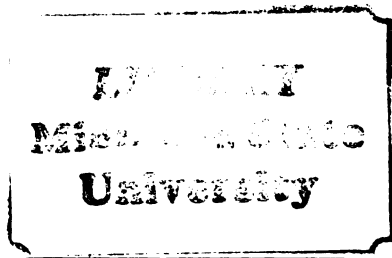


THESIS



This is to certify that the
thesis entitled
ACHIEVEMENT AND CAREER ORIENTATION
IN HONORS COLLEGE MALE AND FEMALE FRESHMEN STUDENTS
IN VARIOUS RESIDENTIAL ENVIRONMENTS

presented by

Margaret Cecelia Walsh

has been accepted towards fulfillment
of the requirements for

M.A. degree in Psychology

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ACHIEVEMENT AND CAREER ORIENTATION
IN HONORS COLLEGE MALE AND FEMALE FRESHMEN STUDENTS
IN VARIOUS RESIDENTIAL ENVIRONMENTS

By

Margaret Cecelia Walsh

A THESIS

Submitted to

Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Psychology

1982

ABSTRACT

ACHIEVEMENT AND CAREER ORIENTATION IN HONORS COLLEGE MALE AND FEMALE FRESHMEN STUDENTS IN VARIOUS RESIDENTIAL ENVIRONMENTS

By

Margaret Cecelia Walsh

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Freshmen Honors College male and female students who accepted or declined the honors-floor dormitory option were compared on several measures; 106 respondents were included. Variables examined were aptitude, personality traits, family achievement orientation, parental background factors and expressed career aspirations. Male students were found to have higher SAT Math scores than female students; there were no other significant sex differences. However, honors students choosing the honors-floor dormitory option had significantly higher SAT Verbal scores while honors students in other college dorm environments had higher family achievement orientation as measured by the FES. On the prestige level of their fathers' occupation, female students in the honors-floor dorm had higher ratings than other students.

Variables found through regression analysis to be significant in influencing Spring GPA performance were: 1) high school GPA, 2) SAT Math scores, 3) intellectual efficiency, and 4) achievement by conformity from the CPI. Several possible interpretations of these results are discussed.

DEDICATION

This master's thesis is dedicated to all the women who have struggled, perserved and confronted their own achievement strivings and shown by their example that women can and have made significant contributions in their professional, personal and political endeavors.

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INTRODUCTION

A longitudinal study, called the TALENT project, consisting of information on socioeconomic background, cognitive abilities and educational aspirations was conducted in 1960. Follow-up surveys measuring participant's educational and occupational attainment were conducted at one, five and eleven years after the date of the participants' expected graduation from high school. Results, analyzed by Astin and Mylint (1971), revealed that women had higher high school grades and scored higher on a composite of academic ability tests taken in grade nine than men. However, by eleven years after high school, men had acquired more education and were earning more money on the job. Sex differences in realization of achievement potential were found across all socioeconomic levels. The discrepancy between achievement potential and realization of achievement potential was most significant for high ability women (Card, Steel and Abeles, 1980).

Many researchers have attempted to explain the determinants of similar discrepant achievement patterns of bright, intelligent honors women, so strikingly different from their male colleagues. Explanations have ranged from a lack of achievement motivation in women (Atkinson and Raynor, 1974; Vernoff, 1969) and fear of success (Horner, 1968, 1972) to differences in attributional patterns (Frieze, et al, 1975, Crandall, 1969) and in parental childrearing practices (Veroff, 1969; Smith, 1969) as well as effects of sex role orientation (Bem, 1975; Spence and Helmreich, 1972) and the

home-career conflict (Astin and Mylint, 1971; Card, Steeles, and Abeles, 1980). These important factors will be examined more closely in the following sections.

Achievement and career success have been traditionally measured by job prestige and salary, reflecting the societal values. Statistics on the imbalance of more prestigious management and administrative positions for men than women and the inequality of higher job salaries for men than women in the labor force are well quoted. It is beyond the scope of this paper to examine the many complex, powerful and realistic social and political factors that contribute, influence and control the career development of women in the working world (Astin and Bayer, 1972; Oppenheimer, 1968; Mednick, Tangri and Hoffman, 1975). The focus of this research will be on the various determinants of women's academic performance and career development. There is a clear interest and need for accumulated information as theorists and women in general try to sort out fact from fiction around women's achievement (Mednick and Weisman, 1975).

Review of the new and growing literature on women's complex achievement patterns and the multilevel factors that shape a woman's career development revealed numerous differences between high achievement potential men and women. The purpose of the present study is to try to determine whether high potential honors students will exhibit significant sexual differentiation on achievement variables such as ability, potential, expectations, aspirations and academic achievement performance as seen in past studies. Although it will not be possible to determine the degree of influence, it is thought that changing social norms and publicized feminist views may have

in achievement motivation on kinds or risks preferred and taken, the level of aspirations set, and level of performance and persistence, a rich body of knowledge was accumulated about male achievement. Early works showed that male subjects who were high in achievement motivation preferred tasks of intermediate rather than extreme levels of difficulty (Atkinson and Litwin, 1960), set intermediate realistic levels of aspiration (Mahone, 1958), and selected work partners of high ability (French, 1956). In general, they performed better and persisted longer at all kinds of tasks in which some element of risk was involved (preferably 50-50), provided that the outcome depended on their ability rather than on chance and that the results would be made known and evaluated in terms of some standard of excellence (Atkinson, 1958). Within the model, anxious students were predicted to resist achievement-oriented activity with resistance greatest when perceived probability (P_s) of success was .50 because intrinsic motivation to undertake the task was opposed by the greatest inhibitory tendency. Instead, the tendency for highly anxious persons to set either extremely high or extremely low aspirations had been noted repeatedly (Atkinson and Feather, 1966; Atkinson and Raynor, 1974). Another important determinant of achievement motivation was the effect of a person's future orientation on the persistence of the immediate task at hand (Raynor, 1974). The effects of a person's past history of success and failure on achievement motivation were also investigated (Weiner, 1965). DeCharms (1968) recognized a determinant called personal causation, i.e., the type of attribution for success or failure on subsequent achievement-oriented events and Weiner (1974) attempted a comprehensive integration of achievement motivation and attribution theory.

The early investigation of achievement motivation and subsequent theoretical formulations rested entirely on studies with male subjects; the conclusions are, therefore, inapplicable to women's achievement motivation. Although Atkinson (1958) recognized this problem, stating that sex differences in achievement motivation constitute "perhaps the most persistent unresolved problem in research on need achievement", female achievement received only scant attention before the revitalization of the feminist movement (Angeline, 1955; French and Lesser, 1964; Lesser, Dravitz and Packard, 1963). However, the general assumption was that women had lower achievement motivation than men.

In 1968, Horner proposed the addition of the motive to avoid success to the achievement motivation model and began to address some of the unsolved issues for women, thereby challenging earlier theories of achievement motivation.

Women's Achievement Motivation and Mediating Variables

In an effort to investigate the source of the early assumption that women have lower achievement motivation, Maccoby and Jacklin (1974) reviewed the only early work of McClelland et al (1953) that included female subjects, pointing out the following summary statements of their findings on sex differences: "1) women get higher N-ACH scores than men under neutral conditions (two studies). 2) Women do not show higher need achievement scores as a result of achievement-involved instructions (three studies). 3) Women's N-ACH scores seemed as valid as men's, in that they relate to performance in the same way." (McClelland et al, 1953, p. 178). The initial assumption that women must have less achievement motivation was based on the phenomenon that while male subjects increased their achievement imagery, female subjects

did not. However, this was true only when the experimental conditions included achievement arousal instructions, i.e. being told that the task reflected not only their intelligence but also the capacity to organize material and to evaluate situations quickly and accurately. For some, the question remained whether female achievement performance would change with different motivational conditions. Field (reported in McClelland et al, 1953, p. 179) used a social arousal condition where instructions were given that emphasized the importance of social acceptance by a group and found that women's N-ACH scores increased considerably and significantly more than men's scores. From these results, it has generally been assumed that women's achievement is influenced by social approval or acceptability, while men's achievement reflects men's interest in intellectual achievement. Maccoby and Jacklin point out that it is difficult to be sure whether the greater increase in women's scores after the Field arousal condition resulted from omitting the competitive theme, introducing the social acceptance theme, or both. Hoffman's (1972) views support the social approval impetus to women's achievement and success, emphasizing her perception that success and affiliation are in reality often incompatible for women. However, on this issue, Stein and Bailey (1973) conclude that girls and women are achievement oriented but learn to value sex role appropriate social skills, clarifying that both boys and girls learn through social reinforcement, i.e., response to approval.

Although the affiliation-achievement issue remains unsettled, women are not necessarily lower than men in achievement motivation, but rather inhibit or do not respond with achievement imagery in competitive conditions such as arousal instructions stressing intelligence

and leadership. Confirmatory results were found in a study of high school girls in a school which emphasized intellectual achievement, competitive admission and pursuing professional careers (Lesser, Krawitz and Packard, 1963). Achievers had increased scores to female stimulus pictures while underachievers responded to male stimulus with more achievement imagery. It is not uncommon to assume in projective measures a relationship between projective responses and the subject's own motivations or behaviors. However, it has been found (Veroff, Wilcox and Atkinson, 1953; Monahan, Kuhn and Shaser, 1974) that subjects of both sexes give fewer achievement themes and related more negative events when responding to a projective story or picture about a female, suggesting that girls usually lower in N-ACH scores may not reflect their own motivations but rather their sex role stereotypes, shared also with men, of typical characteristics for women's achievement. Perhaps the bright women in the Lesser et al (1963) study who are achievers were more readily able to attribute achievement and success to females in spite of the cultural stereotypes, while the bright underachievers had more difficulty, tending to project their own achievement motivation on the more culturally approved stereotype of male achievement.

Fear of Success

It was with these conflicts in mind that Horner (1968, 1970) proposed the fear of success and argued that femininity and individual achievement were viewed as two desirable but mutually exclusive goals, pointing out the sex role limitations in women's actual achievement. She referred to their "fear of success" as the motive to avoid success. A specific psychological barrier toward feminine achievement, it is

based on the anticipated negative consequences of social rejection or loss of one's femininity rather than the theoretically proposed positive feelings like pride for success or shame for failure. However, Horner contended that women face negative consequences not only in failing but in succeeding as well. She states:

As a whole, society has been unable to reconcile personal ambition, achievement and success with femininity. The more successful and independent a woman becomes, the more afraid society is that she has lost her femininity and therefore must be a failure as a wife and mother. . . . On the other hand, the more successful a man is in his work (as reflected in his high status, salary and administrative powers - all of which are in keeping with his masculinity), the more attractive he becomes as spouse and father. Whereas men are unsexed by failure, women seem to be unsexed by success. Horner, 1970, p. 55.

Several early researchers have alluded to achievement-related anxieties, the "price" in anxiety for qualities of independence and achievement orientation (Maccoby, 1963) or "entrance charges" for being creative and assertive (Mannes, 1963). In her original study, Horner (1968) developed a projective fantasy measure of the motive to avoid success that might account for performance decrements by high ability women in mixed sex competitive settings. She recorded the amount of negative events projected upon cues of success to male and female stimulus figures. Recent studies have looked at variations in incidence of fear of success imagery and have generally attempted to explore the concept. Although Horner noted an increase in fear of success in women from 1965 to 1971, others report diminished sex differences for a variety of settings and age groups (Alper, 1973; Kimball, 1973; Ward and Mausner, 1973). Hoffman (1974) found no sex differences but found that women in 1971 showed as much fear of success

as women in Horner's 1965 study. Although college women continued to be fearful, college men seemed to be higher in fear of success as a result of down grading the importance of success. On the other hand, Ward and Mausner (1973) found that their high school student subjects told few affiliative rejection stories (e.g., Ann succeeds in medical school but loses her boyfriend). Kimball (1973) found no sex differences in fear of success in Canadian girls and boys aged thirteen, but his seventeen year old girls wrote significantly more fear of success stories than same aged boys. Several studies of black women suggest that social factors affect degree of fear of success imagery (Puryear and Mednick, 1974; Weston and Mednick, 1970). Black women were frequently higher than black men in achievement motivation and had lower fear of success. Since the social economic opportunities for blacks have tended to favor women, it has been proposed that economic and professional success is more expected of black women than men and definitely considered an asset in a potential marriage partner.

Variations in both male and female imagery have been attributed to sex differences in scoring, the changing social attitudes, subject characteristics of age groups and settings and stimulus properties (Horner, 1970; Hoffman, 1974). However, none of the explanations is consistently supported.

Researchers have also investigated the predictions about the effects of these variations in fear of success imagery. Horner (1972) hypothesized that opposite sex competition leads to performance decrements for women. Mednick and Weisman (1975) clarify that this point of view is supported by several studies but not by others. It would seem that high ability women who have increased fear of success

imagery in the junior and senior years of college and who lower their aspirations, changing to a more traditional and female dominated career, may have done so to avoid competition with the opposite sex in male-dominated fields. Women who preferred to make their failures known instead of their A grades, changed future plans toward traditionally less ambitious careers and indicated higher fear of success, tended to report negative male peer support (e.g., laughed at their aspirations) and dated rarely or not at all (Horner, 1972). Lack of affiliative ties may increase the fear of success and of having one's success be known. While affiliative loss is less of a threat to married or engaged women, the fear of competition with men may still be an underlying issue. Sanford (1961) found that bright women who had not become engaged by senior year of college showed more psychological stress and were more restrictive in their career choices, thereby maintaining a perceived improved possibility for a future marriage. Girls engaged to be married to "brilliant, successful, secure young men" had little difficulty with fear of success as long as the man was viewed as the "smarter" and "more intelligent" of the two so that "competition would be hopeless" (Horner, 1968). The reality of women's perceptions of affiliative loss as a result of intelligence and of success has been supported by some studies which have examined men's attitudes towards bright women. For example, Kamorowsky, (1973) found men wanted women bright but not too bright.

In summary, high ability college women might be expected to have similar achievement behavior except in competitive situations. Participation in an honors college program is hypothesized to be inherently competitive, due to the emphasis on demonstrating and proving one's

intelligence as well as the mixed sex setting. Fear of success due to conflicts between desires to achieve and social concepts of femininity and threats of affiliative loss might be predicted to affect the academic performances of honors women, particularly in their junior and senior years of college.

Achievement Motivation and Attribution Theory

Most causal explanations for the non-achievement of women focus on the internal psychological factors which inhibit women such as fear of success or high fear of failure (see O'Leary, 1974 for a review of this literature). Stein and Bailey (1973) have pointed out that most women do wish to achieve but channel their achievement in home or traditionally defined feminine tasks. Tangri(1972) has recognized that women may in fact achieve vicariously through the achievements of their husbands and children. Lipman-Blumen et al (1980) have elaborated these ideas into a more complete theoretical model which incorporates women's affiliative strivings and achievement motivation, describing several direct and relational achievement styles. They offer possible explanations of women's differences in achievement motivation that are in direct contrast to attributions such as women are less successful in sports and politics and appear to be less motivated to succeed (Epstein, 1971) or success and failure in achievement (i.e., professional occupations) is less important to women than to men (Feather, 1975). This clearly points out how cognitive attributions, whether one's own or other's, may affect perceptions of women's achievement. An understanding of women's attributional patterns and expectations is, therefore, important in predicting sex differentiation in

achievement factors in high ability women and men.

Women's Expectations for Success and Failure

The first focus of sex differentiation in attribution will be on the expectations for success and failure. People with high expectations on achievement tasks have been known to perform better (Battle, 1965; Feather, 1966). Even in studies where random assignments have been made to control for previous history of success, it was found that subjects randomly assigned high expectations performed better than those with low expectations. The differential expectations for success and failure in women and men have been well documented by Crandall (1969). She found that women and girls had relatively low expectations at a variety of tasks, ages and settings. Her samples included, 1) elementary school children who estimated their expectancies prior to performing novel intellectual tasks; 2) 8th graders who were asked to indicate how well they expected to do at digit symbol matching tasks; 3) college students estimating their future grades and projected performances on novel tasks. Her results consistently showed that males had higher expectations than females in all situations. It was clear that ability had not influenced the results since the girls actually had higher grades than the boys (although not significantly) and comparable I.Q. scores. Given the cultural male stereotype that males are more intelligent and more competitive than females (Broverman, Vogel, Broverman, Clarkson and Rosenkrantz, 1972), it seems understandable that females have lower generalized expectancies. When cultural stereotyping is made salient by labeling experimental tasks masculine or feminine, expectations can be altered. Females have given lower expectancy estimates than males when a task was labeled masculine but

sex differences in the expectancies were not noted when the task was labeled feminine (Frieze et al, 1975). Varying results in expectancy studies may again be related to differences in implicit or explicit competitiveness.

As a consequence of higher expectations, males may have improved opportunities for achievement, since higher expectations may lead to better performances as well as higher evaluations of performances. They also may tend to select more difficult tasks for themselves. Thus, without any ability differences, females with lower expectations are at a disadvantage in achievement situations. Whether this is viewed as a characteristic pattern for women or the result of internalized stereotypes, lower expectancies pose another barrier to achievement in women. One may ask whether honors women will have lower achievement expectations than men as they enter the college setting.

