard.
I am sure people think I don't have a great deal of drive.
I enjoy work more than play.
It is unrealistic for me to insist on becoming the best in
my field of work all of the time.

Attitude Toward School Scale

A high school education is worth a million dollars to any
young person.
High school develops self-reliance.
A high school education will help one to be a good citizen.
It helps one to get a job if he has a high school diploma.
I like to do school work.
I would rather go to high school than to stay at home.
I don't like to associate with people who haven't a high
school education.
High school has its drawbacks, but I like to go.
I don't care about high school, but I think one ought to.
High school is all right, but I don't like it.
High school may be all right, but I don't think it does
any good.
There are too many rules and regulations in schools.
My classes are very uninteresting.
I can learn more working on a job than in high school.
A high school graduate is often worse off morally than he
was before going to high school.
In high school pupils learn to disrespect everything of
high idealistic character.
High school teachers are parasites on the community.
Criticism of Education Scale

Most teachers are too rigid and narrowminded. The main reason students cheat is because of the ridiculous assignments most teachers make. Most teachers have special favorites instead of showing equal fairness and impartiality toward all. Most teachers lack the understanding of the needs and interests of their students. The illustrations, examples, and explanations given by most teachers are too dry or technical. Generally speaking, students cannot be expected to like their teachers. It is almost impossible for the average student to do all of his assigned homework. Generally speaking, football coaches contribute more to school life than do the teachers. Students are not given enough freedom in selecting their own topics for themes and reports. The sole purpose of an education should be to equip students to make a living.
APPENDIX B-1

RAW DATA BY SCHOOL AND EXPERIMENTAL CONDITION
## APPENDIX B-1

Raw Data by School and Experimental Condition

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APPENDIX B-2

SUMMARY OF RAW DATA
APPENDIX B-2

Mean M-F score, Age, I.Q., and SES for Masculine and Feminine Subjects in the All-Male School and Coeducational School

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<th>School</th>
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<th>M-F</th>
<th>Age</th>
<th>I.Q.</th>
<th>SES</th>
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APPENDIX B-2

Mean Conformity Score, Age, I.Q., and SES for High and Low Conformers in the Coeducational and the All-Male School

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REFERENCES


Gough, H. G. College attendance among high aptitude students as predicted from the California Psychological Inventory. *Journal of Counseling Psychology*, 1968, 15, 269-.


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VITA AUCTORIS

1948  Born in Windsor, Ontario, Canada.

1966  Graduated from Walkerville Collegiate, Windsor and enrolled as an undergraduate student at the University of Windsor.

1969  Bachelor of Arts Degree from the University of Windsor and commenced studies in the Faculty of Graduate Studies, Department of Psychology, University of Windsor, Ontario.