

THE EFFECT OF GENDER-ROLE STEREOTYPING  
ON THE CAREER ASPIRATIONS AND EXPECTATIONS  
OF PRE-ADOLESCENT CHILDREN OF  
HIGH INTELLECTUAL ABILITY

by

CARILLON RUTH CAMERON PURVIS

B.A., The University of Alberta, 1967

A Thesis Submitted to the Faculty of Education  
of The University of Lethbridge in Partial Fulfillment  
of the  
Requirements for the Degree  
MASTER OF EDUCATION

LETHBRIDGE, ALBERTA  
1987

## Abstract

Although the movement of women into the Canadian labor force has been increasing steadily over the past three decades, the number of women occupying positions of power, prestige and leadership within their fields remains low in comparison to that of men. In theory, virtually all careers and all levels within those careers should be available to both males and females, but this availability is not always perceived to be real. The desire to reveal why this is so provides the impetus for this study.

Career patterns are influenced by a variety of forces, one of which is gender-role stereotypes. A greater understanding of the role these stereotypes play in career aspirations is the goal of this study. One hundred male and female pre-adolescent students of high and average intellectual ability were surveyed by means of a questionnaire to determine the effect of gender-role stereotypes on their career aspirations and expectations. Correlations, analyses of variance, and qualitative data provided the statistical and descriptive information for interpretation.

The principal finding of this study was that the influence of gender-role stereotypes on pre-adolescent children was confirmed, even across ability groups. Stereotypical attitudes were unrelated to intellectual ability, as both high and average ability groups conformed to traditional attitudes exhibited toward the sexes. However, there did seem to be a trend towards a more androgynous attitude among the females than among the males, particularly the high achieving males. High ability males showed a trend towards exaggerated stereotypical attitudes in comparison to the other subject groups. Furthermore,

high ability students generally had more to say and exhibited more confidence (particularly the high ability males) in their responses.

This study may provide an increase in awareness and understanding of any real or perceived barriers to achievement and thus eventually lead to greater opportunities and personal fulfillment for both males and females.


## Acknowledgements

The author would like to express sincere gratitude to Dr. Myrna Greene for her time, patience and guidance throughout the execution of this thesis, and for her continual example of professionalism throughout the days of my Master's Degree. Thanks must also be extended to the members of the Scholarly Works Evaluation Committee: Dr. Dale Burnett, Dr. Richard Butt, Dr. David Smith, and Dr. Mel Fisher for their time, understanding, and guidance, and to Dr. Don Read for his "breath of fresh air" which allowed me to explore new depths. I cannot forget the intellectual and emotional support of my colleagues: Jennifer Smith, Faye Boer, Pauline Hoskin, Paul Hawryluk, Irwin Warkentin, Wynne Edwards, Ron Taylor, Roger Maquell, and John Martini; nor the understanding and freedom given to me by Duncan and Jane. Finally, to Bryan who was always there, a special thanks.

## TABLE OF CONTENTS

	PAGE
List of Tables	ix
List of Figures	x
<b>I. THE PROBLEM</b>	<b>1</b>
Introduction	1
Rationale	2
Purpose of the Study	2
Definition of Terms	3
Limitations of the Study	4
Assumptions	6
<b>II. REVIEW OF THE LITERATURE</b>	<b>7</b>
The Existence of Behavioral Differences Between Males and Females in Occupational Realms	7
Research Related to the Existence of Behavioral Differences Between Males and Females	10
Biological Explanations	10
Cultural/Social/Environmental Explanations	13
Development of Gender-role Stereotypes	16
Children's Understanding of Work Roles	18
The Relationship Between the Career Patterns of Parents and Children's Career Choice	20

Intellectual Ability as a Variable of Gender-Role Stereotyping	20
Aspirations versus Expectations	23
Summary and Study Questions	24
<b>III. METHOD</b>	26
The Sample	26
Selection on the Basis of School	26
Selection on the Basis of Age	26
Selection on the Basis of Ability	27
Consent of the Parents	28
Delineation of Groups	28
The Instrument	29
Validity and Reliability	29
Description of the Instrument	31
Administration of the Instrument	34
Scoring of the Instrument	34
Quantitative Scoring	35
Qualitative Data	40
<b>IV. RESULTS</b>	41
Analysis of the Data	41
Analysis of Femininity Scores	41
Analysis of Other Data	64
Qualitative Data	81



V. MAJOR FINDINGS

Influence of Gender-Role Stereotypes	93
Gender-Role Stereotypes and Ability	93
Gender-Role Stereotypes and Sex	94
Measured Abilities and Career Choice	95
Career Aspirations Related to Expectations	96
Career Choices of Subjects and Careers of Parents	96
Other Variables Affecting Childrens' Career Choice	96

VI. DISCUSSION 98

Bibliography	101
--------------	-----

Appendices	106
------------	-----


Appendix A. Parental Consent Form	106
-----------------------------------	-----

Appendix B. Questionnaire	107
---------------------------	-----

Appendix C. Scoring Key for "Reasons" Questions	115
---	-----

Appendix D. Scoring Key for "Strength of Feelings" Question	116
---	-----

Appendix E. Scoring Key for "Motivators" Question	117
---	-----



## LIST OF TABLES

TABLE		PAGE
1	Description of the Final Sample	30
2	Mean Femininity Score for Each Ability Group	45
3	Correlations Among Variables	46
4	Analysis of Variance: Sex x Ability x "Reasons" Question	48
5	Analysis of Variance: Sex x Ability x "Strength of Feelings" Question	48
6	Analysis of Variance: Sex x Ability x "Motivators" Question	49
7	Analysis of Variance: Sex x Ability x Total Femininity Score	49
8	Knowledge and Wisdom as a Motivator	68
9	Career Aspirations Versus Career Expectations of Ability Groups	69
10	Career Aspirational Levels of Subject Groups Versus Careers of Parents	77
11	Work Status of Mothers and the Career Aspirations of High Achieving Females	79
12	Work Status of Mothers and the Career Aspirations of High Achieving Males	80



## LIST OF FIGURES

FIGURE		PAGE
1	Summary of Scoring Procedures for "Reasons" Questions	36
2	Summary of Scoring Procedures for "Strength of Feelings" Question	38
3	Summary of Scoring Procedures for "Motivators" Question	39
4	Femininity Scores for Each Subject Group for "Reasons" Questions	43
5	Femininity Scores for Each Subject Group for "Strength of Feelings" Question	43
6	Femininity Scores for Each Subject Group for "Motivators" Question	44
7	Total Femininity Scores for Each Subject Group	44
8	Mean Femininity Scores "Reasons" Question	50
9	Mean Femininity Scores "Strength of Feelings" Question	51
10	Mean Femininity Scores "Motivators" Question	52
11	Mean Total Femininity Scores	53
12	Motivators for High Achieving Females	55
13	Motivators for Average Achieving Females	56
14	Motivators for High Achieving Males	57
15	Motivators for Average Achieving Males	58
16	Motivators for High Achieving Females	60
17	Motivators for High Achieving Males	61
18	A Comparison of the Main Motivators of High and Average Achieving Females	62

19	A Comparison of the Main Motivators of High Ability Females and Males	63
20	Career Aspirations of Ability Groups	65
21	Career Aspirations of Ability Groups with the Elimination of "Sports" as a Career Category	67
22	"Typical Day" Responses of High Ability Females	72
23	"Typical Day" Responses of High Ability Males	73
24	"Typical Day" Responses of Average Ability Females	74
25	"Typical Day" Responses of Average Ability Males	75

## CHAPTER I. THE PROBLEM

### Introduction

According to Statistics Canada (1986), the movement of women into the Canadian labor force has been increasing steadily over the past three decades. In contrast, the number of women occupying positions of power, prestige and leadership within their fields remains low (Bassett, 1985). In theory, virtually all careers and all levels within those careers should be available to both males and females, but this availability is not always perceived as being realistic. This perception arises, in part, from the influence of gender-role stereotypes on the attitudes of both males and females towards appropriate behaviors, particularly in the realm of occupational choices. Although it is difficult to assess the extent to which this occurs, a greater knowledge of the role stereotypes play in career aspirations may lead to a better understanding of the reasons for the lower numbers of women in positions of power, leadership and prestige. Intellectually gifted-women perhaps exemplify the inconsistency between ability and achievement to the greatest extent, as their occupational potential, inferred from intellectual ability, is often not realized. Their particular problem is exaggerated as the careers usually considered appropriate for individuals with higher intellectual ability are often stereotypically male-dominated fields. A deeper understanding of this relationship between gender-role stereotypes, intellectual ability, and occupational achievement is the goal of this study.

### Rationale

The present unequal distribution of males and females in positions demanding high levels of leadership and receiving high levels of remuneration has persisted over the years, with few signs of significant change. It is hoped, for the benefit of society and individuals alike, that today's youth will not feel bound by the real or perceived social barriers of the past, and will be free to pursue any occupational path that may be within their abilities and aptitudes. Many studies have shown that children's career aspirations are shaped to a great extent by gender-role stereotyping (Kerr, 1985; Gottfredson, 1981; Iglitzen, 1972), but few have examined the relationship with the added variable of intellectual ability. It can be assumed that those students possessing high academic and intellectual ability will generally be the most capable and successful in high level positions, and will contribute to society through their intellectual abilities. They will most often progress to a high level educationally, and occupationally as well. In order for females to realize their potential in this regard, however, a deeper understanding of the motivation behind their career aspirations and expectations is necessary. The first step towards understanding is awareness, and this study arises from my desire to become aware of, and to understand more fully, the restrictions that may exist to the career choices of females, particularly those of high intellectual ability.

### Purpose of the Study

The purpose of this study is to examine the perceptions of pre-adolescent children with regard to occupational choices and the extent to which their aspirations and expectations are influenced by traditional male/female stereotypes, and by intellectual ability. It is hoped that an increase in awareness and understanding of any real or perceived barriers to achievement will lead to greater opportunities and personal fulfillment for both males and females.