Women's Attributions for Success and Failure

The second focus of sex differentiation in attribution centers on the different explanations of the causes for success and failure. Extensive research has been done demonstrating the importance of attributions or beliefs about why success or failure occurs in understanding achievement-oriented behavior (Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum, 1971). Their basic assumption is that people are more likely to attempt a task when they believe they have a high expectancy of doing well and they desire to maximize negative feelings about failure. Affect following a task and future expectancies are both affected by the type of attributions made.

The four most studied causal attributions are ability, effort, luck and task ease or difficulty. Other causal factors frequently

employed are stable effort (i.e., consistent pattern of diligence or laziness), other people who may help or hinder the performance, mood and fatigue or sickness, having a good or poor personality and physical appearance (Elig and Frieze, 1979). Attributional patterns for high achievement motivation have been reported by Kukla (1972). High achievement motivated men attribute their success both to high ability and effort and their failure to lack of effort. This strategy leads to increased feelings of pride (due to effort attribution to success) and security (ability attribution) as well as protecting self esteem (lack of effort attribution for failure).

The attributional patterns of women begin with initial low expectations. Success is often attributed to luck, thereby preventing a change in the initial expectancy and prohibiting feelings of pride since the attribution was external. Failure is attributed to lack of ability and is expected, leading to low self esteem. It minimizes the positive effects of success and maximizes the negative effects of failure. A cognitive solution to be consistent and justify the initial low expectations, it is an unfortunate self perpetuating cycle that promotes low performance levels. Nichols (1975) reported this self derogatory pattern in 4th grade girls. Their failures were attributed to lack of ability more frequently than success was attributed to high ability. Another study suggested that when feedback is contradictory to expectations, girls (more than boys) tended to focus on negative feedback as a basis for expectancy formulations (Crandall, Katkowsky and Crandall, 1965).

Another tendency for women is externalization of attributions of success and failure. Women have been reported to rate tasks easier

than do men in both success and failure conditions (Bar-Tal and Frieze, 1977). Again, these task-ease attributions can be a self derogatory pattern. By rating the task as easier after success or failure, the value of their success has been reduced and the negative implications of their failures have increased.

Luck attributions are also more frequently used by women than by men (Bar-Tal and Frieze, 1977). Characterized as an external attribution, this pattern implies that women take less responsibility for, and feel less pride in their successes in academic achievements as well as less shame in their failures. Achievement attributions for women may have several mediating variables. It is possible that they may feel a need to make external attributions out of modesty. Actually feeling pride in their success, they may report low ability estimates or attribute success to luck to avoid appearing boastful. Another reason for women's externalizations may be a tendency toward a more external locus of control. At least during the college years, women have less of a sense of control over their own fate (Maccoby and Jacklin, 1975).

It is interesting to note that women with high achievement motivation appear to have different attribution patterns from traditional women and tend to work very hard to succeed. In part as a reflection of social reality and in part from an internal push, women have expressed feeling they must be better at what they do professionally in order to experience any success (Epstein, 1971). If women view continuing hard work as a basis for achievement, they may perceive their success and failure as being dependent upon effort rather than upon luck or other causal factors. Even high achievement-oriented

women may lack the positive belief in their own abilities (which characterize the high achievement-oriented men) because of the generalized lower expectations for women.

Women's sex role orientation may be another important variable that influences attributions of success and failure as well as future expectations and occupational choice. Bem (1975) found that psychologically androgynous individuals can adapt to a greater variety of situations than can either masculine or feminine persons. They are hypothesized to have characteristics giving them the capacity for effective behavior in both stereotypically masculine and feminine situations. General achievement situations might be more difficult for highly feminine subjects, leading to lower self esteem, since these are areas typically labeled masculine. Competition has already been noted as a variable linked with sex role attributions. Broverman et al (1972) have indicated that a commonly held assumption is competitiveness and assertiveness are unfeminine. Achievement strivings for women may be inhibited by the strong negative impact of this stereotyped attribution. This sex role conflict may be reduced by denying responsibility for one's success in competitive situations. Supportive evidence by Horner (1968) for competition in a mixed sex setting has already been mentioned. Another study was conducted by having subjects announce their success and failures out loud in a mixed group. They found that overall women made greater use of luck than males did (Bar-Tal and Frieze, 1977). One may wonder whether the expectations of high ability honors women will be affected by the aforementioned mediating variables of externalization, sex role orientations and overall lower expectations.

Childrearing Practices and Their Effects on Achievement Motivation

Theoretical and Methodological Issues

Most research on the parental childrearing practices associated with development or achievement motivation has focused on parental demands for independence and for achievement, parental reactions to their child's success or failures and parental attitudes and values related to achievement. Smith (1969) summarizes the hypothesized optimal conditions for developing a boy's achievement: "1)relatively early demands for accomplishment, 2)effectively intense rewards for accomplishments such as physical affection and praise, 3)relatively high goals for child by parents, 4)favorable parental view of child, 5)interest and involvement in son's achievement endeavors." (p. 109). Veroff (1969) suggests that there are several developmental stages for achievement orientations. The first is the successful mastery of individual autonomous achievement motivation, i.e., personalized standards for achievement behavior developed through independent play and opportunity to explore the environment or free access to territory. The second stage is mastery of the social achievement motive where standards of excellence based on social comparison are introduced. Veroff observed that boys have more experience with social comparison/competitive events, seeking them out behaviorally in school sometimes at the expense of their grades. Final maturity in achievement motivation is reached when both autonomous and social achievement motivation are well-balanced and integrated.

Early research on parental childrearing practices linked independence training and achievement training closely together (Winderbottom,

1958); this relationship has been questioned, however. Smith (1969) differentiates achievement training (i.e., setting standards of excellence) from independence training (i.e., emphasis on self reliance and autonomy). A certain amount of independence is necessary for a sense of accomplishment but high independence might mean settling for a lower performance. Crandall et al (1965), in fact, reported that maternal affect and independence training did not predict achievement motivation but direct maternal rewards for achievement efforts did.

Independence

The assumption is made that both independence and achievement training are important, and often hard to separate. However, research on the independence-dependence dimension seems to leave girls at a disadvantage. Collard (1964) asked parents to indicate the ages they thought parents expect or permit certain behaviors (e.g., when child can play away from home or use sharp scissors without supervision). Mothers of girls responded with later ages than boys. In addition, mothers of girls were found to be more controlling, thereby limiting independence training. They made more demands for maturity in girls (Baumrind and Black, 1961). Several investigators report that while dependency in boys is discouraged by parents, teachers and peers, it is more acceptable in girls (Kagan and Moss, 1962; Sears, Rau and Alpert, 1965). Pressure is exerted on girls to inhibit aggressive behaviors but not dependent behavior, in accordance with sex role standards. Rubovits (1975) found that even within the same families, girls received different social learning experiences. Boys were encouraged to be competent, initiating, achieving and independent and girls were often encouraged to be dependent, conforming, cooperative

and unconcerned about grades.

Hoffman (1972) proposes that girls are not only less efficiently trained in independence but have a harder time establishing a separate self since they are more "like" their mom than boys are. Veroff (1969) supports this view, sensing that the girls' similarity to mother may lead mothers to be more reluctant to encourage or unaware of inhibiting their moves toward autonomy.

Achievement Orientation

Research on achievement training, or direct achievement pressure from mother for a competent performance, has in general revealed few significant sex differentiations. For younger children, there were no reported sex differences in intellectual performance or parental standards (Allsman et al, 1972), in household help (Baumrind, 1971), in amounts of direct parental help or number of task-oriented suggestions, criticisms or supportive statements when doing puzzles (Hilton, 1967). Although there were no sex differences in mother's pressure for success on memory tasks or expectations for child's performance in a study by Rothbart (1971), it was observed that mothers of girls exhibited more anxious intrusiveness across all tasks than mothers of boys. In another study by Hatfield, Ferguson and Alpert (1967), preschool boys did receive more achievement pressure from mothers than girls did, although there were no differences in maternal restrictions, reward or praise of independence or dependence, or in warmth toward the child. On the other hand, in a home observation study, Minton et al (1971) found that girls more often than boys were reprimanded for failing to perform a task while boys were more often reprimanded for aggression toward mother. In terms of direct parental

achievement pressure, the research suggests a mixed picture.

Parental Expectations and Responses to Success and Failure

While childrearing practices in independence and achievement training are equivocal, future expectations for young children were obviously different for boys and girls, with higher expectations for boys. In interviews, fathers of boys younger and older than 17 years reported significantly greater expectations for their sons to go to college (Tasch, 1952). Supportive evidence from questionnaire data from mothers and fathers of 16 year old boys can be found in Hilton and Berglund's (1971) study.

The higher parental expectation for boys apparently begins early in childhood. Sears et al (1957) found that maternal expectation for their five year old boys to go to college was significantly higher than for five year old girls. The importance of high expectations for actual achievement performance has already been stressed. Therefore, lower parental expectations for girls may be a significant factor in lower performance levels of academic achievement. In addition, it has been noted that test anxiety in children is fostered by: 1)relatively late demands for independence, 2)criticism and punishment for failure, and 3)unfavorable view of child's absolute abilities (Sarason et al, 1960). Girls have been demonstrated to have higher test anxiety than boys. Practices more characteristic of girls' parents, as revealed by the research reviewed above, include later demands for independence, intrusiveness or criticism and, in general, low expectations for girls' performance. These patterns may produce increased test anxiety, another difficult obstacle to be mastered in a girl's path toward achievement.

The type of parental response, such as affection and/or praise or criticism, to success and failure in achievement situations has also been associated with the development of the child's achievement motivation. Maternal affection for boys was more frequently observed in response to independent accomplishments for high achievement motivated boys than for low achievement motivated boys (Winterbottom, 1958). It should be noted that these results were not replicated in a study by Bartlett and Smith (1966). In contrast, mothers of academically competent girls were found to be less affectionate and less nurturant than mothers of less proficient girls (Crandall et al, 1960). It seems to be a generalized assumption that high achieving females had hostile mothers while high achieving males had warm ones (Bardwick, 1971; Maccoby, 1966). The term "maternal hostility" may, in fact, more accurately be labeled early pressure for independence and autonomy than lack of "mother love" (Hoffman, 1972).

Maccoby and Jacklin (1975) found as many studies with significant results for girls receiving more parental praise for accomplishments as for boys. However, several studies indicate that boys receive significantly more feedback from teachers. A most striking finding was reported by Serbin et al (1973). Although girls were more typically within arm range distance from their teachers, the teachers were more likely to respond to the boys when they sought attention than to the girls whether the boys were close or distant. Girls did receive attention because of their close proximity but were not likely to if they were far away from the teacher. Again, boys received more extended conversations or directions and demonstrations as well as higher responses to appropriate participation in a classroom activity. Although there

was no difference in the children's frequency of following the teacher's behaviors, the teachers were not aware of responding differentially to boys and girls or of giving different amounts of positive or instructional attention to either sex. An earlier study by Meyer and Thompson (1956) supported these findings. Although teachers perceived boys as being disapproved of more, they did not perceive themselves as giving more approval to the boys as well. In view of these observations, it remains questionable whether studies which use data from teacher or parent report to conclude no sex differentiation in amounts or types of praise, reward and criticism can be considered accurate.

Therefore, early parental childrearing influences such as parental demands for independence and/or achievement, parental warmth or hostility in response to child's success and failures, parental expectations and educational reinforcements from school shape and influence a girl's development of achievement and career orientation in significantly different ways from boys. We may speculate on what effects these differences have on the types of attributions that girls typically link to their own performances. Familial influences on honors women in fostering independence and achievement motivation might be different from other students. It seems there would have to be more encouragement and pressure for achievement and/or independence in order to compensate for the other social influences impinging on the young girl's achievement development.

Achievement and Career Motivation: Salient Issues for Women

Theory and Research Methodology

Development of theories of career motivation that incorporate the multilevel variables that influence women's career choices has had a history as long and as involved as achievement theory. In general, there are several different approaches to vocational and career choices. Super (1951, 1953), Roe (1956) and Holland (1959) regard vocational behavior as a developmental process whereby a person makes decisions that are congruent with his or her self concept or personal orientation. Another view is a more psychosocial approach which emphasizes that the person's social environment exerts pressure upon vocational development (Tiedman, O'Hara and Matthews, 1958). Decision making is seen as an underlying process for vocational behavior. With respect to this process, Hilton (1962) suggests that the primary motive in decision making is to maintain a low level of cognitive dissonance. Whereas Strong (1943) makes interests the primary factors in decision making, Rosenberg (1957) reports that values are the primary influences. Although Holland (1962) agrees with the view that values influence career choice, he also states that a person searches for work that is congruent with his personal orientation. Others, however, perceive the expectation of future outcomes as a strong influence governing the decision making process (Blau, Gastad, Jessor, Parnes and Wilcock, 1956). Integrating these aspects, it can be hypothesized that career choices are modified by personal orientation and self concept, social environment, values and expectations of future outcome. There is an underlying process of decision making that attempts to avoid cognitive dissonance.

As with achievement motivation theory, the career patterns of women have challenged traditional male-based expectations for normal career development. Roe (1964) stated that "studies of occupational histories for men and women may require different concepts." Osipow (1968) recognized the need to account for special problems facing women that do not face men and that "most of the masculine based tests and theories fail to really provide a useful vehicle for the understanding of career development of women" (Osipow, 1968, p. 247). Psathas (1968) gives primacy to the relationship between sex roles and occupational role as the major theoretical obstacle to overcome. Women's marital plans (both desired age and desired social status of marital partner), fertility aspirations (at what age and how many children are desirable), family finances (including presence of brothers to whom deference may be shown in providing support for college education), parental SES (both mother's and father's education and occupation), and the general desire of a woman for a working career vis-a-vis a more non-working (i.e., housewife, non-labor market) career are all important factors shaping a woman's career development (1969).

Thus, the home-career dichotomy is recognized as the most central conflict for women. In the analysis of longitudinal Talent project data (high school graduation in 1960), Card, Steeles and Abeles (1980) confirmed that variables measuring onset, duration and extent of family related commitments were more strongly related to lower realization of potential for females than males, especially in high ability women. Kriger (1972) went as far as to state that a choice of a special occupation is man's foremost career decision but only secondary to women. According to her, women must first decide between career and

homemaking. Whether a woman's choice is influenced by her value orientation, her sex role orientation and self concept or perceived social options, it is clear that research on women's career development has similarly reflected this commonly held assumption.

Personality Variables or Sex Role Orientation

Many researchers have classified women into career or non-career-oriented categories, based on a forced-choice option to rank home or career more important (Elton and Rose, 1967; Rand, 1968; Harmon, 1967). These studies were interested in delineating interests, personality variables and characteristics, personal behaviors, abilities and attitudes that separate career-oriented and non-career-oriented women. It appears that a dichotomous approach has reinforced the common view that home-oriented and career-oriented women are entirely different personality "types" or operate on a more masculine - more feminine continuum, completely ignoring the many women who are both home and career-oriented. Rand (1968) proposed that sex role rather than personality would be more accurate to subsume the masculine attributes of career women (greater achievement, dominance, endurance, independence) or typically feminine attributes of homemaking women (nurturance, succurance, empathy, understanding and sociability). Her results indicate that career-oriented women scored higher not only on masculine characteristics but on many feminine characteristics as well. Rand concludes that career-oriented freshmen women deviate from the traditional feminine role and have redefined their role to include behaviors appropriate to both sexes. The homemaking-oriented freshmen women, by contrast, appear to adhere closely to the traditional feminine role. Considering Bem's (1975) ideas on androgyny as an integration of masculine and

feminine characteristics, it can easily be seen that research on women's career development should incorporate and investigate the effects of androgyny on career choice (Almquist, 1974; Alper, 1973; Farmer and Fyans, 1980; Gackebach, Heretick and Alexander, 1979).

In a trichotomous approach to research on women's careers, first proposed by Rossi (1965), the homemaker/non-career oriented group was retained, but a division was established within the career group into pioneers/non-traditionals/role innovators and traditionals (Almquist, 1974; Crawford, 1978; Nagely, 1971; Tangri, 1972; Wolkon, 1972). The purpose was to delineate degrees of career commitment. The method was to distinguish between career women with high commitment, as evidenced by their male dominated occupational choice, from those career women with less career commitment as reflected by their choice of predominately female-dominated fields.

From questionnaire data collected five years after high school graduation, Wolkon (1972) indeed found significant differences between the pioneer and traditional career women as well as between the pioneer and homemaker women, especially in attitudes toward work and independence. Crawford (1978) also found attitudinal differences toward sex roles. College women choosing traditionally female occupations were more conservative with respect to marital relationships and obligations while college women choosing male-dominated professions were more liberal with regard to vocational, educational, intellectual and sexual behavior. Although Crawford's study found no differences on self concept in the groups, background variables that were higher for pioneers than traditionals were mother's educational levels and employment outside of the home, and the presence of adjacent male siblings.

Aspirations

The trichotomous approach to women's research still perpetuates the forced choice between two important women's values: affiliation and achievement (home/career) by not allowing an option for a combined solution. However, it does begin to illuminate the importance of sex role perceptions and feminine orientation as a modifier of women's career choices. Cultural sex-typed labels for occupations have limited some women's approach and avoidance of particular fields (Oppenheimer, 1968). For example, freshmen women had varied aspirations but by senior year they had changed and were most concentrated on female-dominated professions (health fields, teaching, office work, arts and housewife) (Astin and Mylint, 1971). Astin attributes the switch toward increased homogeneity as part of a growing awareness of skills and attitudes necessary and length of time and commitment required to complete training in and pursue a certain occupation successfully. However, again, another influential reason may be the perception of what is appropriate behavior for women (Astin, 1968; Davis, 1965), i.e., which are culturally labeled feminine occupations. In 12th grade, teaching remains a popular choice and housewife quadruples, while fewer and fewer students choose the natural sciences or professions (Horner, 1968; Astin and Mylint, 1971). Those who do choose professions or business tend also to have changed to more "appropriate" female occupations five years after high school graduation (Astin and Mylint, 1971).

Home/Career Conflict

In addition to the sex-role labeling of occupations, female students themselves often view the student/worker role as incompatible with the spouse/parent role. Many women have been and still are socialized

to believe that they cannot combine home and career and do them both well (Bem and Bem, 1973). Cognitive dissonance and value laden conflicts are the results for some women who wish to combine home and career but believe they cannot without hurting; a) their important relationship with their husband, or b) the psychological health of their children (Farmer and Fyans, 1980). In a study by Matthews and Tiedman (1964), young women expressed feeling guilty if they worked and depressed or frustrated if they stayed home. For those who do try to combine career and home aspirations, Astin (1967) found that some women are depressed by having to both work and maintain a home. In a later study, Astin (1976) found that reentry women (i.e., returning to higher education after an absence) experience conflict and guilt about "leaving their homes and families to undertake a time consuming venture so personally fulfilling", obviously exposing a conflict with a value system which prohibits personal satisfaction of achievement goals.

The concept of cognitive congruence seems an accurate explanation for the finding that traditional women appear to have higher self esteem in their children's early childhood, while personal achievement-oriented women have lower self esteem during these years as they try to establish career patterns (Rossi, 1965). However, Birnbaum (1975) pointed out that working professional women, whether single or married, had higher self regard by the middle adult years than equally gifted non-employed women. Therefore, primary fulfillment for gifted women is not only attained in the family realm. Reports that high potential women are particularly frustrated and hostile after lowering their aspirations and not realizing their potential seem to confirm the negative price, in the life-long perspective, of lowered or absent career goals for gifted women.

Honors college women would currently be predicted to have less concern about the home/career conflict than has been found in earlier studies, as a result of changing social norms about successful combinations of marriage/family and career. This might be especially true in the freshmen year when the conflict is still relatively dormant. Of course, there is the question of whether social changes in sex roles and familial value systems have actually affected women's aspirations. In the past, Empey (1958) found that 80% of high school and undergraduate women preferred marriage to career on questionnaires, supported by similar results from Matthews and Tiedman's (1964) study. Attitudes toward college were significantly different between male and female students (Constantinople, 1967). High school female students were most interested in developing interpersonal skills, finding a spouse and preparing for a career right out of high school while male students were motivated to seek academic distinction and prepare for a degree beyond a B.A. or a B.S. In contrast, a more recent study by Rand and Miller (1972), interviewing a cross-section of women, seemed to show that the new cultural imperative is "marriage and career". In high school, 95% of the girls in the junior class wanted to go to college (although actual plans dropped to 60% in 11th grade), and 97% wanted to marry. Preparation for an occupation is a reason most frequently stated, a goal which increases as the girls progress from junior high school to college. Similar results were found in Astin and Mylrint's (1971) study, where 90% of high school students chose careers and only 10% expressed interest in being a housewife in a forced choice option. This is a considerable change from studies where women preferred to settle the conflict (and usually had little support for other options)

by choosing marriage over a career. However, Cross (1971) reports no increased career orientation in college women in spite of women's changing sex roles. Differences in the methodology, in the age range of the subjects or special characteristics of the sample populations may explain some of these contradictory results. As longitudinal data indicate, it is certain that reduction in expressions of the marriage/home/career conflict and possible higher expectations are only the first steps toward maintaining and realizing the achievement potential of high career aspirations. Rooney's (1981) study confirmed the motivating force of high aspirations and attributional patterns of success and failure but also recognized the influence of perceived parental and social support for achievement in separating students from homemakers and workers three years after high school.

Parent Background Variables

Parental socioeconomic level is also known to influence dramatically an individual's aspirations toward a career and the ability to acquire a job of high prestige and income (Duncan et al, 1972). Astin (1968) predicted that career choices for high school girls from higher socioeconomic families were more likely to be in the sciences (natural and social), the professions and academic careers, with an even better likelihood if they perceived their fathers encouraging them. Fathers of girls from upper-middle and middle class homes who had a high fear of success were more likely to be successful businessmen or professionals placing a high premium on achievement (Tangri, 1972). Parental educational level significantly influences a student's aspirations. A greater portion of fathers and mothers of high potential women had college degrees, in comparison to parents of high ability men (Card, Steeles and Abeles, 1980).

Mother's educational level and employment status outside of the home have been repeatedly cited as important role-modeling influences for women's career development (Almquist, 1974; Almquist and Angrist, 1970; Astin and Myling, 1971; Crawford, 1968; Tangri, 1972). Mother's employment may increase her daughter's career orientation, decrease her sex typing of behavior and increase the likelihood of choosing a male-dominated occupation (Tangri, 1972). The main contributing factors identified as fostering achievement have been the direct learning from other's values and role modeling (Tangri, 1972; Almquist, 1974), greater intelligence as a result of more freedom to wander and explore (Maccoby, 1966), greater autonomy of thought and values encouraged by parents (Douvan, 1963) and greater parental emphasis on achievement motivation.

Types of parental identification have also been argued to affect a woman's career motivation. Hoffman (1972) reports that the more identification with mother and the more feminine a woman is, the less likely she is to be a higher achiever and excel in math, analytic skills, creativity and game skills. Mother's negative influence is frequently referred to as differentiating non-achievers from achievers. Mothers of female underachievers, more than those of female achievers, were perceived by their daughters as high on the control scale of the Parental Attitude Research Instrument (PARI). Mothers of underachievers were seen as more dependent, more dominant and more in need of the respect and dependence of the child (Shaw and Dutton, 1962). In an attempt to sort out the mother's influence on sex role choice, Kriger (1972) compared the perceptions of parental childrearing in 28-48 year old married women who had at least one child of their own. Homemaker

daughters perceived their mothers as higher in control than did women in female-dominated and male-dominated careers, but there were no differences among women who choose careers, whether male or female-dominated. However, research on mother-identification or perceived mother influences is not interpretable unless mothers are categorized as employed or non-employed.

Tangri (1972) examined parental influences on role innovators, i.e., women who choose male-dominated professions. Mother's role modeling, as demonstrated by educational level, present employment status and own choice of masculine-dominated employment, influenced daughter's choice. Daughters with more educated working mothers who were achievement oriented and expressed masculine-dominated interests took their mothers as role models. When the mothers had chosen a female-dominated career, however, conflict was evident in daughter's higher fear of success stories and mother's negative influence on daughter's choice of a role innovative occupation. With more educated but non-working mothers, daughters were more likely to have traditional values and stereotypical notions of sex roles. It is hypothesized that these mothers' achievement motivation was high, but displaced onto husband or male children, due to a value system which penalized personal satisfaction of achievement drives for women. Hence, they similarly influenced their daughters' value system and sex role perceptions and inadvertently encouraged high fear of success. Daughters of less educated working mothers had less role stereotyping but not as much modeling of division of labor at home. The early autonomy for these daughters encourages achievement motivation, but mother's work tends to be less prestigious and therefore is less attractive as a role model. This engenders mobility aspirations in addition to

achievement motivation, which closely resembles a male achievement pattern. Working mothers are especially unambivalent toward daughters' achievement and daughters are less intimidated by delayed gratification. Daughters of less educated non-working mothers had conventional values and attitudes toward autonomy. Tangri (1972) noted that daughters who chose role innovative careers felt closer to and agreed with mothers on values, but felt their mothers did not understand their occupational choices. Daughters did not feel that they were closely identified or closer with father, but they indicated that they had father's support and perceived similarity between them in their innovative orientation toward occupation choice. Tangri concludes that these women have substantial cognitive distance from both parents.

The identification with father as a salient factor has been directly studied by others. For example, it has been pointed out by Plank and Plank (1954) that outstanding mathematicians are more attached to and identified more strongly with their fathers than with their mothers. Bieri (1960) found females high on analytic ability also tend to identify with fathers. Higher masculinity scores have been related positively to various achievement measures (Oetzel, 1961; Kagan and Kogan, 1970), as are special masculine traits (Sutton-Smith, Crandall and Roberts, 1964; Kagan and Moss, 1962). The inherent sex typing of the achievement measures used to determine masculine versus feminine traits and characteristics may heavily bias these results. In addition, sex typing poses a general problem for both sexes in achievement-oriented behavior since overly masculine males and overly feminine females have lower scores on various achievement-related measures (Maccoby, 1966; Kagan and Kogan, 1970).

Thus, relating measured masculine traits and mathematical interests per se as evidence of father-identification is a questionable, although understandable, proposition. When women who directly reported father-identification or mother identification on questionnaires were compared, however, significant differences were observed. It was shown that father-identified women anticipated and perceived more male peer/colleague support on the job while mother-identified women seemed to have higher self satisfaction and belief in their abilities (Karmon, 1972). Parental identification variables may be helpful determinants in understanding different intrapersonal aspects of the career development process for women.

Research Focus: Determining Achievement Patterns for Women

The review of literature on achievement motivation and career development has illustrated numerous variables that shape and determine differential achievement and career preparation for men and women. Socialization of sex roles, fear of success, lower generalized performance expectations and tendencies toward derogatory causal attributions for successes and failures seem to exert considerable negative influence on women's achievement behavior. Differential childrearing practices, parental role modeling and support, and background variables such as socioeconomic and educational levels and mother's employment have been shown significantly to affect women's development of achievement motivation, particularly in high ability honors women in college populations. Patterns of women's achievement have been discussed in the light of these influences. It is recognized that performance in courses as measured by grades is not an outstanding predictor of career success. However, it is considered an indication of academic achievement motivation.

Hence, sex comparisons of honors students may provide useful information on possible variations in academic achievement patterns of high ability male and female college students. Variables identified as influencing achievement performance (aptitude, personal achievement potential, perceived family orientation toward achievement, parental background factors and achievement expectations and aspirations) will be analyzed for sex differentiation patterns. Given measures of these variables, the main focus of this study is on assessing the particular factors most influential for the student's achievement performance, as measured by the academic criterion of grade point average. Within the selected Honors College population, there were two distinct living situations that might also affect the student's performance on the achievement criterion. Therefore, analyses were also carried out to explore the possible associations between achievement variables and the type of living situation chosen, and possible interactions between living situation, sexual differentiation, and achievement variables in effects on the criterion of GPA.

METHOD

Subjects

During Fall 1980, the Honors College at Michigan State University began collecting data for a longitudinal comparative study of Honors College students who do and do not participate in an honors housing option. The present study is not part of the Honors College research design. It was made possible by access to data the Honors College collected, for other purposes, on the first entering freshman class to be offered the new honors housing option; but it was conceived, designed, analyzed and interpreted independently of the Honors College project. For example, the Honors College researchers are centrally interested in variations by academic major, which are not analyzed in the present study.

The Fall 1980 study population consisted of the 344 entering freshmen who had been invited to join the Honors College. It was divided into three research groups: Group A (N=87) were those who had accepted both Honors College membership and the new residential honors housing option; Group B (N=108) had accepted Honors College membership but chose other residential arrangements, some of them tied to majors; and Group C (N=78) had elected not to join the Honors College at all.

To delineate what these three groups have in common requires some indication of Honors College objectives and selection criteria. The 1956 founding legislation expressed its purposes as follows:

"It is assumed that the Honors College graduate will have mastered on graduation more subject matter both within and without his field of specialization than will other graduates. He will be more alive to intellectual concerns, more skilled in analysis, more comprehensive in judgment and more cognizant of the responsibility of talent."

In pursuit of these objectives all members, regardless of major, are to be "constantly challenged by the most advanced work for which each is ready." Accordingly, the staff is committed to providing for academically gifted students enriched and accelerated academic opportunities, substantial flexibility and variety in curricular choice, continuing guidance and support, and help with the development of appropriate programs of study.

Membership is highly selective. The common characteristics of the three study groups are given by the criteria for invitation. Students admitted to MSU are invited to become Honors College members if their test scores rank in the 95th percentile nationally on both SAT or ACT and the National Merit test, and if their high school class rank places them in the 95th percentile locally. Borderline cases that fall below the cut scores on one or two of these measures are researched individually by Honors College staff and are invited selectively if there are strong indications of an exceptionally solid college preparatory program in high school. A copy of the invitation letter to the Honors College and the explanation of the honors dorm option can be found in Appendix A.

Group A supplied 84 of the 87 students in the first cohort to move onto the first honors floor in one of the regular residence halls. The remaining 3 were older Honors College students who had been instrumental in the establishment of the new housing option by their persistent urging of a more supportively study-oriented atmosphere for honors students in the residence halls.

The initial assessment in September 1980 employed three instruments: a specially designed Honors College First-Time Freshman

Questionnaire (HCFF), the Family Environment Scale (FES) by Moos et al, 1974, and the California Psychological Inventory (CPI) by Gough, 1957. The first two were administered at group sessions; the CPI was administered in a standard procedure at the Testing Office of the Counseling Center. Descriptions of the instruments follow in the Methods section. Research participants were contacted through a letter in Appendix B which described the honors research project and requested voluntary participation. A total of 309 students from the 344 combined population of Group A, B and C were possible to locate and invite to the several group testings that were conducted for the purpose of completing the HCFF and the FES. In addition, students were strongly encouraged to sign up for the individual administration of the CPI. Methods of contacting students who did not attend the group meetings varied slightly between groups. Residential assistants distributed HCFF questionnaires and the FES to those on the honors-floor while others were contacted by telephone by an undergraduate research assistant who arranged individual times to complete the HCFF questionnaire and the FES. Types of contact and non-response rates to the letters and telephone contacts are contained in Appendix C.

The present study includes only data on the 106 freshmen Honors College students who completed all three instruments. In Group A there were 17 male and 29 female subjects and in Group B there were 28 male and 32 female subjects with three completed instruments. Appendix D shows the frequencies of students in each group that took each of the tests. There were 17 male and 29 female freshmen Honors College subjects from the honors-floor (Group A) and 28 male and 32 female freshmen Honors College subjects from other dorms (Group B) who had responded on all

three instruments. Completed test frequency rates for students in each group are presented in Appendix D.

Instruments

In this section, the three instruments used in the Honors College initial assessment will be described, and the measures of achievement variables derived from them made explicit. The variables of achievement aptitude, achievement potential, family achievement orientation, past parental achievement and achievement motivation were chosen for study on the basis of previous research outlined in the literature review.

1) Honors College Questionnaire

Constructed by members of the Honors College research team (Norell and Smith), the questionnaire consists of mostly structured items but contains a few open-ended and semi-projective items. There are a total of 205 items concerning topics such as family structure and demographic characteristics, type of original home community, past educational experiences, attitudes toward college experience, career goals, dating and peer relationships, political values, self perceptions and reasons for Honors College affiliation and/or participation in the dorm floor. Items of particular interest in the present study on achievement will be specified under appropriate achievement variables. Most salient are the questions on career goals, personal expectations toward grades, philosophy toward the college experience and parent's educational and occupational level. The questionnaire is available by request from the Honors College at Michigan State University.

2) The California Psychological Inventory

Developed by Gough (1957), the California Psychological Inventory

(CPI) is a personality assessment instrument in a booklet form that has been used extensively as a measure of personal characteristics and personality variables. It consists of 480 self-statements and requires a true-false answer format. It is applicable to subjects who are thirteen years and older.

In his manual for the California Psychological Inventory, Gough (1957) has divided the standard labeled scores into four interpretive, rather than psychometric, categories:

1) Measures of Poise, Ascendency, Self-Assurance and Interpersonal Adequacy (Do=Dominance; Cs=Capacity; Sa=Self acceptance; Wb=Sense of Well-being);

2) Measures of Socialization, Responsibility, Intrapersonal Values and Character (Re=Responsibility; So=Socialization; Sc=Self control; To=Tolerance; Gi=Good impression; Cm=Communality);

3) Measures of Achievement Potential and Intellectual Efficiency (Ac=Achievement via Conformance; Ai=Achievement via Independence; Ie=Intellectual Efficiency);

4) Measures of Intellectual and Interest Modes (Py=Psychological-mindedness; Fx=Flexibility; Fe=Femininity).

Each scale was constructed separately and has reliability and validity data available in the original Manual. There are numerous references to studies on personality characteristics of varied and specific populations such as professionals in medicine, students, and different occupational groups (Buros, 1970; 1975; Cronbach and Thorndike, 1965; Kelly, 1959). The CPI has often been used to predict the academic success for high school and college populations. Gough (1964) tested 1,371 high school students and found that certain CPI scales, in

combination with I.Q. scores could increase the validity of the I.Q. in predicting achievement. The relevant scales were RE(Responsibility), SO(Socialization), GI(Good Impression), AC(Achievement via Conformance), AI(Achievement via Independence), and IE(Intellectual Efficiency).