### Definition of Terms

In considering differences between males and females, there is often a differentiation made between two sets of influences: the biological, which consists of genetic and physiological factors, and the environmental, including learning, social and cultural determinants. In many discussions and much of the research considering differences between the sexes, the term sex has been used to refer sometimes to the biological aspect of an individual, and sometimes to the characteristics which develop as a result of cultural learning. Gender has also been used interchangeably in a similar manner. In order to clarify the terminology, Greenglass (1982) defined sex as a person's biological status, and gender as a person's learned or cultural status. Certain behaviors result from an individual's biological status as a male or a female. For example, menstruation, pregnancy and nursing are sex-related female behaviors; the production of sperm and ejaculation are sex-related male behaviors. On the other hand, Greenglass (1982) defines gender and gender-roles as being culturally assigned to an individual on the basis of sex. Gender refers to an individual's status as feminine, masculine or androgynous; and gender-roles includes the prescribed behaviors, attitudes and characteristics culturally associated with a particular gender. The attributes associated with sex are therefore biologically assigned; those associated with gender are the result of learning in accordance with particular prescriptions of a culture.

Unger (1979) also describes a much expanded definition of the term sex, and includes the term gender to refer to the traits and behaviors considered appropriate to members of each sexual category. Unger and Denmark (cited in Greenglass, 1982) suggest that generally, differences between males and females can be said to be due to sex and not to gender when they meet the following criteria: the sex difference occurs cross-culturally, shows species continuity, can be manipulated biochemically, and appears early in development. This study will use the terms sex and gender in a manner consistent with

Greenglass' and Unger's definitions.

The perpetration of certain attitudes or behavioral bias against certain individuals because of their membership in a specific sexual category is referred to as "sex-role stereotyping" (Zegman, 1979). Because of the adoption of Unger's (1979) and Greenglass's (1982) definitions of gender and sex, this term will be modified in this study to read gender-role stereotyping. These stereotypes are resistant to change and are often approved of and considered ideal (Cooley, Chauvin & Karnes, 1984).

The term intellectual ability in this study refers to the capacity to acquire knowledge. It encompasses the genetic, environmental, motivational and cultural aspects of an individual's makeup. Anastasi (1982) defines intellectual ability as being

not a single unitary ability but a composite of several functions. The term is commonly used to cover that combination of abilities required for survival and advancement within a particular culture (p. 348).

Intellectual ability in this study includes the innate component, not in isolation but in conjunction with the influence of culture and environment.

#### Limitations of the Study

It is difficult to measure intangible aspects of human behavior such as the effect of culture and environment, particularly in relation to the differences experienced by males and females. Many factors may and do contribute to the global picture of any one human being, including those that are inherited biologically and those that result from the social and cultural environments into which one is born. To separate each of these factors into unique and separate items for the purposes of investigation is a difficult if not insurmountable and inappropriate task. One factor does not exist in isolation from the influence of the others, and the pattern of interrelationships among them may fluctuate with

time and experience. However, the difficulty of examining intangibles should neither prevent nor deter their investigation, but they do provide an awareness that the results of such studies indicate suggestions and trends rather than absolutes. The use of the instruments and methodology chosen for this study are defended on the basis that the information obtained from them will not be regarded as being absolute but helpful in increasing awareness and understanding of a very complex situation. It is in this spirit that this study is undertaken.

Although it is recognized that it is inappropriate to use an achievement score as a single indicator of intellectual ability for diagnostic purposes and placement for suitable educational intervention, its use in delineating groups of differing intellectual ability for this study is appropriate. It is suggested by Newland (1976), that the capacity to achieve is a reasonable indicator of potential success and intellectual ability. He states that "capacity to achieve can be inferred from the extent to which achievement is found to be present" (p.21). Those exhibiting high levels of achievement in school are most likely to be those who would also be capable of high levels of achievement in later life, and although perhaps some students with high ability may be overlooked for the purposes of this study, there are no serious personal or long-lasting educational damages to students that could result from neglect in this study. Intellectual ability as exemplified by actual achievement simply delineates the two groups for this study.

Socio-economic status interacts with intellectual ability in such a way as to affect achievement scores. Children from enriched homes and from intellectually and experientially stimulating environments will generally achieve at a higher level than those students with the same ability but from less enriched environments. Thus, by using achievement scores to select subjects for this study, higher socio-economic levels may be represented to a greater degree among the subjects, particularly those of higher achievement. Although socio-economic status is a consideration, I do not see it as being a

major limitation to this study, as a comparison is being made between achievement groups and the reasons for high and average achievement are not considered in this study. Perhaps further research could explore the effects of stereotypes among members of differing socio-economic classifications.

#### Assumptions

There are several assumptions that underlie this study. They are: (1) that the groups have in fact been differentiated on the basis of intellectual ability; (2) that the students have answered the questionnaire with thought and honesty; and (3) that the questions elicit responses which reflect an indication of the influence of gender-role stereotyping.



## CHAPTER II.

### REVIEW OF THE LITERATURE

The following review of the literature concerning the effect of gender-role stereotypes and intellectual ability on career aspirations and expectations has been divided into several sections. It begins with a discussion of the discrepancies between the numbers of males and females occupying positions of high prestige, leadership and power in occupational realms. Possible reasons why these discrepancies exist are proposed, citing research related to both biological and cultural explanations of behavioral differences between males and females. Gender-role stereotyping is introduced as one of the cultural factors relating to these behavioral differences. Children's understanding of work roles is explored, including the influences of gender-role stereotypes, career patterns of parents, and other variables which may affect children's occupational choices. Finally, a discussion of the possible interaction between intellectual ability and gender-role stereotypes, and of the discrepancies between career aspirations and actual expectations is included.

#### The Existence of Behavioral Differences Between Males and Females in Occupational Realms

Differences in behavior related to gender are particularly evident in occupational realms. As the true composition of careers is often difficult to understand for children and adults alike, one of the forces that guides the career choice of an individual is career stereotyping, or popular images of that occupation. An inherent part of these stereotypes is

the perceived suitability of the career to either males or females, or gender-role stereotyping. There is a great amount of evidence of gender-role stereotyping in the realm of occupations, and the persistence of these stereotypes tends to perpetuate them further. Stereotypes affect both males and females but they appear to be a larger barrier for females than for males. Thus, a discrepancy exists between the number of females in careers of high prestige, power, income, and leadership and the number of males holding similar positions. According to Statistics Canada (1966, 1975, 1980, 1986), the movement of women into the Canadian labor force has been steadily increasing over the past three decades and the female proportion of the labor force has nearly doubled since the early 1950s, but the number of women at the higher levels remains low in comparison to the number of men in those positions. For example, in October, 1986, over 58% of all women employed in Canada worked at clerical, sales and service jobs while only 25% of all employed males worked at these occupations (Statistics Canada, 1986). Further, the 1981 Canada Census reveals that only 6.35% of all general managers and senior executives within the private sector were female (Statistics Canada, 1981). Bassett (1985) suggests that of this percentage, many of those are there because of family connections. This is not to say those who acquire top positions through family ties are incompetent. The difficulty encountered by females in "getting to the top", but their ability to be successful having acquired these positions, exemplifies the type of barrier present in the achievement of the occupational potential of women.

There have recently been changes in traditional gender-role patterns and standards, and according to Statistics Canada (1986), employment growth among women occurred in all occupational categories during the period between 1976-1985. Not only are women finding more encouragement and support to move into the labor force, they are moving into more of the traditionally male-dominated realms as well. In fact, the majority of this growth in the female sector of the labor force occurred in managerial and professional

occupations. Although these figures indicate some infiltration of females into high level occupations, the movement has been slow. Only a handful of women actually have moved into the more powerful positions within their fields. Only one female judge, Bertha Wilson, has ever been appointed to the Supreme Court of Canada; only six women were named to Prime Minister Brian Mulroney's first cabinet of 40 in 1984; and only a few women, such as Betty Hewes, Canadian National's chairman, hold senior positions in major corporations (Bassett, 1985). A similar pattern occurs in the United States. There is only one company listed in Fortune magazine's 1984 list of the five hundred largest American corporations that has a woman chief executive officer, and Katherine Graham of the Washington Post Company admits she received the top position because her family owns a controlling share of the corporation!

The absence of women in the boardrooms cannot be taken as evidence that they are not suited to these positions. Not only have women in demanding occupational positions achieved success, they may have added a dimension to their working environment which would otherwise be lacking. Gilligan (1982) believes that females' greater ability to respond to certain situations with empathy and consideration for others may contribute something to society in general and add a freeing component to males who are locked into traditionally stereotyped reactions. She believes that a diversity in perspective is of benefit to all members of society. Women have something to offer society as females, not just as women playing the role of males. Diversity, in Gilligan's terms, will reflect freedom of choice, not cultural determinism.

Thus, there are discrepancies between the achievement of males and females in the occupational realm. In any field, the percentage of women decreases with movement up the prestige, power, and leadership ladders. Assuming that there may exist an approximately equivalent percentage of women and men who have the ability to perform these jobs, it seems necessary to explore possible explanations for why women are not more strongly

represented in positions of leadership and decision-making. The following section will deal with research relating to these explanations.

### Research Related to the Existence of Behavioral Differences Between Males and Females

It is visually obvious that there are physical differences between males and females. It is also obvious that these physical differences are a result of the biological and genetic make-up of the individual. Psychological and cognitive differences are not as obvious as purely physical differences between the sexes however, and although the differences often manifest themselves in visible behaviors, the interpretation of the causes of these behavioral differences remains open to discussion and to a variety of conclusions.

The following two sections will examine the research that has looked at explanations for the behavioral differences between males and females. The biological explanations will be discussed first, followed by the cultural/social/environmental explanations.

#### Biological Explanations

Some behavioral differences related to sex can naturally be attributed in part to the obvious physical differences between the sexes. In general, males are taller, heavier, and stronger than females, and as a result may tend to occupy positions of employment requiring physical strength and/or other qualities generally characteristic of males. For example, construction work or heavy labor may demand more in a physical sense than many females are capable of performing, and as a result, the majority of females naturally would neither seek out such employment nor be successful at it. However, such generalizations fail to recognize the vast individual differences that occur among males and females, and may exclude the exceptional female who is perhaps capable of performing such activities well and has the desire to do so.