The best predictor for success in both male and female college students was AI(Achievement via Independence) (Gough, 1964; Evans, 1969). Although studies vary on the scales that influence achievement, the cluster of AI, AC, and IE as achievement variables is most often present, along with combinations of other variables (Demos and Verjola, 1966; Domino, 1968; Evans, 1969; Hickson and Driskill, 1970; Hill, 1966; Swisdak, 1964). The CPI scales have been used successfully to predict GPA differences among honors and non-honors (Demos and Verjola, 1966; Hickson and Driskill, 1970) and between achieving and underachieving high ability students (Norfleet, 1968; Mason, Adams and Blood, 1965).

3) Family Environment Scale

The Family Environment Scale (FES) was developed by Moos, Insel and Humphrey (1974) in order to assess the social climates of families. The major focus in the FES is on the measurement and description of the interpersonal relationships among family members, on the directions of personal growth which are emphasized in the family and on the basic organizational structure of the family. It is a relatively new instrument, a copy of which has been included in Appendix E. The initial Form A of the FES was a 200 item test, administered to over 1,000 individuals in a sample of 285 families. These data were used to construct a revised-90 item ten subscale Form R (real) of the FES with definite psychometric test construction criteria.

Described fully in a preliminary manual prepared by Moos et al,

the ten subscales on the Form R are as follows: Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Moral-Religious Emphasis, Organization and Control. Each subscale is described in the Preliminary Manual. The FES subscales are scored by adding up the number of items on the subscale which have been answered in the scorable direction. Although there are no standard scores for individuals, Moos (1974) maintains that individual scores can be converted into the family standard scores because the standard deviations are about the same for both individuals and families. These standard scores can also be found in the Preliminary Manual. Subscale scores are used clinically by constructing a profile which shows graphically the high and low family characteristics and social environment.

Test-retest reliabilities of individual scores on the ten subscales were based on 47 family members in nine families who took the FES twice eight weeks apart. These test-retest reliabilities were all acceptable, varying from a low of .68 for Independence to a high of .86 for Cohesion. Calculated using the Kuder-Richardson Formula 20, the internal consistencies for Form A subscales were satisfactory. These data on reliability can be found in the manual.

The average subscale intercorrelation developed on a sample of 814 family members in 240 families was .20, indicating that the subscales measure fairly distinct aspects of family social environments. These intercorrelations account for less than 20 percent of the subscale variance.

In the present study, two dimensions will be the primary focus: 1) Achievement Orientation, and 2) Independence. According to Moos (1974), achievement orientation is the degree to which different types of activities, mostly related to school and work, are cast into an

achievement-oriented or competitive framework. The statements "We feel it is important to be the best at whatever you do" and "Getting ahead in life is very important for our family" are common examples of items hypothesized to measure achievement orientation in the family environment. Independence is thought to be the degree to which family members are encouraged to be assertive and self sufficient. In addition, they are expected to make their own decisions and to think things out for themselves. Examples of items on the independence dimension are "We come and go as we want in our family" and "Family members almost always rely on themselves when a problem comes up" (Moos, 1974).

Using a cluster analysis technique, Moos and Moos (1976) developed an empirically based typology of family environments and found six distinct family types: 1)Expression-oriented; 2)Structure-oriented; 3)Independence-oriented; 4)Achievement-oriented; 5)Moral-Religious-oriented, and 6)Conflict-oriented. Of particular interest is the achievement-oriented cluster which emphasized achievement and hard work within a framework of independence (high independence score) or conformity (low independence score). Families emphasizing achievement via conformity are not concerned about political, intellectual and cultural activities and avoid active participation in recreational and sporting activities. Organization and control are valued more than average. However, in families where achievement via independence is emphasized, activities outside of the family are encouraged. Control within these families is substantially above average and well understood because of the hierarchical organization of the family.

4) Achievement Variables

Achievement Aptitude is determined by student's SAT and high school grade point average (HS GPA).

Achievement Potential refers to personality characteristics from the CPI that have been found to correlate with academic success (Gough, 1957); Ac=Achievement via conformity; Ai=Achievement via independence; Ie=Intellectual efficiency. Additional subscales (Soc=Socialization; Resp=Responsibility; and Fem=Femininity) were also included.

Family Achievement Orientation was measured by the Achievement Orientation and Independence scale of the Moos' FES.

Parental Achievement is indicated by the occupational category and the level of formal education of both mother and father. Four specific variables were included: 1)father's occupation; 2)mother's occupation; 3)father's education and 4)mother's education (whether current or past).

Parent's occupational data were taken from an open item for father and semi-open item for mother on the Honors College Questionnaire requesting the student to fill in parents' type of work or occupation. Parental occupations were examined and classified on prestige as measured by the North-Hatt NORC prestige scale (Reiss, 1961). The original scale was compiled in a 1947 study by the National Opinion Research Center on occupational prestige. Since very few changes in occupational prestige ratings were observed in a 1963 replication study by Hodge, Siegel and Rossi (1964), it was considered to be representative of current occupational prestige ratings. Socioeconomic status of parental occupations were rated according to an index compiled by Otis Dudley Duncan (as outlined by Reiss, 1961) for the NORC study of occupational prestige.

Educational data was obtained from the Honors College Questionnaire

on two separate structured items which ask the amount of formal education completed for father and for mother. The answers were coded as follows: 1)some high school or less; 2)high school graduation; 3)some college; 4)college degree; 5)post graduate degree.

Achievement Motivation consisted of an additive score from four items on the Honors College Questionnaire concerning each student's personal expectations toward achievement (class rank and grades), career aspirations and career orientation toward the college experience. The numbers assigned to the individual's answers to the four items were ordinal and indicated ascribed low to high motivation. A total achievement motivation score was compiled by adding the results of the ordinal answers.

Total achievement motivation scores had a possible range between 4 and 15. A student with a low score was presumed to have low achievement motivation while a student with a high score was considered to have high achievement motivation as measured by the following four items.

1)Rank expectation was determined by the Honors College questionnaire multiple choice statement: "In college I hope to rank academically a)in the top 10%, b)in the top 25%, c)in the top 50%." A high motivation value of 3 was given to students who answered they hoped to rank in the top 10% of their class while students who indicated expectations of ranking in the top 25% to 50% of their class were given a lower value of 2 and 1 respectively.

2)Grade expectation was derived from the student's

response to the Honors College multiple choice item which stated: "Getting good grades is a)very important to me, b)moderately important to me, c)not important to me." A grade expectation value of 3 was ascribed to a student who indicated that grades were very important while lower values (2=moderately important or 1=not important to me) presumed a lower grade expectation.

3)Career orientation toward the college experience was determined by the multiple choice item whereby the student discriminated among four possible "philosophies", the one which was most typical of his/her approach to college. A value representing low (1) to high (4) career emphasis was assigned to the following structured choice:

(1)Career aspirations are secondary to personal search for identity.

(2)Career preparation matters but non-academic experiences are more important.

(3)Intellectual and scholarly pursuits are important in addition to career relevance.

(4)Career orientation is the central purpose for going to college.

4)Career decidedness was derived from an open-ended item that requested the student to write about his/her career choice history with an invitation to include childhood career aspirations as well as present freshmen career aspirations. Based on the student's response, undergraduate raters ascribed career decidedness scores

with ordinal values of 1 to 5 according to the following coding system which can be found in Appendix F. The raters were trained separately to use the career decidedness scale. Reliability was established by averaging the three independent career decidedness scores.

Achievement Criterion was the total grade point average of the spring term grades at the end of freshmen year.

HYPOTHESES

The first question was whether or not sex differences existed among Honors College students on the achievement variables of aptitude, potential, family orientation, parental achievement and motivation.

The following hypotheses were tested:

Hypothesis 1: There are no significant sex differences on the achievement aptitude variables (SAT scores and high school GPA).

Hypothesis 2: There are significant sex differences on achievement potential as measured by the CPI. Males were predicted to have higher achievement subscales than females.

Hypothesis 3: There are significant sex differences on the family achievement orientation variable as measured by the FES. Female students were hypothesized to be higher than male students.

Hypothesis 4: There are no significant sex differences on parental achievement as measured by parents educational and occupational backgrounds.

Hypothesis 5: There are significant sex differences in achievement motivation as indicated on the Honors College questionnaire. Male students were predicted to have higher aspirations and more decided career goals.

Hypothesis 6: There are no significant sex differences in the achievement criterion of spring GPA.

The study's second concern was focused on the effects and interactions of the residential options and sex differences with the achievement criterion (spring GPA).

Hypothesis 7: There are no achievement variables that significantly affect students' choice of living situation.

Hypothesis 8: There are no significant differences in achievement criterion (spring GPA) when residential dorm options are considered (i.e., honors-floor option compared with other dorm settings).

Hypothesis 9: There are no interactions between the effects of sex and type of residential dorm on the achievement criterion.

The third major emphasis in this study was to determine the achievement variables having the most influence on the achievement criterion (spring GPA).

Hypothesis 10: There are significant sex differences in the variables that most influence the achievement criterion (spring GPA). Female students would be most influenced by family achievement orientation and their own achievement motivation for high performance on GPA, while males were less apt to have specific achievement variables that affected their academic performance.

RESULTS

In this section, results are reported for each hypothesis, (using the $p > .05$ level of significance) followed by a summary of the results. There will also be a presentation of trends, nonpredicted findings and supplementary analyses.

In order to test the hypotheses, two types of analyses were performed: analysis of variance and multiple regression. First, the main effects of sex and living group (i.e., honors-floor dorm or other residential dorm) were tested by analysis of variance on each achievement variable. Hypotheses 1 through 6 were related to sex effects while Hypotheses 7 and 8 were concerned with the influence of the residential option on the achievement variables. Hypothesis 9 dealt with interaction of sex and living situation on the achievement variables. Means for the various groups on each dependent variable can be found in Tables 1, 2 and 3.

Several multiple regression analyses were carried out to test the final hypothesis, which referred to possible sex differences in the achievement variables having most influence on the achievement criterion (spring GPA). Results of the multiple regression analysis are located in Tables 4 through 8. In the initial multiple regression analysis (Table 4), all achievement variables were entered in a stepwise manner into the equation. Sex was included as a separate factor and in multiplicative combination with other predictors. However, it was not found to be one of the significant variables. In an effort to ferret out the factors most likely affecting the GPA performance, a second multiple regression (Table 5) was performed on the previously determined predictors, yielding six factors that were significant

Table 1
Means on Achievement Aptitude and Potential Variables
for each Sex, Living Group and Sexes within Living Groups

ACHIEVEMENT APTITUDE	SEX		LIVING GROUP		INTERACTION			
	Male	Female	H-Dorm	O-Dorm	H-Dorm Males	H-Dorm Females	O-Dorm Males	O-Dorm Females
HS GPA	3.76	3.75	3.72	3.79	3.80	3.68	3.73	3.89
SAT Verbal	653	673	679	644 **	676	680	636	655
SAT Math	709	662	673	696	691	663	720	660

ACHIEVEMENT POTENTIAL	SEX		LIVING GROUP		INTERACTION			
	Male	Female	H-Dorm	O-Dorm	H-Dorm Males	H-Dorm Females	O-Dorm Males	O-Dorm Females
Ach-Conformity	25.4	27.3 T	26.2	26.7	26.0	26.3	25.0	28.1
Ach-Independence	22.2	23.2	23.2	22.5	22.2	23.8	22.2	22.8
Intellectual Efficiency	39.6	41.5 T	40.6	40.7	39.1	41.6	40.0	41.3
Socialization	36.0	37.2	37.5	36.4	37.2	37.7	35.1	37.5
Responsibility	30.6	31.9	32.0	30.9	31.5	32.3	29.9	31.6
Femininity	17.7	22.5 **	21.2	19.8	19.1	22.5	16.7	22.4 T

** = p .05 H-Dorm = Honors-floor dorm = N = 46 (M = 17; F = 29)
T = p .10 O-Dorm = Other residential dorm = N = 60 (M = 28; F = 32)

Table 2
Means on Family Achievement Orientation and Parental Background Variables
for each Sex, Living Group and Sexes with Living Group

FAMILY ACHIEVEMENT ORIENTATION	SEX		LIVING GROUP		INTERACTION	
	Males	Females	H-Dorm	O-Dorm	H-DORM Males	O-DORM Females
Independence	7.14	7.12	7.16	7.11	6.89	7.32
Ach-Orientation	4.86	5.22	4.60	5.44	4.50	5.12
					4.76	5.69 **

PARENTAL BACKGROUND VARIABLES	SEX		LIVING GROUP		INTERACTION	
	Males	Females	H-Dorm	O-Dorm	H-DORM Males	O-DORM Females
<u>Mother's</u>						
Education	3.51	3.73	3.71	3.58	3.50	3.52
Occupation-SES	54.1	53.6	53.4	54.2	50.6	55.3
Occupation-Prestige	71.7	70.9	71.2	71.2	70.2	72.0
Time of Employment	1.34	1.49	1.49	1.38	1.35	1.58
					1.33	1.42
<u>Father's</u>						
Education	3.40	3.39	3.47	3.33	3.28	3.59
Occupation-SES	61.4	64.9	68.8	60.7	59.3	71.9
Occupation-Prestige	75.2	75.1	76.0	74.4	72.2	78.7
					63.0	77.7
					59.0 T	72.3 **

** = p .05
T = p .10
H-Dorm = Honors-floor dorm = N = 46 (M = 17; F = 29)
O-Dorm = Other residential dorm = N = 60 (M = 28; F = 32)

Table 3
Means on Achievement Expectations and Career Orientation Variables
for each Sex, Living Group and Sexes within Living Groups

ACHIEVEMENT EXPECTATIONS AND CAREER ORIENTATION	SEX		LIVING GROUP		H-DORM		O-DORM	
	Males	Females	H-Dorm	O-Dorm	Males	Females	Males	Females
Ach-Motivation	10.9	11.6	11.2	11.4	10.7	11.4	11.1	12.0
Rank Expectations	2.82	2.80	2.78	2.83	2.76	2.79	2.86	2.81
Grade Expectations	2.57	2.69	2.63	2.64	2.60	2.65	2.55	2.71
Career Orientation	2.78	3.21 **	3.16	2.93	2.88	3.32	2.71	3.10
Career Decidedness	2.86	3.14	2.89	3.17	2.82	2.92	2.89	3.58
Career Changes	3.46	3.74	4.12	3.22	4.27	4.04	2.91	3.46
Major Change	.27	.28	.32	.24	.27	.35	.27	.21
Earliest Career Choice: SES	71.4	68.3	68.5	70.4	70.4	67.4	72.1	69.1
Earliest Career Choice: Prestige	78.1	76.9	77.3	77.4	77.1	77.5	78.8	76.3
Freshman Career Choice: SES	78.5	76.8	78.0	77.1	81.1	76.1	76.6	77.4
Freshman Career Choice: Prestige	81.1	80.6	80.9	80.7	82.1	80.2	80.4	81.0

** = p .05
T = p .10
H-Dorm = Honors-floor dorm = N = 46 (M = 17; F = 29)
O-Dorm = Other residential dorm = N = 60 (M = 28; F = 32)

Table 4
Stepwise Results from Multiple Regression Analysis
of Achievement Variables with Spring GPA

	F-TEST	SIGNIFICANCE	R ²	R ² CHANGE
1. SAT Math	7.31	.01 **	13.7	13.7
2. Rank Expectations	5.39	.03 **	22.9	9.2
3. HS GPA	4.72	.04 **	30.4	7.5
4. Ach-Conformity	4.00	.05 **	36.3	5.9
5. Responsibility	5.38	.03 **	43.6	7.2
6. Intellectual Efficiency	3.32	.08 **	47.8	4.2
7. Male X Other Dorm	4.17	.05 **	52.7	4.9
8. Achievement Orientation	4.92	.03 **	58.0	5.3
9. SAT Verbal	3.97	.05 **	62.0	4.0
10. Career Orientation	2.77	.11	64.6	2.6
11. Fathers' Occupational SES	2.06	.16	66.5	1.9
12. Mothers' Education	.86	.35	67.4	0.8
13. Fathers' Occupational Prestige	.85	.36	68.2	0.8
14. Mothers' Occupational Prestige	1.46	.24	69.5	1.3
15. Mothers' Occupational SES	2.28	.14	71.5	2.0
16. Female X Honors-floor	1.69	.20	73.0	1.5
17. Prestige of First Career Choice	1.10	.30	74.0	1.0
18. SES of First Career Choice	8.21	.01 **	79.7	5.8
19. Ach-Independence	1.63	.21	80.8	1.1
20. Career Decidedness	1.32	.26	81.7	0.9
21. Major Change	1.79	.19	82.9	1.2
22. Socialization	.80	.38	83.4	0.5
23. Achievement Motivation	.19	.67	83.6	0.1
24. Femininity	.26	.61	83.7	0.2
25. Male X Honors-floor	.07	.79	83.8	0.1
26. Grade Expectations	.04	.84	83.8	0.0
27. Independence	.04	.84	83.8	0.0
28. Fathers' Education	.02	.88	83.8	0.0
29. Prestige of Last Career Choice	.01	.91	83.9	0.0
30. SES of Last Career Choice	.06	.81	84.0	0.0
31. Career Change	.01	.92	84.0	0.0

** = p .05; N = 104 cases

(at .05 level. A third multiple regression analysis (Table 6) analyzed these six variables, finding the following five to be significant: 1)high school GPA, 2)intellectual efficiency from the CPI, 3)students' rank expectations, 4)SAT Math scores and 5)achievement via conformity from the CPI. A fourth multiple regression analysis (Table 7) was carried out on these achievement variables, resulting in the following four significant predictors for Spring GPA achievement criterion: 1)high school GPA, 2)intellectual efficiency, 3)SAT Math scores, and 4)achievement via conformity. A final regression analysis (Table 8) confirmed that these variables account for 35.7% of the explained variance on the GPA.