There are also behavioral differences related to the biological sex of the individual, that are not directly related to the obvious physical characteristics of males and females. For example, in a systematic analysis and interpretation of existing research and beliefs regarding differences between males and females, Maccoby and Jacklin (1974) found four behavioral differences when considering males and females on the average, that they considered to be biologically based. First, females have a greater verbal ability than males; second, males out-perform females in visual-spatial ability; third, males are physically more aggressive than females; and fourth, males demonstrate a greater ability in mathematical activities. It must be noted that these differences while compelling, on the average are not really very large.

While the existence of these male-female differences has not generally been controversial, the explanations for them have been. Previous to Maccoby and Jacklin's research (1974), it was generally held that many differences in cognitive abilities were due to sex (biological) factors rather than gender (learned) factors, while the more recent evidence suggests that only the above four differences in cognitive ability can be traced back to sex-related factors only. According to Kolb and Whishaw (1985), there are four different explanations that account for sex-related behavior: (1) differential brain organization, (2) hormonal effects on brain functioning, (3) genetic sex linkage, and (4) differing maturation rates of males and females. I will consider each in turn.

Differential brain organization has been identified in research which demonstrates that cortical lesions affect males and females differently on tests of verbal and spatial skills. This suggests that there could be a difference in brain organization in the two sexes. For example, Inglis and Lawson (cited in Kolb & Whishaw, 1985) report that with neurological patients, a clear sex difference emerged in which males with left hemisphere lesions experienced a decrease in verbal IQ, and males with right hemisphere lesions experienced a decrease in performance IQ. In contrast, females with left hemisphere

lesions experienced a deficit in both verbal and performance IQs whereas females with right hemisphere lesions show no significant reduction in either IQ scale.

Hormones seem to play a part in accounting for sex differences as well. The presence of androgens in the embryo leads to a particular development of certain cortical regions (Benbow, 1986) and preliminary evidence from studies of rats suggests that neonatal castration or ovariectomy may alter cortical growth (Toran-Allerand, 1986).

The genetic make-up of males and females has been linked to some advantage in spatial ability. There is evidence that spatial ability may be carried as a recessive gene on the X chromosome, therefore the chances of females exhibiting the trait is lower than for males (Harris, 1978).

Finally, it is an accepted fact that females attain physical maturity at an earlier age than males, and it has therefore been proposed that the male brain matures more slowly than the female brain. However, Waber (cited in Kolb & Whishaw, 1985) reported that, regardless of sex, early maturing adolescents performed better on tests of verbal ability than on tests of spatial ability, whereas late maturing ones did the opposite. Thus, a slow maturation rate correlates with a spatial advantage and a verbal disadvantage. If this is assumed to be true, then males may show spatial superiority which could be related to a slower maturation rate than that of females.

Although there is good evidence for all of these biological explanations, research also offers alternative suggestions. For example, Signorella (1986) concluded from her research that the frequently observed differences in performance favoring girls and women on verbal tasks and favoring boys on spatial and mathematical tasks was partly a result of the tendency for females to view themselves in stereotypically feminine terms and for males to view themselves in stereotypically masculine terms. In other words, differential cognitive performance between males and females stemmed in part, from an individual's perception of themselves as either masculine or feminine in attitude. For example, those

subjects viewing themselves in stereotypically masculine terms performed better on stereotypically masculine tasks, regardless of whether they were male or female.

Kimura (1985) suggests that it may be individual differences rather than gender differences that produce the majority of the variance in behaviors. She believes that male and female brains are organized differently, and the sex of the individual does affect the way in which the brain operates, but in a manner different than previously believed. Although brain organization is different for males and females, it is even more variable from individual to individual, and tests of intellectual ability show large overlap between the sexes. Kimura (1985) states that

numerous environmental events interact with our genetic heritage from the prenatal development onward, and the human brain is extraordinarily malleable and variable. Thus, we can predict very little about an individual's mental capabilities based on his or her sex (p. 58).

Biological arguments for behavioral differences between males and females are compelling. However, Greenough (1975) indicates that brain growth is significantly affected by environments which suggests environmental as well as biological influences affect brain development. The following section will deal with the research concerning the effect of the environment on the differences in behavior between males and females.

#### Cultural/Social/Environmental Explanations

There are socialization explanations for differences in cognitive performance between males and females as well as biological ones. The differences in ability found by Maccoby and Jacklin (1974) could account for some differences in achievement between males and females. However, according to Callahan (1980), even though females tend to earn higher grades in school in the stereotypically feminine realms of English, foreign languages and the arts, overall the career success of males is superior in these fields. For example, in the University of Lethbridge, even the semantics-related English and Modern

Language Departments are dominated by male professors, with only four out of seventeen positions being occupied by females.

Maccoby and Jacklin (1974) also found several previously held beliefs to be biologically unfounded, and suggest that perhaps socialization and environment may be the causal factors. These include the suggestion that girls are more "social", more "suggestible", and have lower self-esteem. Through their extensive review of the research, they also dispel the belief that girls are better at rote learning, and that boys excel at higher-level cognitive tasks; that girls lack achievement motivation; and that girls are more auditory than boys, who were believed to be more visual.

Probably one of the most commonly advanced and influential group of explanations of behavioral differences in relation to gender is that of environmental factors (Kolb & Whishaw, 1985). Certain individual behaviors emerge as identification with a particular gender begins to develop, and the individual turns to society for appropriate models of behavior. Many psychological theories of development attempt to clarify this process. Maccoby and Jacklin (1970) reviewed several of these theories. For example, psychoanalytic theory emphasizes the importance of identifying with the same-sex parent (Sears, Rau & Alpert, cited in Maccoby & Jacklin, 1974); social learning theory emphasizes the explicit rewards and punishments for behaving in gender-appropriate ways (Mischel, 1970; Bandura, 1977) and cognitive-developmental theory emphasizes the ways in which children socialize themselves once they have firmly labeled themselves as male or female (Kohlberg, 1966).

Chodorow (cited in Gilligan, 1982) proposes a theory in which behavioral differences between males and females are a result of identity formation which takes place during the first three years of a child's life. Assuming that the primary care giver for both sexes in these first three years is female, the process of gender formation becomes different for boys than for girls. Female identity formation takes place in the context of identifying



with a role model consistent with the self, and melding this experience of attachment with the process of identity formation. On the other hand, male identity formation exists in the context of separation from the caregiver, thus the male process involves a separation of themselves from their emotional ties. Consequently, males develop with more of a sense of individuation, females with a sense of empathy.

Theories pertaining to the intellectually gifted have been proposed, that also explain behaviors in relation to gender. Eccles (1985) has presented a model that explains the lesser achievements of gifted women in terms of psychological self-image factors, and the differential value men and women attach to particular educational and career options. According to this model, individuals' gender-role beliefs affect their achievement by influencing both their expectations for success and the value they place on participation in educational, occupational and family related activities.

Bem (1981) developed a gender schema theory that proposes gender to be a pervasive component influencing not only the perception of information regarding the self but also the assimilation of the same type of information. Gottfredson (1981), in her developmental theory of vocational aspirations, also assigns major importance to gender. However, according to Gottfredson, while gender self-concept is the central self-perception in the process of eliminating vocational options among children six to eight years of age, additional self-perceptions become increasingly important in the vocation elimination process as the child matures. By adolescence, the elimination of vocational options has also occurred on the basis of social class and general ability as well as gender. Later, self-perceptions of interests, values, and competencies further reduce the number of acceptable vocational options. The above theories deal with the transformation of male and female into masculine and feminine, and the transformation is often related to established gender-role stereotypes.

Thus, there are some innate differences between males and females. Most are

physical, others seem to relate to individual differences rather than differences attributable to sex, and still others seem to have physiological roots. Yet not all behavioral differences between males and females can be attributed to innate differences, even though the biological explanation is compelling. The effect of cultural expectations and the learning that occurs as a result of membership in a particular culture also has an effect on behavior. There is a danger of over "biologizing" which encourages the continuation of inappropriate gender-role stereotypes.

#### The Development of Gender-role Stereotypes

Although the effects of stereotyping accounts for much of the influence in career choice, it must be noted initially that there are other influencing factors as well. For example, a female's choice of a particular occupation may result simply from the individual's suitability to the job without reference to gender whatsoever. Both a vast and a sparse knowledge of career opportunities could also affect choices, as could attitudes towards certain aspects of occupational procedures, level of education, intellectual ability, and exposure to role models, all of which are a result of environmental, social and cultural influences. Notwithstanding these variables, most research into the occupational aspirations of school children have found that a high degree of gender-role stereotyping has had a major influence on their career choices (Iglitzen, 1972; Callahan, 1980; Navarre, 1980; Hoffman, 1972; Kerr, 1985; Siegel, 1973; Hageman & Gladding, 1983; Barnhart, 1983; Gettys & Cann, 1981; Schlossberg & Goodman, 1972; Gregg & Dobson, 1980; Kerr, 1985).

Gender-role stereotypes in general, are encouraged very early. Peterson and Peterson (1973) found that parents who have a preference for the sex of their first born or only child almost consistently preferred a son. Rubin, Provenzano and Luria (1974) found that within 24 hours of birth, daughters were more likely to be described as cute,

little and beautiful; and Seavey, Katz and Zalk (1975) found that a three-month old baby dressed in a yellow jumpsuit was described by adults as having a strong grasp and little hair when believed to be a boy; and being soft, fragile and pretty if believed to be a girl. Even for infants it seems there are certain expectations that derive from being male or female. However, social changes and the more recent trend towards role-free rearing of children shows some alteration to such strict adherence to these stereotypes. Progrebin (1980) favors the practice of non-sexist child rearing in which she recognizes the importance of helping children to be free of gender-role constraints and patriarchal predestination and to discover the very best in themselves as individuals, rather than as males or females. It is interesting to note that Kohn (1961), Lewis and Weinraub (1973); and Mussen (1969) suggest that parents of lower socio-economic classes expect stereotyped behaviors from their children more than do parents in higher economic classes.

Parents are not the only element in the promotion of sex-role stereotyping. Teachers play a very important and profound role in developing attitudes and behaviors that are considered gender-appropriate. For example, Wise (1978) conducted a study in which teachers were asked to describe what they expected two hypothetical students (one male and one female) to be like on a sixty-item scale. The only information given about the students was their sex, however not only were the students perceived differently, but they were definitely gender stereotyped consistent with the stereotypes maintained in society.

There was a perception that females

were emotional, easily express tender feelings, are very affectionate, very gentle, very quiet, and not at all aggressive. Females are also aware of the feelings of others, very tactful, and are able to devote themselves completely to others (p. 609).

Females were seen as being extremely home oriented rather than worldly as their male counterparts were perceived.

Gender-role stereotypes are not only learned very early but are usually firmly embedded by kindergarten age. In a study by Weeks (1983), it was found that gender-roles exist strongly in kindergarten children, even after a ten-week period of exposure to non-traditional vocational role models and curricular materials. Perhaps this is not too surprising when studied in the light of Kohlberg's (1966) theory of gender-role development, which states that the young child has a definite and powerful need for distinct categorical classification systems and his/her exposure to general stereotypically accepted models results in rather rigid stereotypes that are comfortable and difficult to alter.

Although it seems likely that both environment and biology play some role in determining the behavior differences between males and females, the exact balance as to how much each actually plays, presently remains uncertain. From her work in the field of neuroscience, Juraska (1986) states

It is a mistake to think of sex differences as strictly intrinsic or environmental in origin. It is the interaction of these factors that is important and such interaction can lead to a good deal of variability that we have not yet explored (p. 420).

#### Children's Understanding of Work Roles

The extensive research into young children's understanding of work roles results at least in part from the combination of the understanding of early and long-time effects of role-models in teaching children appropriate behaviors, dress and choice of jobs for their gender (Mischel, 1970), and the women's movement which saw increasing numbers of women entering into and remaining in the work force. Many studies show that children have very clear ideas regarding appropriate occupational roles. Schlossberg and Goodman (1972) found that five-year old children had clearly formed ideas regarding appropriate work roles for men and for women. They saw women's careers as primarily interpersonal. Studies by Gettys and Cann (1981) and Barnhart (1983) in which representations of stereotypical occupations were presented to children in grades one to five who were asked

whether a man or woman would most likely do each job, found that children at all ages made significant distinctions as to which careers were usually adopted by a particular gender. These attitudes reflect a recognition of reality: males tend to dominate certain occupations and females tend to dominate others.

Studies by Tibbetts (1975), Bacon and Lerner (1975) and Hageman and Gladding (1983) had children examine a wider range of occupations, and still found a strong stereotyping of many jobs, although there were indications that some jobs could be undertaken by either males or females. However, in a study done by Gregg and Dobson (1980) it was found that children in grade one and in grade six accepted both sexes working in a variety of roles, and also that there was no difference between boys and girls in their assignment of particular occupational roles to either men or women. The differences found among these studies could suggest that the effect of stereotypes may be related to the beliefs of the particular demographic area in which the subjects reside, to the perhaps varying levels of awareness existing in their areas, or to the difference in methodologies or study designs.

Some developmental trends in children's attitudes have surfaced. Guttentag (1976) noted that while kindergarten and grade nine students were quite stereotypical in assigning occupational roles, grade five students showed less stereotypic influences in their role assignments. Bacon and Lerner (1975) in their study of grade two, four and six students, found that the grade six students listed a greater number of careers as being available to both sexes than did children in the other two grades. This suggests that there may be an age when children are more flexible in their attitudes and less affected by outside pressures such as gender-role stereotypes. Pre-adolescence, a period between the strong need for distinct categorical classification systems of the very young (Kohlberg, 1966) and the turbulence of puberty and the peer pressure that goes along with it, is perhaps the period of least stereotypic influence among children.

### The Relationship Between the Career Patterns of Parents and Children's Career Choice

The importance of external influences on children's choices of careers has been shown in the previous section, and the child's perception of work roles derives in part from the role models set forth by parents. Sayer (cited by Labor Canada, Women's Bureau, 1986), Hageman and Gladding (1983), and Birk and Blimline (1984), all identify the importance of parents, teachers and other adults as major role models and sources of occupational ideas for children. Many studies link working mothers with non-traditional career choices for daughters (Bacon & Lerner, 1975; Burlin, 1976), and for both sons and daughters (Selkow, 1984). Malone and Shope (1978) found that girls tended to learn of their career choices from their mothers and that boys learned from their fathers. Anastasi (1969) suggests that with creative females however, the influence of the father tends to be of greater importance than that of the mother, which could extend into occupational choices. This may help to explain the finding that in their attitudes, interests and problem solving styles, creative individuals show more traits of the opposite sex than do controls, and generally conform less closely to gender-role stereotypes.

The general trend demonstrates that girls' realistic and non-traditional goals are consistently linked with the working status of their mothers. This suggests the possibility that the growing numbers of employed women will significantly broaden the number of perceived career choices for the next generation:

#### Intellectual Ability as a Variable of Gender-Role Stereotyping

There are characteristics of students with high intellectual ability that may diminish the effects of gender-role stereotypes. According to Davis and Rimm (1985), high ability students tend to be independent in thought and action, generally self-confident risk-takers, spontaneous, adventurous, and extremely curious, regardless of sex. These same descriptors have been used by Broverman (1972) to describe the stereotypic male:

ambitious, independent, logical, objective, self-confident, active and decisive. These characteristics hardly fit the stereotypic female role, and in fact, Welsh (1977) suggests that females exhibiting these characteristics are given the very lowest likeability ratings by teachers, while males exhibiting the very same characteristics are given the very highest. Teachers liked intellectually gifted boys better than girls with high intellectual ability, and also considered them to be more capable (Welsh, 1977). Perhaps this is because the gifted males fit their appropriate stereotype more satisfactorily than do the females. The description of intellectually gifted students resembles very closely the description of the stereotypic male, which suggests that the female student of high intellectual ability may be facing a conflict between what she sees as appropriate behavior for a female and appropriate achievements for an individual of high intellectual ability (Garrison, Stronge & Smith, 1986). If it is the case that females with high intellectual abilities have characteristics more in line with those perceived appropriate for males, then they may experience greater conflict in identifying with an appropriate gender-role. On the other hand, these females may actually experience less conflict because their high intellectual ability may allow them to interact with their environment in such a way as to either disregard or better cope with the stereotypes.

Clark (1983) believes that the highest expression of giftedness is creativity, and Coleman (1985) concurs as he believes that increases in intellectual ability are related to increases in creativity. Research suggests that creative individuals resist pressure to conform to gender-role stereotypes. Bartwick (1971) for example, found that the creative person does not conform to gender-role stereotypes to as great a degree as the less-creative. Thus, it is suggested that intellectually gifted students may be less affected by gender-role stereotypes than those of average ability. And according to Helson (cited in Groth, 1976), creative females are more concerned with ego building than gender-role learning. Groth (1976) states that

For the uncreative, the sex-role mystique lingers as a constraint against innovation and a shield against competition (p. 329).

He also suggests that gender-role stereotypes are beginning to lose the controlling power they once had. In a study done by Groth (1976), college level females saw themselves as being intellectually equal to males, and just as motivated and assertive. From the results of this study, it may be assumed that females with high intellectual ability will actively seek creative accomplishment and may reject the more traditional passive-dependent roles.

Although these results are encouraging, much research has suggested just the opposite. For example, Lavach and Lanier (1975) found that motivation to avoid success was prevalent in high achieving girls, and was positively correlated with increasing grade level. Homer (1969, 1972) suggested that the bright woman is caught in a double bind, particularly in achievement-oriented situations in which she not only worries about failure but also about success.

Thus, females with high intellectual ability may not fit into stereotypic roles and may exhibit behaviors demonstrating that they are less affected by stereotypes than their peers of average intellectual ability. Bem (1975) proposes a theory of androgyny in which she suggests that non-traditional gender typing is associated with superior cognitive functioning. Based on her research, Bem (1975) suggests that

boys who are strongly masculine and girls who are strongly feminine tend to have lower overall intelligence, lower spatial ability, and show lower creativity (p. 60).

Research regarding the influence of gender-role stereotyping on children of high intellectual ability is sparse. The usual biological and cultural explanations for behavioral differences between males and females suggest passive acceptance of the inevitability of situations which mold the individual. Perhaps there is another aspect to the development of individual behaviors that includes active participation with the environment, in which the



individual is influenced by but also influences the forces acting upon him/het. It seems to me that a certain level of intelligence would be necessary in order for this thoughtful interaction with the environment to occur, and perhaps those exhibiting superior intellectual abilities are most able to interact in this manner. Perhaps these children will be less affected by these stereotypes than will children of average intellectual ability, as was suggested by Bartwick (1971), Helson (cited in Groth, 1976), and Bem (1975).

#### Aspirations versus Expectations

It is hoped that if children can perceive wider and less stereotyped views of men and women at work, then as adults they will practice less discrimination in hiring, supervision and general approval/disapproval of other people's career choices, and will view a wider range of occupational options as being open to themselves. Children's perceptions of acceptable and unacceptable job placement patterns, and the recent tendency toward liberalization in their assignments of males and females to particular careers (Tibbets, 1975; Bacon & Lerner, 1975; Hageman & Gladding, 1983; Gregg & Dobson, 1980) do not tell the whole story, however. There still appears to be a great discrepancy between what children see as acceptable for others and what they would choose for themselves. Gregg and Dobson (1980) found that although first and sixth grade girls believe that women and men could perform a whole range of careers, they still chose traditionally female occupations for themselves. Bacon and Lerner (1975) found that although with age there is a general decrease in gender-role stereotype, females in grades two, four and six still view their own vocational hopes and expectations in terms of traditional female roles.