Table 5

Results of Second Multiple
Regression Analysis on Achievement Variables with Spring GPA

VARIABLE	F-TEST	SIGNIFICANCE	R ²	R ² CHANGE
HS GPA	3.25	.08	9.36	9.36
SAT Verbal	.04	.84	9.58	0.22
Intellectual Efficiency	6.44	.01 **	12.02	2.44
SES-First Career	.09	.77	12.41	0.39
SEX (M) X Dorm (Other)	2.76	.10	15.97	3.56
Ach-Orientatation	2.60	.11	18.12	2.15
Rank Expectations	1.39	.25	26.44	8.32
Responsibility	.50	.48	32.38	5.95
SAT Math	2.35	.13	34.13	1.75
Ach-Conformity	8.17	.006 **	43.23	9.10

** = $p > .05$; overall $F = 3.88$ ($p > .000$); $N = 104$ cases

Table 6

Results of Third Multiple
Regression Analysis on Achievement Variables with Spring GPA

VARIABLE	F-TEST	SIGNIFICANCE	R ²	R ² CHANGE
HS GPA	6.70	.01 **	11.7	11.7
Intellectual Efficiency	5.32	.02 **	13.7	2.0
Rank Expectations	1.33	.25	21.2	7.5
Sex (M) X Dorm (Other)	1.37	.25	24.1	2.9
SAT Math	3.75	.06 **	27.4	3.3
Ach-Conformity	9.31	.00 **	37.0	9.6

** = $p > .05$; overall $F = 3.88$ ($p > .000$); $N = 104$ cases

Table 7

Results of Fourth Multiple
Regression Analysis on Achievement Variables with Spring GPA

VARIABLE	F-TEST	SIGNIFICANCE	R ²	R ² CHANGE
HS GPA	5.67	.02 **	11.7	11.7
Intellectual Efficiency	5.39	.02 **	13.7	1.9
Rank Expectation	1.20	.28	21.2	7.5
SAT Math	6.38	.01 **	26.5	5.4
Ach-Conformity	8.70	.004 **	35.6	9.0

** = $p > .05$; overall $F = 6.85$ ($p > .000$); $N = 104$ cases

Table 8

Results of Final Multiple
Regression Analysis on Achievement Variables with Spring GPA

VARIABLE	F-TEST	SIGNIFICANCE	R ²	R ² CHANGE
HS GPA	7.35	.009 **	11.7	11.7
Ach-Conformity	14.46	.000 **	19.1	7.3
SAT Math	8.25	.006 **	30.2	11.1
Intellectual Efficiency	5.48	.022 **	35.7	5.5

** = $p > .05$; overall $F = 8.89$ ($p > .000$); $N = 104$ cases

Hypothesis 1: It was predicted that there would be no significant sex difference on achievement aptitude variables, i.e. SAT, Math and SAT Verbal aptitude scores and high school grade point average (HS GPA). However, analysis of variance revealed significant main effect for sex on SAT Math scores, whereby male students had higher scores than female students ($p > .01$). There were no significant sex effects on the SAT verbal scores or the high school GPA.

Table 9

Results of Analysis of Variance
on Achievement Aptitude for Sex Effect

Ach-Aptitude	Male X	Female X	F-Test	Significance of F
HS GPA	3.76	3.75	1.532	.220
SAT Verbal	635	673	.620	.434
SAT Math	709	662	8.250	.006 **

** = $p > .05$

Hypothesis 2: It was hypothesized that male students would have higher achievement potential scores than female students as measured by the CPI subscales for achievement potential and intellectual efficiency (Ac, Ai, Ie). Analysis of variance, however, revealed no significant main effects for sex on these variables.

Table 10

Results of Analysis of Variance
on Achievement Potential for Sex Effect

Ach-Potential	Male X	Female X	F-Test	Significance of F
Ach-Conformity	25.4	27.3	3.552	.062
Ach-Independence	22.2	23.2	2.108	.150
Intellectual Efficiency	39.6	41.5	3.503	.064

Hypothesis 3: The prediction was that female students would be higher than males on their family achievement orientation scores measured by the FES. The rationale was that female students would have perceived more support for their achievements from their family of origin in order to counterbalance the effects of normal female socialization processes and childrearing practices so as to have qualified for the Honors College. Analysis of variance revealed no significant main effects for sex.

Table 11

Results of Analysis of Variance
on Family Achievement Orientation for Sex Effect

Family Ach- Orientation from FES	Means		F-Test	Significance of F
	Male X	Female X		
Independence	7.14	7.12	.005	.944
Ach-Orientatation	4.86	5.22	.909	.343

Hypothesis 4: No sex differences were predicted on parental achievement variables such as socioeconomic status and prestige level of parental occupations, as well as their educational and employment status. Consistent with the hypothesis, the analysis of variance yielded no significant main effects for sex.

Table 12

Results of Analysis of Variance
on Parental Achievement for Sex Effect

Parental Variable	Means		F-Test	Significance of F
	Males	Females		
<u>Mothers</u>				
Education	3.51	3.73	.625	.431
Occupation-SES	54.1	53.6	.011	.917
Occupation- Prestige	71.7	70.9	.168	.683
Time of Employment	1.34	1.49	.979	.325
<u>Fathers</u>				
Education	3.40	3.39	.003	.960
Occupation-SES	61.4	64.9	.441	.508
Occupation- Prestige	75.2	75.1	.005	.944

Hypothesis 5: It was predicted that there would be significant sex differentiation in achievement college expectations and career aspirations. Male students were thought to have higher expectations for their college achievement performance, more decided career aspirations and a greater career orientation toward the college experience. Analysis of variance indicated only one significant main effect for sex on these achievement expectations and aspirations. Female students approached the college experience with more career orientation than male students.

Table 13
Results of Analysis of Variance
on Achievement Motivation and Expectations for Sex Effect

Achievement Motivation	Means Male	Female	F-Test	Significance of F
Ach-Motivation	10.9	11.6	2.096	.153
Rank Expectations	2.82	2.80	.032	.858
Grade Expectations	2.57	2.69	1.296	.258
Career Orientation	2.78	3.21	4.419	.038 **
Career Decidedness	2.86	3.14	1.532	.220

** = $p > .05$

Hypothesis 6: It was predicted that there would be no sex differentiation on the achievement criterion (Spring GPA). Analysis of variance supported this hypothesis since there was no significant main effect for sex.

Table 14

Results of Analysis of Variance
on Spring GPA for Sex Effect

Ach-Criterion	Male X	Female X	F-Test	Significance of F
Spring GPA	3.41	3.31	1.436	.234

Hypothesis 7: Living group (honors-floor - other residential dorms) was predicted to have no influence on any achievement variables for male or female students. However, analysis of variance revealed two significant main effects for living situation. On the achievement aptitude variable, students in the honors-floor dorm had significantly higher SAT Verbal scores than students in the other residential dorms. On the family achievement orientation, students who did not choose to live on the honors-floor had significantly higher scores on their perceived family achievement orientation than honors-floor students.

Table 15

Results of Analysis of Variance on Achievement Aptitude Variable
and Family Orientation Variable for Living Group Effect

	Honors-floor X	Other dorms X	F-Test	Significance of F
SAT Verbal	679	644	5.029	.029 **
Ach-Orientation	4.60	5.44	4.332	.040 **

** = $p > .05$

Hypothesis 8: It was hypothesized that there were no significant differences related to the living group on the achievement criterion (Spring GPA). Analysis of variance yielded results that were consistent with the hypothesis. There was no significant relationship between living situation and GPA at the end of the freshmen year.

Table 16

Results of Analysis of Variance
on Spring GPA for Living Group Effect

Ach-Criterion	Honors-floor X	Other dorm X	F-Test	Significance of F
Spring GPA	3.29	3.45	1.227	.271

Hypothesis 9: All interactions between sex and living group were predicted to be non-significant for the achievement variables and the achievement criterion. However, analysis of variance revealed one significant interaction (out of 30 possible) on a parental background variable. The prestige level of father's occupation was significantly higher ($p > .01$) for the female students in the honors-floor living situation. It should be noted that the main effects for sex and living situation were not significant.

Hypothesis 10: I speculated that the achievement criterion (GPA) would be influenced by a different pattern of achievement variables for male and female students. However, the result of several multiple regression analyses indicated that, in fact, male and female students' GPAs were both influenced by similar achievement variables: 1) high school GPA, 2) SAT Math scores, 3) intellectual efficiency from

the CPI, and 4) achievement by conformity factor from the CPI. These factors significantly ($p > .05$) influenced the Honors College students' academic performance on their Spring GPA and contributed 35.7% of the variance. Moreover, when sex was entered into the regression equation, both as a separate variable and (of greater relevance) in multiplicative combination with other predictors, it did not significantly contribute to the explained variance. Thus, Hypothesis 10 was not supported.

Summary

Several analyses of variance were performed which used pre-existing Honors College file data on SAT scores along with the data gathered, upon the students' arrival on campus, by the instruments described. These analyses of variance yielded two main statistically significant variations in achievement ability ($p > .05$). One is associated with sex, and the other with residence dorm status: male students had higher SAT Math scores than female students, and honors-floor residents had higher SAT Verbal scores than other honors students. (It is important to note that at the time the research instruments were administered, the students had lived on campus less than a week and that, therefore, no causal effects of any sort should be attributed to residence status.)

On achievement motivation, variations were also ascribed to sex: female students exhibited significantly higher scores on career orientation to the college experience than their male colleagues. The results of further analyses of variance indicated that students' perceived family orientation toward achievement was associated with choice of residence status: honors students who did not choose the

honors-floor residential option had higher scores on family achievement orientation. Finally, a significant relationship between sex and residence status was attributed to a parental background variable: female students in the honors-floor dorm had higher ratings for the prestige level of their father's occupation.

From the results of the multiple regression analyses, there were two categories of achievement variables that contained factors significantly affecting the students' performance on the GPA criterion: 1) achievement aptitude (HS GPA and SAT Math scores), and 2) achievement potential (Intellectual efficiency and Achievement by conformity factors from CPI). There was no major influence on the achievement performance directly attributable to sex differences on the achievement variables.

Trends and Non-Predicted Findings

Two interactions between sex and living group approached significance ($p > .10$). Female students in the honors-floor dorm had higher ratings on the socioeconomic level of their father's occupation. In addition, male students who chose to live in the honors-floor dorm had higher scores on CPI femininity scores than males in other residential dorms.

Supplementary Analyses

Several questions concerning the Honors College students' career choices remained unanswered. One had to do with possible differences between male and female Honors College students in levels of career aspirations as expressed in their reported first childhood career choice, in contrast to their current career choices as freshmen. In addition, it had not been determined if there were significant

differences between male and female Honors College students in their freshmen career choice as compared to the socioeconomic and prestige level of their parents' occupation. Another unknown was whether or not their parents reflected the typical cultural pattern of fathers having higher occupational levels than mothers. To explore these questions, several analyses of variance were performed on these career-oriented variables.

By means of the Blanova program at Michigan State University, it was possible to compare variations in the individual subjects on his/her childhood and freshmen career choice on variables such as socioeconomic and prestige level while accounting for differences of sex and dorm residence. Similar analyses were carried out for paternal and maternal variations in education and occupational level. Finally, with the nested factor design, the students' freshmen career choice was compared individually and within sex and living group categories on the socioeconomic and prestige level of the parents' occupation.

There were several significant results ($p > .05$) located in Table 17. First, all honors students significantly raised their career aspirations as measured by the SES and prestige level from their expressed childhood reports to their freshmen career choices. Second, all students had significantly higher career aspirations than both their mothers' and fathers' occupational socioeconomic status and prestige level. Finally, fathers of male and female students had higher socioeconomic status and prestige levels as determined by their occupation than the mothers'.

Table 17

Means and F-Ratios from Analysis of Variance on Parental
Achievement Variables and Childhood and Freshmen Career Choices

COMPARED VARIABLES	MEANS		F-RATIO	F-PROBABILITY
SES for Childhood and and Freshmen Career Choice	SES 1	SES 2		
	69.2	77.7	12.616	.001 **
PRESTIGE for Childhood and Freshmen Career Choice	PRES 1	PRES 2		
	77.2	80.4	10.978	.001 **
SES for Mothers' and and Fathers' Occupation	SES M	SES F		
	54.4	63.7	11.829	.001 **
PRESTIGE for Mothers' and Fathers' Occupation	PRES M	PRES F		
	71.5	74.9	8.936	.004 **
SES for Mothers' Occupation with Fresh- men Career Choice	SES M	SES 2		
	54.4	77.7	67.543	.0005 **
SES for Fathers' Occupation with Fresh- men Career Choice	SES F	SES 2		
	63.7	77.7	18.696	.0005 **
PRESTIGE for Mothers' Occupation with Fresh- men Career Choice	PRES M	PRES 2		
	71.5	80.4	55.361	.0005 **
PRESTIGE for Fathers' Occupation with Fresh- men Career Choice	PRES F	PRES 2		
	74.9	80.4	16.471	.0005 **

NB: THERE WERE NO SIGNIFICANT INTERACTIONS OF SEX AND LIVING GROUP

1 = Earliest and/or Childhood Career Choice

2 = Freshman Career Choice

M = Mother's

F = Father's

** = $p > .01$

DISCUSSION

Considering the many hypothesized differences between male and female socialization, childrearing practices and career aspirations, it was striking that only a few achievement variables were clearly influenced by the student's gender. As demonstrated in previous studies on high ability students (Holland, 1958, 1959, 1961; Astin and Mylint, 1971; Demos and Weijola, 1966), male and female students showed comparable performances in high school grades and scholastic aptitudes in math, and verbal tests were reported to be equivalent for both sexes in the earlier studies. In contrast, the present findings indicate that male honor students had significantly higher scholastic aptitude in math than female honor students. Although differences are not significant, observation of Holland's (1958) data on National Merit scholars reveals means comparable with those found in the present study, with male scores consistently higher than female scores.

According to Maccoby and Jacklin (1975), there has been a long-standing assumption of sex differentiation in intellectual abilities. Males are considered higher in visual-spatial skills, often necessary in solving math problems, and females develop more verbal cognitive styles. There is considerable controversy about the whys and wherefores of these observations. To account for higher math skills, differences in intellectual abilities and verbal-spatial components tapped in math tasks have been explored. Suspected gender differences in breaking visual-spatial sets, disembedding visual-spatial objects and analytic capabilities have been tested with non-conclusive results. Boys have been described as more interested in sciences and math,

cultivating math skills as necessary for fulfilling expectations in future careers. Math skills are practically used and applied in relation to science interests for boys, while comparable motivations are not observable for girls. Other explanations for differences in math skills have ranged from factors such as heredity, hormonal variability, cerebral lateralization and cross-sex linkage of spatial ability components. Environmental effects for the math ability difference have been focused on socialization practices on independence and autonomy because these qualities have been hypothesized to be the foundations for the capacity to think more analytically and independently, inherent aspects of math skill. In addition, math may be considered a more masculine pursuit, more encouraged for male career efforts, and possibly taught differently to male and female students.

However, in light of the extremely small Honors College sample, these results are possibly misleading. When the same data was analyzed according to majors, there was no consistent indication that males had higher math scores than females. In the present study, the finding of some previous studies that female students are significantly higher in verbal scores was not confirmed. Instead, differences on verbal aptitude were related to students' selected choice of living situation. A closer examination reveals that in the other residential dorms female students followed the typical pattern of higher verbal scores than male students while male students had higher math scores. However, this was not true in the honors-floor dorm residence. Both male and female students had significantly higher verbal scores than the other dorm students. Students with strong verbal abilities may be more drawn to an experience that would allow

verbal sharing and exchange such as the honors-floor dorm option. Another possible explanation for the significant difference in verbal aptitude among the honors-floor and other residential dorm students could be the variations of major choice in each group. For example, 25% of the non-honors-floor group consisted of natural science and political/social science majors. Perhaps these students contributed to the high math scores and lower verbal scores of the other dorm students.

Without more information on the major choices, the discrepancy between the groups of male students remains puzzling. Male students in the honors-floor setting had higher verbal skills while male students in the other dorms had lower verbal scores but the predicted higher math scores. One possibility is that male students in Honors College dorms are more intellectually and verbally oriented, a traditionally 'feminine' capability. As a result, these students may be more androgynous, i.e., capable of more variability in their sex role orientation and more balanced in their verbal-math abilities. If one considers the choice to live on the honors-floor an affiliative decision, then these male students may have characteristics associated with a female achievement mode, i.e., an affiliative orientation toward achievement. Therefore, in addition to having higher verbal scores (a suggested feminine pattern), males in the honors-floor dorm may have a more traditionally 'feminine' orientation toward affiliation and/or combined affiliation-achievement approach expressed in their living choice. On the other hand, male students following the predictable 'masculine' pattern of high math, low verbal abilities may be more traditionally achievement-oriented in a more expected

fashion.

There are no statistically significant differences between the sexes on personality characteristics considered to reflect achievement potential. However, females showed a trend toward higher scores in achievement by conformity and intellectual efficiency. In general, female students have been considered more cooperative and less impulsive than males throughout their early formal education (Maccoby and Jacklin, 1975). Their higher score on achievement by conformity may be a carryover from these oversocialized behaviors. Intellectual efficiency is often considered an unrefined intelligence measure (Gough, 1964). The capacity to utilize their intellectual abilities may be more developed in these female honors students, a factor related to their academic grade achievements. As previously mentioned, high ability females work hard and efficiently, a considerable strength for academic performance. However, the tendency toward conformity may become a drawback in later years as risk-taking behavior and creative thinking become more important for career and/or academic advancement. Interestingly, Holland (1958) found a math factor for boys and the CPI achievement by conformity factor for girls to correlate significantly with grades in science majors. Perhaps high ability female students compensate for their lower math abilities by their persistence on academic tasks and abilities to delay impulse gratification in order to achieve academic success.

Although socialization practices may differentiate males and females, Honors College students have similar performance expectations for grades, class rank and career aspirations. All students recalled significantly lower levels of career aspirations from childhood, as

compared to the higher levels of career orientation expressed in their freshman career choices. In view of the probable influence of the observed high parental educational and occupational levels, it is not surprising that these high ability students are obviously career-oriented. In general, the overall conclusion is that honors students' aspirations and expectations are similar for male and female students. However, female initial approach toward the college experience was significantly more career oriented on a questionnaire response, a possible indication of more expressed career motivation. While some past comparative studies of students' attitudes toward college and career orientation have demonstrated less career-oriented aspirations among women (Constantinople, 1967), others with high ability student populations have indicated contradictory results. Freshman honors women were reported to have higher expressed career expectations than freshmen men (Astin and Mylnt, 1971) and a better sense of achievement expectancy (Capretta, Jones, Siegel and Siegel, 1963). One may speculate whether the present results are an indication of female students' increased confidence in their scholastic achievement abilities, greater upward mobility strivings and/or heightened awareness of narrowing sex-role differences from social-political-cultural changes.

In view of the speculation that androgyny may be an inherent selective factor for the honors-floor dorm males, it is striking that the femininity scores of the CPI show a trend (at the .06 level) for an interaction effect between sex and living group. Male students in the honors-floor dorm had higher femininity scores than the male students in the other dorm settings, possibly attributable to differences in expressed androgynous characteristics. As pointed out by

Bem (1979) and Spence et al (1975), the CPI femininity scale is a bipolar continuum of masculine-feminine interests and pursuits and is clearly not an adequate measure of androgyny. As a gross indicator, it can only demonstrate that honors-floor males are different from the males in the other dorms in their interests. The items on the CPI femininity scale are generally stereotyped, suggesting that cultural and artistic interests are more 'feminine'. Therefore, these results may be simply an indication of their more cultural-artistic-social interests, attributable to their higher educational backgrounds. We may speculate whether these more 'feminine' qualities generalized to their overall achievement orientations, perhaps balancing the socialized competitive emphasis for 'masculine' achievement patterns with a more cooperative approach along with their expressed 'feminine' interests.

Female students in both groups do not differ on their level of expressed femininity as measured by the CPI scale. As observed in Rand's (1968) study of personality factors, achievement-oriented women were high on both 'masculine' and 'feminine' traits. The fact that the CPI is a bi-polar measure makes the high scores for women in both groups impossible to interpret on the basis of both 'masculine' and 'feminine' interests. It does indicate that these high ability female students from both living groups consider themselves to have 'feminine' interests as measured by this subscale. Since it is not possible to determine expressed 'masculine' interests as well, no inferences can be made for the androgynous characteristics of female students.

A more comprehensive understanding of the results of this study may be offered by considering the dynamic impact of the initial

acceptance or refusal of the invitation to participate in the honors-floor residential dorm. Decisions to participate or not participate in special educational programs for high ability students have been found significantly to differentiate students on several personality dimensions. In a comparison of successful and unsuccessful honors students and successful students who declined participation in the honors program, Capretta, Jones, Seigel and Seigel (1963) have suggested that the decision to participate or not participate was a more important factor than success or failure in the honors program for distinguishing students on definite observable traits. Findings that parallels the present study were noted in this comparative study by Capretta et al (1963). Female students were similar on several personality and achievement motivation measures across comparative groups but males were significantly different across groups. While Demos and Weijola (1966) did not find significant differences between the sexes, they did find that freshmen students who accepted an honors program invitation were significantly higher on ACT composite scores and CPI scales (Re, Ai and Ie) while students refusing to participate in the honors program were higher on the socialization scale of CPI. The authors considered this difference attributable to the decision to refuse the invitation to a demanding general honors program rather than to chance probabilities.

In the present study, the decision to consider living in the honors-floor residence was presented to students after they had decided to accept or decline membership in the Honors College program. In addition, honor students who had been admitted to the College of Natural Science (Lyman Briggs) or the College of Social Science

(James Madison) had already been assigned to special residence dorms associated with their particular college. Hence, they were not free to choose the honors-floor option. However, the assumption is that those who chose to live in the honors-floor dorm were interested in a study-oriented homogeneous peer group that differed from a standard freshmen dorm residence. Previous studies have indicated that enhancing interaction and cohesiveness within the living environment has a positive influence on the student's academic achievement (DeCoster, 1968), personal development (Chickering, 1967) and possible self actualization and autonomy (McClain and Andrews, 1972). Newcomb (1962) has demonstrated the importance of the friendships developed in a close living situation in shaping individual's attitudes and values. It is also clear that students' perceptions of their total college experience are affected by the type of subenvironment that they live in and the amount of their involvement with the university life (Newcomb, 1969; Holland, 1973; Thistlethwaite, 1962).

In a brief review of the literature on residence environments that impact on students' personal growth and development, it became apparent that investigators have been attempting to evaluate and discriminate the non-cognitive variables that influence the students' college experiences and create particular environmental press. Chickering et al (1969) pointed out that institutions have varied emphasis toward educational objectives in the collegiate setting. For example, a small church-affiliated Christian college might attempt to cultivate religious devotion and moral fortitude as important characteristics for student development while an intellectually-oriented university may demand academic excellence and scholastic rigor as the primary

trait to instill in their alumni. Having established institutional variability, Moos, DeYoung and Van Dort (1976) have explored further the university environment, identifying variabilities in the sub-cultural settings within the same institution. It is their contention that these subenvironments have differential impacts on the students. Using a University Residence environment scale constructed by Moos and Gerst (1974), they were able to assess the social atmosphere and climate of university living groups as perceived by the students and/or the living group staff. In addition to substantial and significant variation among these social living situations, Moos, et al (1976) provide convincing evidence that different aspects of the living-social environment facilitate different dimensions of student growth and development. For example, living units that promote involvement and mutual emotional support within their peer interactions were shown to have students who appeared contented (i.e., other students were more likely to describe them as calm, cooperative, easy going and happy). Positive aspects such as athletic participation increased in these living units, while negative tendencies such as oversleeping, skipping class or cheating on exams, decreased due to inter-peer support. On the other hand, living situations which emphasized academic achievement fostered a general tendency toward increased religious concern and greater feelings of isolation, as well as general fatigue from thinking they have far too much to do. In an earlier comparison of living-group impact on freshmen students, Moos, et al (1975) identified a typology of living group arrangements that: 1) emphasizes personal growth dimensions via competition, supporting academic achievement and independence, or 2) fosters supportive relationships,

deemphasizing personal growth factors except for traditional social orientation and intellectuality. He also found that environments emphasizing competition were typically male. A more social independent approach was found in co-ed groups, while traditional social and relationship-oriented groups were mainly composed of female students. Moos, et al (1975) demonstrated that competition-oriented groups seemed to structure social interactions and academic work into a competitive situation and, in general, lacked an emphasis on involvement and support. These authors suggest that the impact of competition-oriented groups on student development may actually be the result of less involvement and support rather than stronger competition orientation.

Having recognized that living-situations impact on student development, one may ask what shapes the student's initial attraction to or selection of one living group from another. Holland (1973) has speculated that personal characteristics influence the living-situation choice. Moos, et al, (1975) suggest the differential effects of background factors such as sex, socioeconomic status, level of aspiration and type of student. Significant unpredicted results in the present study suggest some possible answers to these questions. Tested before the possible effect of the environmental impact of college life, the observed results may contribute to a further understanding of students' living-situation choice. Those students who refused the invitation to participate in the Honors College residence dorm perceived their family of origin to have a higher achievement orientation as measured by the FES. According to Moos and Moos (1976), a higher achievement orientation describes an overall family style of placing various school and work activities into an achievement-oriented or competitive

framework. Typically, the general view toward life is expressed in strivings to "get ahead" and emphasis on "working hard". Moos and Moos (1976) also identified a division into independent or conforming types of familial approach toward achievement. A family with high independence strivings would encourage being assertive, self sufficient and autonomous while the more conforming family would be less independent, show less concern for political, intellectual or cultural activities and possibly avoid recreational and sports activities.

From the FES profiles (see below in Figure 1), both honors-floor and other dorm students have similar elevations in perceived independence orientations, thereby characterizing their families as

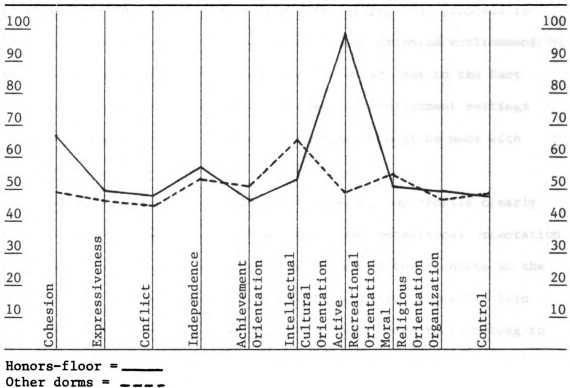


Figure 1. Profile of Family Environment Scale for Honors-floor Group and Other Residential Dorm Group.

encouraging self sufficiency and the ability to make solitary decisions as well as thinking things out for themselves. However, in spite of comparable career aspirations and past academic performance, the difference remains that students who refuse the honors-floor option perceive their families as more supportive of competition and upward mobility strivings than other honor students.

One may wonder whether students not a part of the honors-floor have chosen majors that are more oriented toward "getting ahead" or feel that they have sufficient support from their families to feel that less involvement with peers is more conducive to their career pursuits. Perhaps accustomed to more competitive recreational interests and focused on "getting ahead", these students may have anticipated feeling uncomfortable in a dorm setting that proposed to encourage a stimulating intellectual and study oriented environment in a context of supportive interaction. However, due to the fact that 25% of these students are in residential environment settings related to their college, these interpretations must be made with caution.

More importantly, examination of the FES group profile clearly reveals a marked increase in perceived active recreational orientation and cohesion on the family environment subscales for students on the honors-floor. This suggests that students' initial choice to join the honors-floor may have been associated with a desire to belong to a group that was cohesive and activity-oriented and provided them with membership in a group where other students might have similar interests and orientations to college. These influences may ultimately be the most dominant factors in the choice to live on the honors-floor.

Socioeconomic status has been identified as a factor which significantly influences students' career aspirations and eventual realization of their potential. All students in the present study had high aspirations that, as a group, were significantly above the socioeconomic status and prestige level of their parents. In general, parents who have high achievement occupations themselves would appear to be supportive of their offsprings clear achievement strivings. All of these students have career aspirations and parental backgrounds that would be expected to facilitate eventual achievement. The results of the study indicated a significant interaction between sex and living group. Female students who chose to live in the honors-floor dorm had fathers with significantly higher occupational prestige than other students. Mother's educational level for female students in the honors-floor was also higher (though not significantly so) than for the other groups, suggesting a possible history of family interaction around intellectual-cultural activities. However, a significant difference was found in a t-test analysis of completed and non-completed questionnaire forms for females in the other dorm setting. Higher father's occupational prestige was associated with non-completed forms for female students suggesting that the difference between the groups of female students may not have been as great as it first appeared. Therefore, the question of increased father encouragement/financial support for female students of either living choice remains open. Neither can assumptions be made from this study as to mother-father influence and/or identification as a factor for the career orientation of high ability women, although these influences are suspected.

Academic performance, as measured by spring grade point average,

did not differ for male and female honor students. For this population, high school GPA, SAT math scores and CPI traits of achievement by conformity and intellectual efficiency were most predictive of freshmen academic achievement (GPA) in a multiple regression equation. High school grades and scholastic aptitude scores when used in combination with personality factors have been found repeatedly to be highly efficient in predicting academic success (Capretta, et al, 1963; Demos and Weijola, 1966; Gough, 1964; Holland, 1968; Holland and Astin, 1962; Mason, Adams and Blood, 1966). Although the personality factors considered vary from study to study, the traits measured in the present study are those most typically included. Holland (1958) stresses that each sample population can have a unique predictive equation to accomodate adequately the varying combinations of personality traits effective within each university environment. Male students in this population had significantly higher math aptitude scores while female students had a tendency toward higher achievement by conformity and intellectual efficiency. Therefore, any sex differentiation on achievement aptitude (math being loosely associated with the masculine effect) was probably balanced by the personality variables (or feminine effect). All students in the Honors College came from families stressing independence, as measured by the FES independence subscale and had comparable achievement by independence scores as measured by the CPI. Although the later scales is usually a significant indicator of academic success, the homogeneity of the scores may have reduced its effectiveness so that the other CPI scales were more predictive.

In summary, the variables of high school GPA, SAT math scores

and two CPI personality traits (achievement by conformity and intellectual efficiency) accounted for 35.67% of the variance in the academic achievement criteria (Spring GPA), a result closely resembling that of Holland's (1958) study on National Merit scholars. However, the Honors College study is unique in the inclusion of family orientation variables that can provide additional information on important aspects of family life that influence students' collegiate experience. As pointed out a social-emotional growth decision such as accepting or refusing the Honors College invitation to participate in a special dorm residence proved to distinguish honors students with respect to their perceptions of familial competitive-achievement orientation and cohesion and recreational orientation. In general, a typical sex-related pattern of math aptitude difference was observed. However, high ability women do not exhibit the anticipated differences from males in achievement-career expectations and aspirations or in patterns of family socialization for achievement. A future study that more adequately measured sex role orientation and attitudes would help to clarify the presented ambiguity of the observed patterns of hypothesized sex-attributed traits in high ability and achievement motivated subjects. In addition, emphasis on understanding various familial environments and attitudes toward achievement, especially competition-oriented versus supportive-oriented approaches, appear to be important areas for further research endeavors.

Recognizing that career development for all students is highly affected by the collegiate experience, we may wonder whether follow-up studies at five and ten year intervals would demonstrate similar equity in the realization of these comparable achievement abilities

and career orientations in these high ability male and female students.

It has yet to be seen if an enriching living-learning residence environment will impact on the students' vocational-occupational achievement as well as personal growth dimensions. Future experimental research on residential living should include environmental press measures, so that the impact of the social climates created by different student groups can be assessed and evaluated. For instance, the question remains whether high ability women influenced by a combined affiliation-achievement atmosphere such as the honors-floor residence will experience less psychological and environmental barriers toward achievement.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Almquist, E.M. Sex stereotypes in occupational choice: the case for college women. Journal of Vocational Behavior, 1974,5,13-21.
- Almquist, E.M. & Angrist, S.S. Career salience and atypicality of occupational choice among college women. Journal of Marriage and the Family, 1970,32(May),242-249.
- Alper, T.G. The relationship between role-orientation and achievement motivation in college women. Journal of Personality, 1973,11,9-31.
- Angelini, A.L. Unnovo metodo para avaliar a motivacao numano ("A new method of evaluating human motivation"). Unpublished doctoral dissertation, Univerisidade de Sao Paulo, Brazil, 1955. (Results summarized in Atkinson, 1958).
- Angrist, S.S. The study of sex roles. Journal of Social Issues, 1969, 25(Jan),215-32.
- Angrist, S.S. Variations in women's adult aspirations during college. Journal of Marriage and Family, 1972(Aug),465-468.
- Astin, H.S. A profile of the women in continuing education. In H.S. Astin (ed), Some action of her own: The adult women and higher education. Lexington, Mass.: Lexington Books, 1976.
- Astin, H.S. Career development of girls during the high school years. Journal of Counseling Psychology, 1968,15,536-540.
- Astin, H.S. Women's occupations. In J.A. Sherman & F.H. Denmark (eds), The psychology of women: Future directions in research. New York: Psychological Dimensions Inc. 1978.
- Astin, H.S. & Bayer, A.E. Sex discrimination. Academic Education Record, Spring,1972,372-395.
- Astin, H.S. & Mylint, T. Career development of young women during post-high school years. Journal of Conseling Psychology, 1971,18(4),369-393.
- Allaman, J.D., Joyce, C.S. & Crandall, V.C. The antecedents of social desirability response tendencies of children and young adults. Child Development,1972,43,1135-60.
- J.W. Atkinson, (ed), Motives in fantasy, action and society. Princeton: Van Nostrand, 1958.
- J.W. Atkinson, & N.T. Feather (eds), A theory of achievement motivation. New York: Wiley, 1966.