Children's expectations seem to have changed very little when compared with their aspirations. The occupations that children (particularly girls) aspire towards may not be consistent with those they actually expect to achieve. Although females often profess

aspirations towards non-traditional careers, they actually expect to enter traditional occupations more often than males (Iglitzen, 1972; Burlin, 1976; Glaze, 1979; Maynard, 1979; Hageman & Gladding, 1983). Contradictory evidence exists however, in a study by Dolny (1985) who found no difference between high school females' and males' career expectations. It is important to note that the studies finding differences between aspirations and expectations made no distinction in intellectual ability of the subjects, whereas the Dolny study was conducted using intellectually gifted subjects. This suggests that perhaps those with high intellectual ability are less affected by stereotypes than their average ability counterparts. Of course, there could be other explanations for the different results. For example, the socio-economic status and age of the subjects, that could alter their knowledge of available options and increase the exposure to a variety of role models, are both factors which could also have contributed to the contradictory findings.

The non-traditional aspirations of females tend to be the professional, highly paid and highly visible occupations such as physician, lawyer, accountant, and veterinarian. The expectations tend to be somewhat more traditional. Anisef (cited in Labor Canada, Women's Bureau, 1986) found that in most studies females aspired to professional, managerial or artistic occupations but actually expected to become nurses and secretaries. He found that although only 10% of the female children studied expected to enter clerical occupations, in actuality nearly 70% did. He also found a greater gap between the expectations and aspirations for females than for males. Conflicting evidence exists however, in a study by Sayer (cited in Labor Canada, Women's Bureau, 1986) in which the expectation of a non-traditional career was actually found to be consistent with the aspiration.

#### Summary and Study Questions

The research relating to the discrepancies between male and female achievement in

the realm of occupations, is vast and sometimes contradictory. The effects of gender-role stereotypes on behavior have been recognized but the variable of intellectual ability has rarely been introduced into the "field of combat". This variable combined with the previously discussed research related to gender-role stereotypes, childrens' understanding of work roles, and the effect of parents' careers on the career choices of children encourages further inquiry, and as a result, six specific questions will be addressed in the study:

1. To what extent do pre-adolescent children identify with gender-role stereotypes?
2. What are the relationships between and among measured intellectual ability (achievement), sex, and gender-role stereotype?
3. To what extent do pre-adolescent children aspire to occupations that reflect a recognition of their measured intellectual abilities?
4. To what extent do pre-adolescent females of high intellectual ability aspire to occupations that reflect a gender or career stereotype?
5. Are there observable patterns in relation to the career profiles of parents, and the intellectual ability, gender-role stereotyping and occupational choices of pre-adolescent children?
6. How closely do pre-adolescent females' descriptions of career expectations reflect the descriptions of their career aspirations?

## CHAPTER III.

### METHOD

#### The Sample

##### Selection on the Basis of School

The final sample for this study consists of 100 pre-adolescent students (grades five and six, ages 11 and 12) from two schools within the Lethbridge School District #51. The schools have been labelled School A and School B, and are exclusively elementary schools. They each support three classes of both grade five and six students. The two schools were chosen because the opportunity to obtain all subjects from two concentrated areas serves to reduce the influence of extreme variability of backgrounds. Thus, it was hoped that choosing from similar neighborhood and school environments might reduce the potential learning and attitudinal differences to be expected in different environments. The schools were also chosen because the administration and staff at both schools were very cooperative and receptive to research and observation being carried out in their classrooms.

##### Selection on the Basis of Age

Pre-adolescence was chosen as an optimal age for subjects as it seems to be a period between the need for strong classification of the world of the very young and the turbulence of the teen years, which is characterized by peer pressures and the desire to be accepted and to conform. The strength of these adolescent pressures and desires could be mistaken for, and confused with, gender-role stereotypes. Kavrell and Peterson (1984) suggest that the pre-adolescent individual is more affected by the process of socialization

and the stereotyping of behaviors and less influenced by peer pressure in the development of gender differences in career-choice. Fox (1976) also believes that pre-adolescents are entering a level of cognitive development that enables them to deal with the abstractness of future careers, and yet remain free from the particularly strong peer pressures to conform to stereotypes in the adolescent years.

Huston (cited in Signorella, 1986) suggests that by adolescence spatial, mechanical and mathematical skills are stereotyped as masculine whereas verbal skills are stereotyped as feminine. Gottfredson (1981), in her developmental theory of vocational aspirations, believes gender self-concept to be a central factor in the lives of 6-8 year olds. By adolescence, career options begin to be eliminated on the basis of self-perceptions of both social class and general ability as well as by gender. Pre-adolescence then would seem to be the period least biased developmentally for a study concerned with gender-role stereotypes. It is a period in which children exhibit enough maturity to be able to understand the abstract concepts of future behavior, while they still maintain some freedom from adolescent pressures.

#### Selection on the Basis of Ability

The intent of the study was to compare high and average ability male and female students. The usual measure of intellectual ability is an intelligence test. However, since not all subjects had had IQ tests, and since the researcher was not able nor qualified to administer such tests, it was determined that an achievement test would be an acceptable alternative measure. Although achievement tests measure what has already been learned, they also provide a basis for predicting future achievement (Anastasi, 1982). She states that:

...no distinction between aptitude and achievement tests can be rigidly applied.  
...an achievement test may be used as a predictor of future learning (p.394).

She cites considerable research indicating that the correlations between achievement and intelligence tests are as high as the correlations between intelligence tests, and as high as the reliability coefficients of each test (p. 395). The most commonly used intelligence test in Lethbridge School district #51 is the WISC-R which has an internal consistency ranging from .37 to .75 for age 11 1/2, with a mean of .60. The internal consistency of the CAT ranges from .93 to .97 for grades one to six. Thus, given Anastasi's comments, it can be assumed that the CAT and the WISC-R scores would have correlations somewhere within the range of .37 to .97.

#### Consent of the Parents

Parental consent forms (Appendix A) were distributed to all grade five and six students in the two schools, and participation in this study was limited to those returning completed forms. The return rate was 53% (86/162) at School A and 75% (111/149) at School B. The difference in percentage of returns between the schools is likely due to differences in method of distribution in the two schools. The consent forms were left at School A to be distributed to the students by the teachers, but since there was a low rate of return, it was decided to distribute the forms to the students in School B personally, at which time the study was explained with the hope of generating some enthusiasm for participating. A total of 197 students formed the initial sample group.

#### Delineation of Groups

From the initial group of 197 students (50 females and 36 males from School A and 56 females and 55 males from School B), four final groups were composed on the basis of sex and ability. On the basis of percentile rank on the Canadian Achievement Test, the highest ranking 25% of each sex was chosen as the high ability group (90-99th percentile in the Canadian population), and the next highest ranking 25% were eliminated from the

study (66-89th percentile). This elimination was to lessen the chance of overlap and provide a more clear distinction between the two selected ability groups. The next 25% were chosen as the average ability group (45-65th percentile), and those achieving percentiles in the lowest 25% (0-44th percentile) were also eliminated. Naturally occurring breaks in the lists were utilized as much as possible. That the top 25% of the subjects were concentrated within the 90-99th percentile was perhaps a result of using the national percentiles as a basis of comparison.

This procedure produced a final sample of 100 students comprised of the following four groups: (1) 26 high achieving females, (median percentile = 97); (2) 23 high achieving males, (median percentile = 97); (3) 28 average achieving females (median percentile = 59; and (4) 23 average achieving males (median percentile = 56). A summary of the final sample is shown in Table 1.

### The Instrument

#### Validity and Reliability

Validity. A number of strategies were employed to maximize questionnaire validity. The questionnaire was constructed primarily from a review of the literature, and from consultation with Dr. M. Freehill, an expert in the field of the education of gifted children (personal communications, February-March, 1986). It was pilot tested with a smaller sample (N=36) to ensure ease of administration and clarity of meaning for the students. On the basis of this pilot testing, the wording of several questions was altered and choices receiving fewer than five percent of the responses were eliminated entirely.

Reliability. Although reliability is of concern to any researcher, a coefficient of internal consistency was not calculated in this study because of the nature of the questionnaire. However, some internal consistency among the questions does appear in Table 3, in that the correlations between questions, although low, are statistically

Table 1  
Description of the Final Sample (N = 100)

		Female	Male	Total
Ability	High	26	23	49
	Average	28	23	51
Grade	5	31	16	47
	6	23	30	53
School	A	26	19	45
	B	28	27	55



significant. For example, the correlation between the "reasons" question and the "strength of feelings" question is .48, between the "motivators" question and the "strength of feelings" question is .42, and between the "motivators" question and the "reasons" question is .36; all of these are significant using an alpha level of .05.

To maximize reliability, "femininity" (as described by the Femininity Score) was measured using a variety of strategies. Questions were designed to uncover the same concept but in different ways. For example, the "reasons" question allowed for an open expression of career choices, whereas the "strength of feelings" question provided a list of careers from which the subjects could choose. Other methods of gaining insight into "femininity" were through the motivations and the strength of the subjects' feelings behind their career choices.

Calculating test-retest correlations to determine reliability over time did not seem feasible for this study. The age of the subjects was such that changes attributable to development present the possibility of these subjects scoring differently over time on any attitudinal questionnaire. Thus the findings apply to a particular time in these children's development.

#### Description of the Instrument

The questionnaire, found in Appendix B, consisted of nine questions. Question #1 ("If you could have any career you wanted when you grow up, what would it be?"), was an open ended question allowing the subjects to reveal career aspirations freely and without constraint. The information gained from this question was compared with that from question #5, which revealed the actual career expectations of the subjects. ("Describe what you feel will be a typical day in your life when you are 25 or 30 years old."). The interpretation of these two sections of the instrument addressed the question: How closely do descriptions of career aspirations reflect the descriptions of career expectations?

Information gained from questions #1 and #5 also provided qualitative data to enrich the study.