Atkinson, J.W. & Litwin, G.H. Achievement motive and test anxiety conceived as motive to approach success and motive to avoid failure. Journal of Abnormal and Social Psychology, 1960, 60, 52-63.

J.W. Atkinson & J.O. Raynor (eds), Motivation and achievement. Washington, D.C.: Winston, 1974.

Bardwick, J.M. The psychology of women: A study of biosocial conflict. New York: Harper & Row, 1971.

Bartlett, E.W. & Smith, C.P. Childrearing practices, birth order and the development of ach-related motives. Psychology Reports, 1966, 19, 1207-1216.

Bar-Tal, D. & Frieze, I.H. Achievement motivation for males and females as a determinant of attributions for success and failure. Sex Role, 1977, 3, 301-313.

Battle, E. Motivational determinants of academic task persistence. Journal of Personality and Social Psychology, 1965, 2, 205-218.

Baumrind, D. Current patterns of parental authority. Developmental Psychology Monograph, 1971, 4, 1-18.

Baumrind, D. & Black, A.E. Socialization practices with dimensions of competence in preschool boys and girls. Child development, 1967, 38, 291-328.

Bem, S.L. Sex-role adaptability: One consequence of psychological androgyny. Journal of Personality and Social Psychology, 1975, 31(4) 634-643.

Bem, S.L. The measurement of psychological androgyny. Journal of Consulting Clinical Psychology, 1974, 42, 165-172.

Bem, S.L. On the utility of alternative procedures for assessing psychological androgyny. Journal of Consulting and Clinical Psychology, 1977, 45, 196-205.

Bem, S.L. Theory and measurement of androgyny - reply. Journal of Personality and Sociology, 1979, 37(6), 1047-1054.

Bem, S. & Bem, D. Training the woman to know her place: The social antecedents of women in the world of work. Harrisburg: Pennsylvania State Department of Education Bureau of Pupil Personnel Services, 1973 (ERIC Document Reproduction Service No. Ed. 082-098).

Bieri, J. Paternal identification, acceptance of authority and within sex differences in cognitive behavior. Journal of Abnormal and Social Psychology, 1960, 60, 76-79.

Birnbaum, J.A. Life patterns and self-esteem in gifted family oriented and career committed women. In M.S. Mednick, S.S. Tangri & L.W. Hoffman (eds), Women and achievement. New York: John Wiley & Sons, 1975.

Blau, P.M., Gustad, J.W., Jessor, R., Parnes, H.S. & Wilcock, R.C. Occupational choice: A conceptual framework. Industrial Labor Relations Review, 1956,9,531-543.

Broverman, I.K., Vogel, S.R., Broverman, D.M., Clarkson, F.E. & Rosenkrantz, P.S. Sex-role stereotypes: A current appraisal. Journal of Social Issues, 1972,28,59-78.

Capretta, P.J., Jones, R.L., Siegel, L. & Siegel, L. Some noncognitive characteristics of honors program candidates. Journal of Educational Psychology, 1963,54(5),268-285.

Card, J.J., Steel, L. & Abeles, R.P. Sex differences in realization of individual potential for achievement. Journal of Vocational Behavior, 1980,17,1-21.

Chickering, A.W., McDowell, J. & Campagna, D. Institutional differences and student development. Journal of Educational Psychology, 1969,60(4), 315-326.

Chickering, A. College residences and student development. Educational Record, 1967,48,179-186.

Collard, E.D. Achievement motive in the four-year-old child and its relationship to achievement expectancies of the mother. Unpublished doctoral dissertation, University of Michigan, 1964.

Constantinople, A. Perceived instrumentality of the college as a measure of attitudes toward college. Journal of Personality and Social Psychology, 1967,5,196-201.

Crandall, V.C. Sex differences in expectancy of intellectual and academic reinforcement. In C.P. Smith (ed), Achievement-related motives in children. New York: Russel Sage, 1969.

Crandall, V.D., Katkorsky, W. & Crandall, V.J. Children's belief in their own control of reinforcement in intellectual-academic achievement situations. Child Development, 1965,36,91-109.

Crandall, V.J., Preston, A. & Rabson, A. Maternal reactions and the development of independency and achievement behavior in young children. Child Development, 1960,31,243-251.

Crawford, J. Career development and career choice in pioneer and traditional women. Journal of Vocational Behavior. 1978,12,129-130.

Cross, K.P. Beyond the open door. San Francisco: Jossey Bass, 1971.

Davis, J.A. Great aspirations. Chicago: Aldine, 1964.

Davis, J.A. Undergraduate career decisions. Chicago: Aldine, 1965.

deCharms, R. Personal causation. New York: Academic Press, 1968.

DeCoster, D.A. The effects of homogenous housing assignments for high ability students. Journal of College Personnel, 1968,9,75-78.

Demos, G.D. & Weijola, M.I. Achievement-personality criteria as selectors of participants and predictors of success in special programs in higher education. California Journal of Educational Research, 1966, 17,186-192.

Douvan, E. Employment and the adolescent. In F.I. Nye & L.W. Hoffman (eds), The employed mother in America. Chicago: Rand McNally, 1963.

Duncan, D.O., Featherman, D.L. & Duncan, B. Socioeconomic background and achievement. New York: Seminar Press, 1972.

Elig, T.W. & Frieze, I.H. Measuring causal attributions for success and failure. Journal of Personality and Social Psychology, 1979,37, 621-634.

Emprey, L.T. Role expectations of young women regarding marriage and a career. Marriage and Family Living, 1958,20,152-155.

Epstein, C.R. Women's place: Options and limits in professional careers. Berkley: University of California Press, 1971.

Farmer, H.S. & Fyans, L.J. Women's achievement and career motivation: Their risk taking patterns, home career conflict, sex role orientation, fear of success and self concept. In L.J. Fyans (ed), Achievement motivation: Recent trends in theory and research. New York: Plaman Press, 1980.

Feather, N.T. Effects of prior success and failure on expectations of success and subsequent performance. Journal of Personality and Social Psychology, 1966,3,287-298.

Feather, N.T. Positive and negative reactions to male and female success and failure in relation to the perceived status and sex-typed appropriateness of occupations. Journal of Personality and Social Psychology, 1975,31,536-548.

French, E.G. The interaction of the achievement motivation and ability in problem solving success. Journal of Abnormal and Social Psychology, 1958,57,306-309.

French, E.G. & Lesser, G.S. Some characteristics of the achievement motive in women. Journal of Abnormal and Social Psychology, 1964,68, 119-128.

Frieze, I., Fisher, J., McHugh, M., Hanersh, B., Valle, V., Achievement in women. In M. Mednick, S. Tangri & L. Hoffman (eds), Women: Social psychological perspective on achievement. New York: Holt, Rinehart & Winston, 1975.

Gough, H.G. Academic achievement in high school as predicted from the California Psychological Inventory. Journal of Educational Psychology, 1964,55(3),174-180.

- Hatfield, J.S., Ferguson, L.R. & Alpert, R. Mother-child interaction and the socialization process. Child Development, 1967,38,365-414.
- Hilton, I. Differences in the behavior of mothers toward first and later born children. Journal of Personality and Social Psychology, 1967,7,282-290.
- Hilton, T.L. Career decision making. Journal of Counseling Psychology, 1962,9,291-298.
- Hilton, T.L. & Berglund, G.W. Sex differences in mathematics achievement - a longitudinal study. Educational Testing Service Research Bulletin, 1971. (unpublished)
- Hodge, R.W., Siegel, P.M. & Rossi, P.H. Occupational prestige in the United States, 1925-1963. The American Journal of Sociology, 1964, 70(3),286-302.
- Hoffman, L.W. Early childhood experiences and women's achievement motives. Journal of Social Issues, 1972,28,157-176.
- Hoffman, L.W. Fear of success in males and females: 1965 and 1972. Journal of Consulting and Clinical Psychology, 1974,42,353-358.
- Holland, J.L. Prediction of scholastic success for a high aptitude sample. Scholastic Social, 1958,86,290-293.
- Holland, J.L. A theory of vocational choice. Journal of Counseling Psychology, 1959,6,35-45.
- Holland, J.L. The prediction of college grades from the California Psychological Inventory and the Scholastic Aptitude Test. Journal of Educational Psychology, 1959,50,135-142.
- Holland, J.L. The prediction of college grades from personality and aptitude variables. Journal of Educational Psychology, 1960,51,245-254.
- Holland, J.L. Creative and academic performance among talented adolescents. Journal of Educational Psychology, 1961,52,136-147.
- Holland J.L. Some exploration of a theory of vocational choice: One and two year longitudinal studies. Psychological Monographs, 1962, 76(26, Whole No. 545).
- Holland, J.L. Making vocational choices: A theory of careers. Englewood Cliffs, New Jersey: Prentice-Hall, 1973.
- Holland, J.L., Astin, A.W. Some prediction of the academic, artistic, scientific, and social achievement of undergraduate of superior scholastic aptitude. Journal of Educational Psychology, 1962,53(3), 132-143.

Horner, M.S. Femininity and successful achievement: A basic inconsistency. In J.M. Bardwick, E.M. Douvan, M.S. Horner & D. Gutmann (eds), Feminine personality and conflict. Belmont, California: Brooks-Colk, 1970.

Horner, S. Toward an understanding of achievement-related conflicts in women. Journal of Social Issues, 1972,28:2,157-175.

Horner, S. The measurement and behavioral implications of fear of success in women. Ph.D. dissertation, unpublished. University of Michigan, 1968.

Kagan, J. & Kogan, N. Individuality and cognitive performance. In P.H. Mussen (ed), Carmichael's manual of child psychology. Vol 1, New York: Wiley, 1970.

Kagan, J. & Moss, M. Birth to maturity: A study in psychological development. New York: Wiley, 1962.

Karmon, F.J. Women: Personal and environmental factors in role identification and career choice. Doctoral dissertation, University of California, 1972. Dissertation Abstracts International, 1972,33,1440A (University Microfilms No. 72-25-789).

Kimball, M. Women and success - a basic conflict? In M. Stevenson (ed), Women in Canada. Toronto: New Press, 1973.

Komorowsky, M. Cultural contradictions and sex roles: The masculine case. American Journal of Sociology, 1973,78,873-884.

Kruger, S.F. N-Ach and perceived parental childrearing attitudes of career women and homemakers. Journal of Vocational Behavior, 1972, 2,419-432.

Lesser, G.S., Krawitz, R. & Packard, R. Experimental arousal of achievement motivation in adolescent girls. Journal of Abnormal and Social Psychology, 1963,66,59-66.

Lipman-Blumen, J., Leavit, H.J., Patterson, K.J., Bies, R.J. & Handley-Isaksen, A. A model of direct and relational achieving styles. In Leslie J. Fyans, Jr. (ed), Achievement motivation: Recent trends in theory and research. New York: Blemun Press, 1980.

Maccoby, E. Women's intellect. In S.M. Farber & R.H. Wilson (eds), The potential of women. New York: McGraw-Hill, 1963.

E.E. Maccoby (ed), The development of sex differences. Stanford, California: Stanford University Press, 1966.

Maccoby, E.E. & Jacklin, C.N. The psychology of sex differences. Stanford, California: Stanford University Press, 1975.

Mahone, C.H. Fear of failure and unrealistic vocational aspiration. Unpublished doctoral dissertation, University of Michigan, 1958.

Mannes, M. The problems of creative women. In S.M. Farber & R.H.L. Wilson (eds), The potential of woman. New York: McGraw-Hill, 1963, pp. 116-130.

Mason, E.P., Adams, H.L. & Blood, D.F. Personality characteristics of gifted college freshmen. Psychological Schools, 1966,3(4),360-365.

Matthews, E. & Tiedman, D.V. Attitudes toward career and marriage and development of life style in young women. Journal of Counseling Psychology, 1964,11,375-384.

McClain, E.W. & Andrews, H.B. Self actualization among extremely superior students. Journal of College Studies, 1972,13(6),505-510.

McClelland, D.C., Atkinson, J.W., Clark, R.A. & Lowell, E. The achievement motive. New York: Appleton-Century-Crofts, 1953.

Mednick, M.T., Tangri, S.S. & Hoffman, L.W. Women: Social psychological perspectives on achievement. New York: Holt, Rinehart & Winston, 1975.

Mednick, M.T., Weissman, H.J. The psychology of women - selected topics. In M.R. Rosenzweig & L.W. Porter (eds), Annual reviews of psychology, Palo Alto, California: Annual Reviews Inc., 1975.

Meyer, W.J. & Thompson, G.G. Sex differences in distribution of teacher approval and disapproval among sixth grade children. Journal of Educational Psychology, 1956,47,385-297.

Minton, C., Kagan, J. & Levine, J.A. Maternal control and obedience in the two-year-old. Child Development, 1971,42,1873-1894.

Monahan, L., Kuhn, D. & Shaser, P. Intrapsychic versus cultural explanations of the fear of success motive. Journal of Personality and Social Psychology, 1974,29,60-64.

Moos, R.H., DeYoung, A.J. & VanDort, B. Differential impact of university student living groups. Research in Higher Education, 1976, 5,67-82.

Moos, R.H. & Gerst, M. The University Residence Environment Scale Manual. Palo Alto, California: Consulting Psychologists Press, 1974.

Moos, R.H. & Moos, B.S. A typology of family social environments. Family Process, 1976,15(4),357-371.

Moos, R.H., VanDort, B., Smail, P. & DeYoung, A.J. A typology of university student living groups. Journal of Educational Psychology, 1975,67(3),359-367.

Moss, H.A. & Kagan, J. The stability of achievement and recognition seeking behavior from childhood to adulthood. Journal of Abnormal and Social Psychology, 1961,62,543-552.

Nagely, D.L. Traditional and pioneer working mothers. Journal of Vocational Behavior, 1971,1,331-341.

Newcomb, T.M. Student peer group influence. In N. Sanford (ed), The American college: A psychological and social interpretation of the higher learning. New York: Wiley, 1962, pp. 469-488

Newcomb, T.M. Growing up in college. Journal of Higher Education, 1969,40(7),577-579.

Nichols, J.G. Causal attributions and other achievement-related cognitions: Effects of task outcome, attainment value and sex. Journal of Personality and Social Psychology, 1975,31,379-389.

Nichols, J.G. A re-examination of boy's and girl's causal attributions for success and failure based on New Zealand data. In L.J. Fyans (ed), Achievement motivation: Recent trends in theory and research, New York: Plenum Press, 1980.

Oetzel, R.M. The relationship between sex role acceptance and cognitive abilities. Unpublished master's thesis. Stanford University, 1961.

O'Leary, V.E. Some attitudinal barriers to occupational aspirations in women. Psychology Bulletin, 1974,81,809-826.

Oppenheimer, V.K. The sex labeling of jobs. Industrial Relations, Vol. 7(3), May, 1968.

Osipow, S.H. Theories of career development. New York: Appleton-Century-Crofts, 1968.

Parsons, J.E. & Goff, S.B. Achievement motivation and values: An alternative perspective. In L. Fyans (ed), Achievement motivation: Recent trends in theory and research. New York: Plenum Press, 1980.

Plank, E.H. & Plank, R. Emotional components in arithmetic learning as seen through autobiographies. In R.S. Eissler, et al (eds), The psychoanalytic study of the child. New York: International Universities Press, 1954, Vol. 9.

Psathas, G. Toward a theory of occupational choice for women. Sociology and Social Research, 1968,52,253-268.

Puryear, G.R. & Mednick, M.S. Black military affective attachment and the fear of success in black college women. Journal of Consulting and Clinical Psychology, 1974,42,263-266.

Rand, L.M. Masculinity or femininity? Differentiating career-oriented and homemaking-oriented college freshman women. Journal of Consulting Psychology, 1968,15,444-450.

Rand, L.M. & Miller, A.L. A developmental cross-sectioning of women's careers and marriage attitudes and life plans. Journal of Vocational Behavior, 1972,2,317-331.

Raynor, J.O. Effects of achievement motivation and future orientation on level of performance. In J.W. Atkinson & J.O. Raynor (eds), Motivation and achievement, New York: V.H. Winston & Sons, Inc., 1974.

Reiss, A.J. Occupations and social status. New York: The Free Press, 1961, pp.263-275.

Roe, A. Personality structure and occupational behavior. In H. Borrow (ed), Man in a world at work. Boston, Mass.: Houghton Mifflin, 1964.

Roe, A. The psychology of occupations. New York: Wiley, 1956.