Question #2 required the subject to fill in the blank ("I would LOVE to be a \_\_\_\_."), and to check two of the provided reasons ("It fits my special abilities"; "It would make my parents happy"; "It would give me lots of money"; "I would be able to learn a lot"; "I could make lots of friends"; "I would be able to be the best"; or "I would be able to help people"). Question #3 required the subject to fill in the blank ("I COULD be a \_\_\_\_."), and also check two of the reasons provided ("people would think I was weird"; "It would be boring"; "Someone would always be telling me what to do"; "I wouldn't make enough money"; "It would be too lonely"; "I'm not strong enough"; or "I would be away from home too much"). Similarly, question #4 required the subject to fill in the blank ("I would NEVER be a \_\_\_\_."), and select two reasons ("It would keep me at home too much"; "I wouldn't be able to think enough or learn new things"; "I wouldn't be able to work with people"; "I couldn't make own decisions"; "I would have to be outdoors too much"; or "My friends wouldn't understand"). These questions were designed to uncover certain attitudes traditionally believed to be predominantly masculine or feminine. For example, "working alone", "with things rather than people", "outdoors and away from home", "making one's own decisions", "competitiveness", and "aggressiveness" are all held to be stereotypical male attitudes (Wise (1978). Similarly, "making lots of friends", "helping people", and "pleasing others" are held to be traditionally female attitudes. The "reasons" to be chosen were not structured to uncover the actual reason for the subject's career choice, but rather to discover whether those reasons chosen reveal stereotypic attitudes. The choice of "reasons" provided on the instrument were selected from the literature and included those characteristics identified as being most associated with stereotypes. Each "reason" had been coded as masculine, feminine or neutral on the basis of this literature to allow for quantitative scoring (Appendix C).

Question #5 ("Describe what you feel will be a typical day in your life when you are 25 or 30 years old.") examined the perceived ability and willingness to actually incorporate career aspirations into the subjects' lives (Iglitzen, 1972). It addressed the question of whether aspirations (question #1) were consistent with expectations and added another dimension for judging the influence of gender-role stereotypes.

Question #6 consisted of a list of careers and career descriptions. The list was compiled for this study from (1) a list of masculine and feminine occupations found in studies by Yanico and Milbauer (1983), and Shepard and Hess (1975), and (2) information in Get to Work (Foord, 1985). The career descriptions were included as a measure of stereotyped career behaviors rather than actual labels of the careers. For example, subjects who may have strong choices on the basis of names of careers may not in fact be so adamant when confronted with the actual job description. The strength of feelings involved was indicated by a double check (//), check (/), and zero (0) markings, representing strong positive feelings, neutral feelings, and strong negative feelings respectively. It was noted during the administration of the questionnaire that the students seemed to particularly enjoy this aspect of the question. The masculine, feminine and neutral coding for each career is listed in Appendix D.

Questions #7 ("What is your father's occupation?") and #8 ("What is your mother's occupation?") revealed the occupation of parents, and this information was used to examine the relationship of parental occupation to career choices of the children. Question #9 consisted of a list of "motivators" ("appreciation by others"; "control"; "money"; "freedom"; "fame"; "power"; "peace/harmony"; "recognition"; "tradition"; "approval of others"; "friendship"; "knowledge/wisdom"; "being needed"; "winning"; "acceptance"; "accomplishment"; and "change"). "Motivator" is defined as a "drive influencing a choice or prompting an action" (Webster's Collegiate Dictionary, 1976). Each motivator was coded as being either masculine, feminine or neutral (Appendix E). For example,

according to Wise (1978), females are stereotypically more "aware of the feelings of others", "helpful", "tactful", and "able to devote themselves completely to others". These descriptions have been taken to imply that females are more interested in "cooperation and harmony" than "competition and aggressiveness", which are usually perceived as more masculine characteristics. This information was used to arrive at a feminine/masculine rating for each "motivator".

#### Administration of the Instrument

The questionnaire was administered in the individual classrooms to all the participating subjects. Each question and the directions were discussed orally to insure that all subjects understood the procedures. The idea of gender-appropriate responses was never mentioned, and careful attention was paid to the elimination of sexist language or unnecessary mention of gender. Students were requested to write their name, grade, and sex on the back of the questionnaire.

#### Scoring the Instrument

All the measures were designed to uncover the subjects' attitudes that are traditionally believed to be either predominantly masculine or feminine, to determine the degree to which the subjects' measured intellectual abilities affect their adherence to gender-role stereotypes, or to reflect their career aspirations and expectations. There were two aspects involved in the interpretation of the questionnaire. One aspect involved quantitative data derived from questions #2, #3, #4, #6, #7, #8 and #9; the other aspect involved qualitative information revealed in questions #1 and #5. In review, questions #2, #3, and #4 required the subjects to choose a career and provide reasons for their choices. These three questions actually comprised one theme and for clarification will be referred to as the "reasons" question. Question #6 required the students to choose careers and mark the

strength of their feelings toward them, some positive, some negative. This question will be referred to as the "strength of feelings" question. Question #9 explored the motivating forces behind their career choices and will be referred to as the "motivators" question.

Quantitative scoring. A numerical score, which was arbitrarily called the "Femininity Score", was obtained from responses to the "reasons", "strength of feelings", and "motivators" questions. The "reasons" were previously coded as either masculine, feminine or neutral (Appendix C). Career choices that are traditionally stereotyped as feminine were scored +2; the neutral careers were scored 0; and the masculine careers were scored -2. The two "reasons" checked for each career choice were similarly rated on a +2, 0, -2 scale, +2 being a high feminine score. Scoring for the "never" choices in question #4 were reversed. A "never" choice in a masculine career received a score of +2 on the feminine scale; in a neutral career, 0; and in a feminine career, -2. This generated possible scores ranging from a maximum high of +36 to a minimum low of -36, the high score being interpreted as a high feminine score. A summary of scoring procedures for the "reasons" questions is provided in Figure 1.

The "strength of feelings" question (#6) was assigned scores between +2 and -2 to rate the strength of feelings behind the subjects' choices. Career and career descriptions were coded feminine, masculine or neutral on the scoring key for question #6 (Appendix D). The double check (//), check (/), and zero (0) markings indicated the strength of feelings involved in the choices made. A rating of stereotype for each career was assigned, +2 being feminine, 0 being neutral, and -2 being masculine. For example, "nurse" is traditionally perceived as a feminine career and was rated +2; "auto mechanic" on the other hand is traditionally thought to be a masculine occupation and was given a rating of -2. As well, each choice was rated according to the strength of "desire" or "rejection". The number of "love to" (indicated by a//) feminine choices made was multiplied by +2; the number of "maybe interested" (indicated by a/) feminine choices was multiplied by 0;

Question	Career choice	Reason 1	Reason 2	Sub-total
2	+2 (fem.) 0 (neut.) -2 (masc.)	+2 (fem.) 0 (neut.) -2 (masc.)	+2 (fem.) 0 (neut.) -2 (masc.)	max. +6 min. -6
3	"	"	"	max. +6 min. -6
4	"	"	"	max. +6 min. -6
			Total	max. +36 min. -36

Figure 1: Summary of Scoring Procedures for "Reasons" Questions

and the number of "no way" (indicated by a 0) feminine choices was multiplied by -2. Masculine choices were similarly scored but in the reverse. A "love to" masculine choice was multiplied by -2 and a "no way" choice was multiplied by +2. This produced scores ranging from a high of +15 to a low of -15, the high score being interpreted as a high feminine score. A summary of scoring procedures for question #6 is shown in Figure 2.

The "motivators" question (question #9) also provided data for the Femininity Score. The "motivators" were coded feminine, masculine or neutral on the scoring key (Appendix E). An opportunity to indicate the strength of choices was also provided for this question. The motivators were assigned positive scores if stereotypically feminine, and negative scores if stereotypically masculine. For example, the most important motivator (indicated on the questionnaire by the subjects with a "1"), if rated as feminine, was given a score of +5, if rated as masculine, it was given a score of -5. The second most important motivator was given a score of +4 and -4 respectively; those rated as third most important were scored +3 and -3, and so on. This procedure generated scores ranging from a possible high of +15 to a possible low of -15 on question #9, the high score being interpreted as a high feminine score. A summary of scoring procedures is provided in Figure 3.

Thus, in order to statistically analyze the data, three separate Femininity Scores were obtained for each subject: one score from the "reasons" questions; one from the "strength of feelings" question; and one from the "motivators" question. A total Femininity Score was also obtained by combining the scores from the above listed questions. The Femininity Score provided an indication of the degree to which an individual adheres to gender-role stereotypes. The total score could range from a possible high of +66 to a possible low of -66, the higher scores indicating a greater tendency toward adherence to the traditionally feminine characteristics and attitudes, and the lower scores towards the traditionally masculine.

Strength	Fèminine	Neutral	Masculine	Sub-total
	+2	0	-2	max. +6
✓ ✓	<hr/>			min. -6
	+1	0	-1	max. +3
✓	<hr/>			min. -3
	-2	0	+2	max. +6
0	<hr/>			min. -6
Total				max. +15 min. -15

Figure 2: Summary of Scoring Procedures for "Strength of Feelings" Question



If choice is ... (fem./masc.)	first	second	third	fourth	fifth	
Score	+5/-5	+4/-4	+3/-3	+2/-2	+1/-1	max./min +15/-15
						Total

Figure 3: Summary of Scoring Procedures for "Motivators" Question

Qualitative Data. Questions #1 and #5 provided data for qualitative interpretation. The data from question #1 ("If you could have any career you wanted when you grew up, what would it be?") were read and the specific careers chosen were listed for each subject for comparison to their expected careers as revealed in question #5 ("Describe a typical day in your life..."). Further comments made in question #1 were used with those in question #5 to provide insights into the degree of adherence to gender-role stereotypes through the subjects' career choices, lifestyles, goals, and other aspects of their lives which they considered important enough to reveal. As themes became evident in question #5, categories were formed. The categories of "importance of children", "spouses", "job/career", "domestic responsibilities", "dependence/independence", and "sports/cars/money", emerged as commonalities. Representative comments were chosen from each ability group to exemplify these categories and are included as quotations. The data from each question were examined separately, and also in relation to each other, thus differences and consistencies were considered within individual questionnaires as well as across ability groups.

## CHAPTER IV.

### RESULTS

The principal finding of this study was that the influence of gender-role stereotypes on pre-adolescent children was confirmed, even across ability groups. Stereotypical attitudes were unrelated to intellectual ability, as both high and average ability groups conformed to traditional attitudes exhibited toward the sexes. However, there did seem to be a trend towards a more androgynous attitude among the females than among the males, particularly the high achieving males. High ability males showed a trend towards exaggerated stereotypical attitudes in comparison to the other subject groups. Furthermore, high ability students generally had more to say and exhibited more confidence (particularly the high ability males) in their responses.

#### Analysis of the Data

Differences between groups were analyzed descriptively. Statistical significance was assumed when the alpha level was less than or equal to .05. As well, sections of the questionnaire generating qualitative data resulted in categorizations and counting of common responses. The numbers and percentages emerging from these questions are also included in this section.

#### Analysis of Femininity Scores

Overall Analysis. The subjects' individual Femininity Scores for each question

plus their Total Femininity Score were tabulated. Box-and-Whisker plots summarize the Femininity Score distributions in Figures 4-7. The "box" describes the middle 50 percent of the distribution, and the median or midpoint in the distribution falls within the box. The "whiskers" extend beyond the box to the points beyond which the lowest and highest scoring 10% of the distribution fall. Further detail of actual scores beyond these points is indicated by the dots. Three main results are suggested by these plots: (1) There is a sex difference across ability groups. Both female groups consistently obtained higher Femininity Scores than the male groups regardless of ability level suggesting that males and females hold different attitudes toward roles appropriate for each sex; (2) A greater degree of androgyny is suggested for the females as the boxes indicating the female groups hover around the "0" mark whereas the male boxes fall more deeply into the "masculine" zone; and (3) The high ability males consistently scored lowest on the Femininity Scale indicating attitudes stronger than those of any other ability group. The ability group means for each Femininity Score plus the Total Femininity Score were calculated and are indicated in Table 2.

The first step was to create a correlation matrix using the parameters of the StatView 512+ package (Ferguson et al., 1986). Every measure was correlated with every other measure, as well as with sex, ability, school, and grade. This provided an opportunity to look at the interrelationships between the measures and the categories of sex, ability, school, and grade. Table 3 shows the correlation matrix. Five results can be extracted from it using the traditional alpha level of .05. First, a correlation (although low) was found among the femininity measures which suggests some internal consistency among the sub-scales. A correlation in this instance may not be surprising given that the individual Femininity Scores are subscales of the total Femininity Score. Second, ability failed to correlate significantly with any other femininity measure. Third, sex correlated significantly with all femininity measures. Fourth, there was no statistically significant

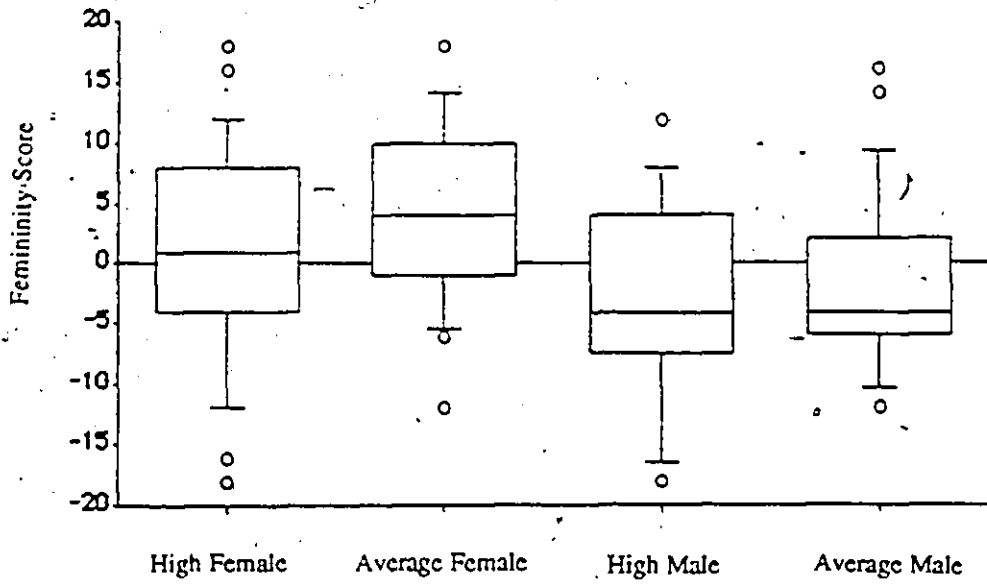


Figure 4: Femininity Scores for Each Subject Group for "Reasons" Questions

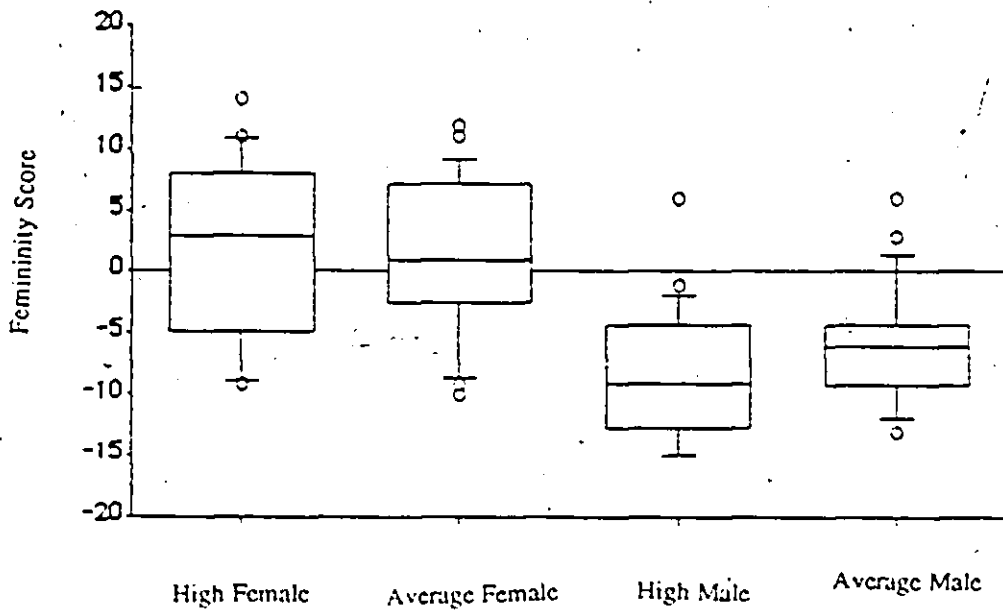


Figure 5: Femininity Scores for Each Subject Group for "Strength of Feelings" Question

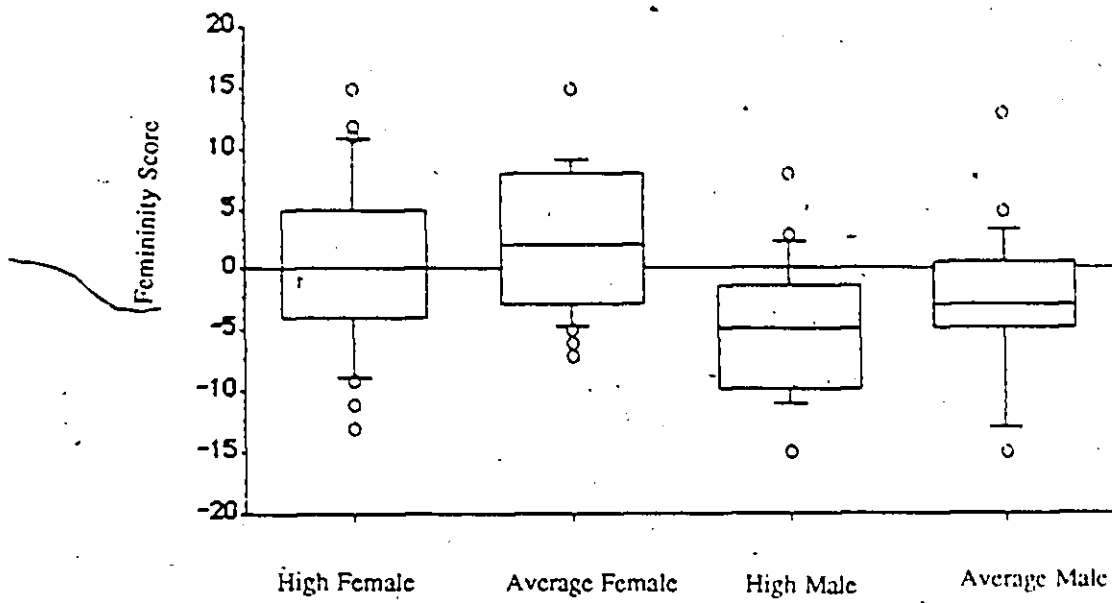


Figure 6: Femininity Scores for Each Subject Group for "Motivators" Questions

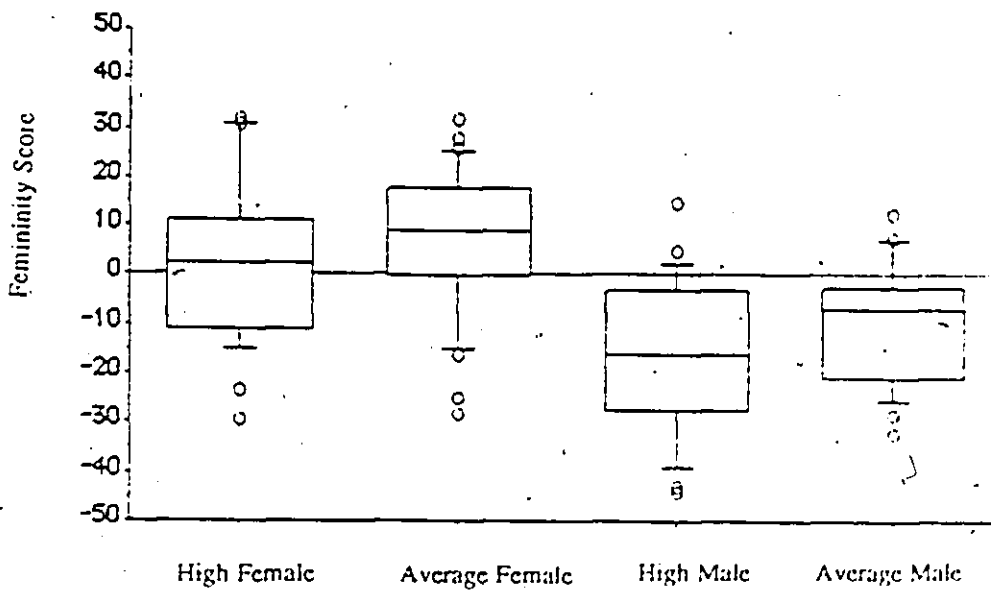


Figure 7: Total Femininity Scores for Each Subject Group

Table 2  
Mean Femininity Score for Each Ability Group

Questions	High Females	Average Females	High Males	Average Males
"Reasons"	1.69	3.86	-3.30	-1.30
"Strength of feeling"	1.76	1.31	-8.26	-5.90
"Motivators"	.08	2.29	-5.35	-3.10
Total	2.92	7.36	-16.91	-10.04