Rooney, G.S. Focus on life roles: An alternative approach to career and achievement research. Paper presented at A.P.A. annual meeting, Los Angeles, 1981.

Rosenberg, M. Occupations and values. Glencoe, Ill.: Free Press, 1957.

Rossi, A.S. Barriers to the career choice of engineering, medicine, or science among American women. In J.A. Mattfeld & C.G. Van Aken (eds), Women and the scientific professions. Cambridge, MA: MIT Press, 1965, pp. 51-125.

Rothbart, M.K. Birth order and mother-child interaction in an achievement situation. Journal of Personality and Social Psychology, 1971, 17,113-120.

Rubovits, P. Early experience and the achieving orientations of American middle-class girls. In M. Maehr & W. Stallings (eds), Culture, child, and school: Sociocultural influences on learning. Monterey, Calif.: Brooks/Cole Publishing Co., 1975.

Salili, F. Achievement and vocational behavior of women in Iran: social and psychological study. In L.J. Fyans (ed), Recent trends in theory and research. New York: Plenum Press, 1980.

N. Sanford (ed), The American college. New York: Wiley, 1961.

Sarason, S.B., et al. Anxiety in elementary school children. New York: John Wiley & Sons, 1960.

Sarason, S.B., Hill, P.T. & Zimbardo, P.G. A longitudinal study of the relation of test anxiety to performance on intelligence and achievement tests. Monographs of the Society for Research in Child Development, 1964,29,serial no. 98.

Sears, R.R., Rau, L. & Alpert, R. Identification and child rearing. Stanford University Press, 1965.

Serbin, L.A. O'Leary, K.D. Kent, R.N. & Tonick, I.J. A comparison of teacher response to the preacademic and problem behavior of boys and girls. Child Development, 1973,44,796-804.

Shaw, M.C. & Dutton, B. The use of the parent attitude research inventory with the parents of bright academic underachievers. Journal of Educational Psychology, 1962,53,203-208.

Smith, C.P. The origin and expression of ach-related motives in children. In C.P. Smith (ed), Ach-related motives in children. New York: Russell Sage Foundation, 1969, pp. 102-147.

Spence, J.T. & Helmreich, R. Who likes competent women? Competence sex role congruence of interests and subjects attitudes toward women as determinants of interpersonal attraction. Journal of Applied Social Psychology, 1972,2,197-213.

Spence, J.T., Helmreich, R.L., Stapp, J. Ratings of self and peers on sex role attributes and their relation to self esteem and conceptions of masculinity and femininity. Journal of Personality and Social Psychology, 1975,32(1),29-39

Stein, A.H. & Bailey, M.M. The socialization of achievement orientation in females. Psychological Bulletin, 1973,80,345-366.

Strong, E.K. Vocational interests in men and women. Stanford California: Stanford University Press, 1943.

Super, D.E. A theory of vocational development. American Psychologist, 1953,8,185-190.

Super, D.E. Vocational adjustment: Implementing a self concept. Occupations, 1951,30,88-92.

Sutton-Smith, B., Crandall, V.J. & Roberts, J.M. Achievement and strategic competence. Paper presented at the Eastern Psychological Association, April, 1964.

Tangri, S.S. Determinants of occupational role innovation among college women. Journal of Social Issues, 1972,28(2),177-199.

Tasch, R.J. The role of the father in the family. Journal of Experimental Education, 1952,20,319-361.

Thistlethwaite, D.L. Fields of study and development of motivation to seek advanced training. Journal of Educational Psychology, 1962, 53,53-64.

Tiedman, D.V., O'Hara, R.P. & Matthews, E. Position choices and careers: Elements of a theory. (Harvard Studies in Career Development, No. 8). Cambridge, Mass.: Harvard Graduate School of Education, 1958.

Tyler, B.B. Expectancy for eventual success as a factor in problem solving behavior. Journal of Educational Psychology, 1958,49,166-172.

Tyler, L. The antecedents of two varieties of interest patterns. Genetic Psychology Monographs, 1964,70,177-227.

Veroff, J. Social comparison and the development of achievement motivation. In C. Smith (ed), Achievement related motives in children. New York: Russell Sage Foundation, 1969.

Veroff, J., Wilcox, S. & Atkinson, J.W. The achievement motives in high school and college age women. Journal of Abnormal and Social Psychology, 1953,48,108-119.

Ward, S.W. & Mausner, B. Behavioral and fantasied indicators of avoidance of success in men and women. Journal of Personality, 1973, 41,457-470.

Weiner, B. Achievement motivation as conceptualized by an attribution theorist. In B. Weiner (ed), Achievement motivation and attribution theory. New Jersey: General Learning Press, 1974.

Weiner, B. The effects of unsatisfied achievement motivation in persistence and subsequent performance. Journal of Personality, 1965,33,428-442.

Weiner, B. Theories of motivation. Chicago: Markham Press, 1972.

Weiner, B., Frieze, I., Kukla, A., Reed, L., Rest, S. & Rosenbaum, R.M. Perceiving the causes of success and failure. New York: General Learning Press Module, 1971.

Weston, P. & Mednick, M.T.S. Race, social class and the motive to avoid success in women. Journal of Cross Cultural Psychology, 1970, 1,284-291.

Winterbottom, M.R. The relation of need for achievement to learning experiences in independence and mastery. In J.W. Atkinson (ed), Motives on fantasy, action and society. Princeton: D. VanNostrand Co., 1958, pp. 453-478.

Wolkon, K.A. Pioneer versus traditional: two distinct vocational patterns of college alumnae. Journal of Vocational Behavior, 1972, 2,275-282.

APPENDICES

APPENDIX A

INITIAL LETTERS TO ELIGIBLE STUDENTS
FOR HONORS COLLEGE IN FALL, 1980
AND
HONORS-FLOOR DORM OPTION

On the basis of your distinguished academic credentials I am pleased to invite you to become a member of the Honors College. The major benefit of Honors College membership is that it allows you to utilize the full academic resources of the University to design a program of study that specifically reflects your personal abilities, needs and aspirations. You soon will receive by separate mail a copy of the Honors College Handbook which describes in some detail how such programs are implemented. It also discusses the other privileges of Honors College membership.

Like all Michigan State students, Honors College members may either declare a major when they enter the University or they may defer that decision until they have had time to explore several alternatives. Members who have declared majors are assigned to a faculty Honors advisor in the department of their major; students who have not yet decided on a major are counseled by an Honors College staff advisor here in Eustace Hall.

Please use the enclosed postcard to inform us of your decision. If you need further information, do not hesitate to write to me directly. I hope that you will decide to join us in the fall. We look forward to working with you in the development of an enriched academic program and to sharing with you the satisfactions inherent in that undertaking.

Cordially,

Director, The Honors College
Professor of English

TO: All Fall 1981 Honors College Freshmen

FROM: Director

SUBJECT: HONORS HOUSING

In the Fall of 1981, there will again be a special housing option for Honors College freshmen who would like to live on "quiet floors" reserved for members of the Honors College. We have arranged through the Residence Hall Programs office to have two "houses" in each of two residence halls designated as Honors College units. Each of the houses, one for men and one for women on a single floor in each hall, will accommodate about fifty students. Some of the spaces in these houses will be reserved for returning Honors students who are currently living on the Honors College Floor in Case Hall.

The idea for establishing Honors College living quarters was generated by numerous inquiries from Honors College students who had felt a need for a more study-oriented living situation than is sometimes found in the residence halls around campus. Many Honors College students had also told us they would like to live in proximity to students taking Honors programs of study similar to theirs and to have better opportunities to meet Honors students in majors other than their own. It has been our hope that the units set aside for Honors College members would be characterized by a serious attitude toward study and an atmosphere fostering lively social and intellectual exchanges. From all reports, the Honors students involved in the project this year have created just this kind of living situation. The success of this undertaking will continue to depend on the cooperation of the individuals who elect to live on the Honors quiet floors. We believe the opportunity to take part in this experience is an attractive one and invite you to participate. Your decision should be made thoughtfully and should be entirely your own.

As the residence hall space designated for Honors College students is limited, it is important that you indicate your preference for Honors housing at the same time you accept your invitation to membership in the Honors College. Because the demand for MSU residence hall accommodations is very great in the Fall, the Honors freshmen will be subject to the same rate of tripling in rooms as other students if necessary. We anticipate that the requests to live on these floors will exceed available space. In the event all requests cannot be met, the names of those not assigned to a room in an Honors house will be put on a waiting list. If vacancies occur before September or during the year, students on this list will be contacted about the new openings. (NOTE: The Honors Housing option is not available to students who are enrolled in James Madison or Lyman Briggs College, which are already residential in nature.)

To notify us that you would like to be reserved a place on one of the Honors College floors, you have only to check the Honors Housing option on the enclosed card at the same time that you indicate your acceptance of the invitation to membership. We will let you know by letter whether

HONORS HOUSING

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your request can be accommodated. Whether or not you elect the Honors housing, you must follow the regular housing application procedures according to your instructions from the Office of Admissions. Please note that if you are checking the Honors Housing option, your roommate preference on the housing application must also be an Honors College member.

APPENDIX B

LETTER TO STUDENTS ABOUT
HONORS COLLEGE RESEARCH PROJECT

TO: Honors College Floor Residents

FROM: Director

SUBJECT: Honors College Study

As you know the Honors Floor in Case Hall marks a new departure for the Honors College. We would like to learn as much as possible about the impact of this new housing option and other aspects of the University environment upon students like yourselves.

Accordingly, The Honors College, in cooperation with Dr. Gwendolyn Norrell, Acting Director of the Counseling Center, is sponsoring a study designed to help us understand the kinds of change and growth our students undergo during their college years. The project was conceived primarily out of the recognition that one of the urgent needs of higher education is to understand more about students and how we can better help them. You can render an invaluable service to The Honors College and to MSU in helping us to carry through this project. Unfortunately there are no rewards, other than the satisfaction that comes from knowing that you are helping us to create a stronger, more responsive university.

The first phase of this study, which will take about an hour and a half of your time, will take the form of a questionnaire to be administered at the following two places and times:

Wednesday, October 8 7:30 p.m. Conrad Auditorium

Thursday, October 9 7:30 p.m. B-108 Wells Hall

The questionnaire, I should note, does not measure knowledge or aptitude. Rather, it is designed to tell us and you things about yourself that ought to be interesting for you to know. Naturally, all results will remain strictly confidential, though Dr. Norrell will be happy to discuss your responses with you if you wish. Later on we will be asking you to help us in still other ways.

Please check the appropriate box for the session that best fits in with your schedule, and return this sheet to Mrs. Karen Donnelly, The Honors College, Eustace Hall. Dr. Norrell will answer any questions you may have when she meets with you.

APPENDIX C

TYPES OF CONTACT AND NON-RESPONSE RATES
TO RESEARCH PROJECT, FALL, 1980

Group	Total Population	Total Non- respondents *	Received Letters	Declined Participation	Agreed to Partic- pation but did not come to MSU	Left or never came to MSU
A-Accepted Honors College and Honors- floor Option	87	18	87	8	0	0
B-Accepted Honors College but not Honors-floor Option	180	92	156	3	40	3
C-Declined Honors College	78	58	66	4	14	4

* Non-respondent = Non-completion of at least one instrument

APPENDIX D

RESPONSE RATES ON COMPLETED INSTRUMENTS: HCFF QUESTIONNAIRE, FAMILY ENVIRONMENT SCALE, AND CALIFORNIA PSYCHOLOGICAL INVENTORY

Group	Total in Population	HCFF Questionnaire	FES	CPI
A-Accepted Honors College and Honors- floor Option	87	67	67	51
B-Accepted Honors College but not Honors-floor Option	180	85	80	63
C-Declined Honors College	78	20	19	14
Totals	345	172	166	128

APPENDIX E

FAMILY ENVIRONMENT SCALE

1. Family members really help and support one another.
2. Family members often keep their feelings to themselves.
3. We fight a lot in our family.
4. We don't do things on our own very often in our family.
5. We feel it is important to be the best at whatever you do.
6. We often talk about political and social problems.
7. We spend most weekends and evenings at home.
8. Family members attend church, synagogue, or Sunday School fairly often.
9. Activities in our family are pretty carefully planned.
10. Family members are rarely ordered around.
11. We often seem to be killing time at home.
12. We say anything we want to around home.
13. Family members rarely become openly angry.
14. In our family, we are strongly encouraged to be independent.
15. Getting ahead in life is very important in our family.
16. We rarely go to lectures, plays or concerts.
17. Friends often come over for dinner or to visit.
18. We don't say prayers in our family.
19. We are generally very neat and orderly.
20. There are very few rules to follow in our family.
21. We put a lot of energy into what we do at home.
22. It's hard to "blow off steam" at home without upsetting somebody.
23. Family members sometimes get so angry they throw things.
24. We think things out for ourselves in our family.
25. How much money a person makes is not very important to us.
26. Learning about new and different things is very important to us.
27. Nobody in our family is active in sports, Little League, bowling, etc.
28. We often talk about the religious meaning of Christmas, Passover, or other holidays.
29. It's often hard to find things when you need them in our household.
30. There is one family member who makes most of the decisions.
31. There is a feeling of togetherness in our family.
32. We tell each other about our personal problems.
33. Family members hardly ever lose their tempers.
34. We come and go as we want to in our family.
35. We believe in competition and "may the best man win."
36. We are not that interested in cultural activities.
37. We often go to movies, sports events, camping, etc.
38. We don't believe in heaven or hell.
39. Being on time is very important in our family.
40. There are set ways of doing things at home.
41. We rarely volunteer when something has to be done at home.
42. If we feel like doing something on the spur of the moment we often just pick up and go.
43. Family members often criticize each other.

APPENDIX E (con't.)

44. There is very little privacy in our family.
45. We always strive to do things just a little better the next time.
46. We rarely have intellectual discussions.
47. Everyone in our family has a hobby or two.
48. Family members have strict ideas about what is right and wrong.
49. People change their minds often in our family.
50. There is a strong emphasis on following rules in our family.
51. Family members really back each other up.
52. Someone usually gets upset if you complain in our family.
53. Family members sometimes hit each other.
54. Family members almost always rely on themselves when a problem comes up.
55. Family members rarely worry about job promotions, schedules, grades, etc.
56. Someone in our family plays a musical instrument.
57. Family members are not very involved in recreational activities outside work or school.
58. We believe there are some things you just have to take on faith.
59. Family members make sure their rooms are neat.
60. Everyone has an equal say in family decisions.
61. There is very little group spirit in our family.
62. Money and paying bills is openly talked about in our family.
63. If there's a disagreement in our family, we try hard to smooth things over and keep the peace.
64. Family members strongly encourage each other to stand up for their rights.
65. In our family, we don't try that hard to succeed.
66. Family members often go to the library.
67. Family members sometimes attend courses or take lessons for some hobby or interest (outside of school).
68. In our family each person has different ideas about what is right and wrong.
69. Each person's duties are clearly defined in our family.
70. We can do whatever we want to in our family.
71. We really get along well with each other.
72. We are usually careful about what we say to each other.
73. Family members often try to one-up or out-do each other.
74. It's hard to be by yourself without hurting someone's feelings in our household.
75. "Work before play" is the rule in our family.
76. Watching T.V. is more important than reading in our family.
77. Family members go out a lot.
78. The Bible is a very important book in our home.
79. Money is not handled very carefully in our family.
80. Rules are pretty inflexible in our household.
81. There is plenty of time and attention for everyone in our family.
82. There are a lot of spontaneous discussions in our family.
83. In our family, we believe you don't ever get anywhere by raising your voice.
84. We are not really encouraged to speak up for ourselves in our family.
85. Family members are often compared with others as to how well they are doing at work or school.
86. Family members really like music, art and literature.
87. Our main form of entertainment is watching T.V. or listening to the radio.

APPENDIX E (con't.)

- 88. Family members believe that if you sin you will be punished.
- 89. Dishes are usually done immediately after eating.
- 90. You can't get away with much in our family.

APPENDIX F

CODING CRITERIA
FOR CAREER DECIDEDNESS

1. Undecided about career choice.
Reserved for students with very little career direction, this category included vague responses such as "don't know", "haven't thought about it", "I have no idea".
2. Mostly undecided with a few options.
This category was designated for a student who showed some career direction but not much. Included were those responses where the student indicated an interest in a major but making little reference to the career aspects such as "something in anthropology" or "I'm interested in the field of business or medicine but don't really know what else I'd like".
3. Average career decidedness.
This category includes responses whereby the student indicates that he/she is considering several career choices which appear equally well-defined but is not sure among two or three choices which appeals more. A typical response might be "I've thought of being a doctor, a lawyer or a professor but can't decide." or "Probably be an engineer or business administrator or an accountant. I'm waiting to see what my classes are like".
4. Mostly decided with a few doubts.
This category is composed of responses that appear decided in a career direction, having narrowed the choice down to one but contain qualifiers or hesitations such as "if I like it" or "but I'm not sure yet" or "but I might be interested in something else like _____".
5. Decided about career choice.
This category was reserved for responses which seemed to indicate sustained interest or unqualified statements toward a specific career such as "I'm going to be a doctor and have wanted to be one since I was eight." Included also were responses which indicate the student considered several options but is now definitely decided on one.

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