Table 3  
Correlations Among Variables

	School	Grade	"Reasons"	"Strength of feelings"	"Motivators"	Total Fem	Ability
School	1.000						
Grade	.115	1.000					
"Reasons"	.093	-.155	1.000				
"Strength of Feelings"	.050	-.288 **	.482 **	1.000			
"Motivators"	-.066	-.106	.362 **	.415 **	1.000		
Total Fem	.038	-.230 **	.820 **	.795 **	.728 **	1.000	
Ability	.038	.159	.137	.064	.170	.165	1.000
Sex	.069	.226 *	-.283 *	-.582 **	-.396 **	-.520 **	-.018

\* p < .05  
\*\* p < .01



relationship between school and any of the other variables, which may suggest a homogeneous population. Fifth, grade correlated with femininity scores on the "strength of feelings" question and the total Femininity Score which probably resulted from a larger number of grade six boys in one group.

The data were then analyzed by doing a two-factor analysis of variance (Sex X Ability) on each measure. The differences between the mean scores of males and females on each of the four Femininity Scores was statistically significant according to the results of the two-way analysis of variance using a level of significance of  $p < .05$ . The results of the analysis of variance of sex and ability are shown in Tables 4-7. These showed a significant main effect of sex on the "reasons" questions ( $F(1,96)=8.39; p=.0047$ ); the "strength of feelings" question ( $F(1,96)=50.15; p=.0001$ ); the "motivators" question ( $F(1,96)=18.15; p=.0001$ ); and the total Femininity Score ( $F(1,96)=36.55; p=.0001$ ). The Femininity Scores clearly discriminated between males and females, as shown in Figures 8-11. All figures show a sex difference in both Femininity Scores on individual questions and total Femininity Scores suggesting that males and females hold very different attitudes regarding gender-roles. In contrast, ability was not significant on any question. It is interesting to note that ability approached significance on the overall Femininity Score, suggesting that there may indeed be a weak correlation with ability. Finally, none of the interactions were significant.

Analysis of the "Motivators" Question (Question #9). Question #9 presented a list of motivators (traditionally held to be stereotypically masculine, feminine, or neutral, and coded as such in Appendix D) to the subjects who were to list in order of importance what they felt were the five most significant motivators influencing their choice of career. The results of this question showed a clear sex difference as revealed by the analysis of variance done on the motivator scores. A significant effect of sex ( $F(1,96)=18.152; p<.0001$ ) was evident but again the effect of ability failed to reach significance ( $F(1,96 df)=3.11; p=.08$ )

Table 4

Analysis of Variance: Sex x Ability x "Reasons"

Source:	df:	Sum of Squares:	Mean Square:	F	p
Ability (A)	1	128.450	128.450	1.815	.1810
Sex (B)	1	592.816	592.816	8.378	.0047
AB	1	1.874	1.874	.026	.8711
Error	96	6792.706	70.757		

Table 5

Analysis of Variance: Sex x Ability x "Strength of Feelings"

Source:	df:	Sum of Squares:	Mean Square:	F	p
Ability (A)	1	19.949	19.949	.548	.4611
Sex (B)	1	1826.929	1826.929	50.145	.0001
AB	1	52.293	52.293	1.435	.2338
Error	96	3497.591	36.433		

Table 6

Analysis of Variance: Sex x Ability x "Motivators"

Source:	df:	Sum of Squares:	Mean Square:	F	p
Ability (A)	1	123.984	123.984	3.1100	.0810
Sex (B)	1	723.531	723.531	18.1520	.0001
AB	1	.017	.017	0.0004	.9836
Error	96	3826.604	39.860		

Table 7

Analysis of Variance: Sex x Ability x Total Fem Score

Source:	df:	Sum of Squares:	Mean Square:	F	p
Ability (A)	1	792.964	792.964	3.368	.0696
Sex (B)	1	8605.193	8605.193	36.551	.0001
AB	1	36.812	36.812	.156	.6934
Error	96	22601.057	235.428		

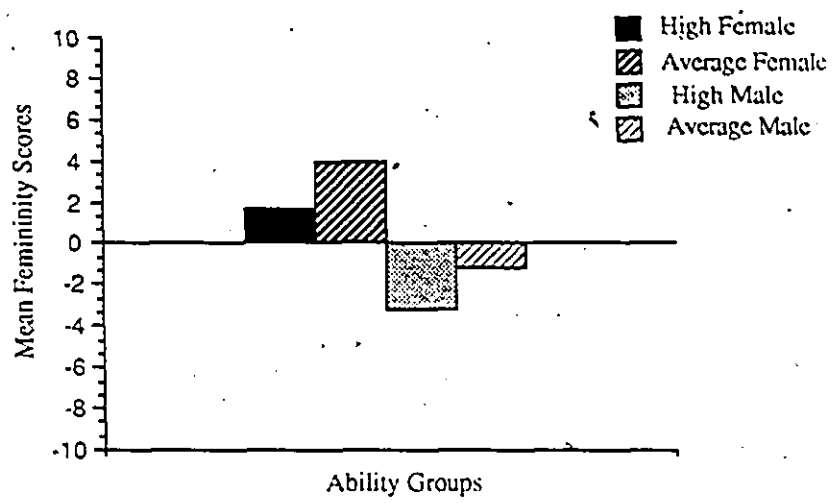


Figure 8: Mean Femininity Scores, "Reasons" Questions

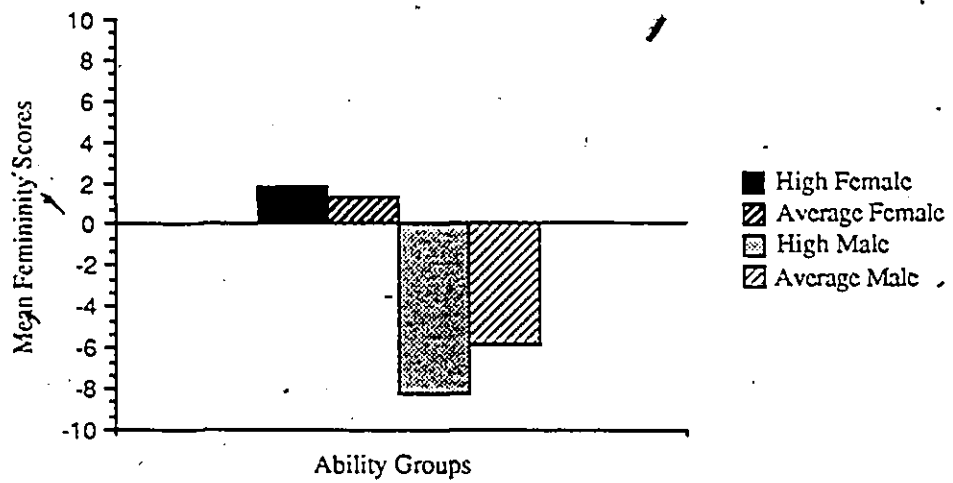


Figure 9: Mean Femininity Scores, "Strength of Feelings" Question

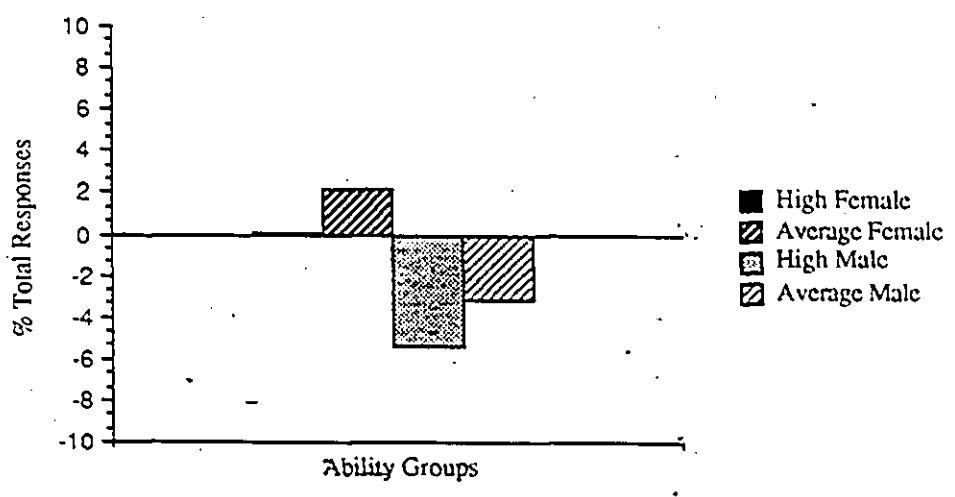


Figure 10: Mean Femininity Scores, "Motivators" Question

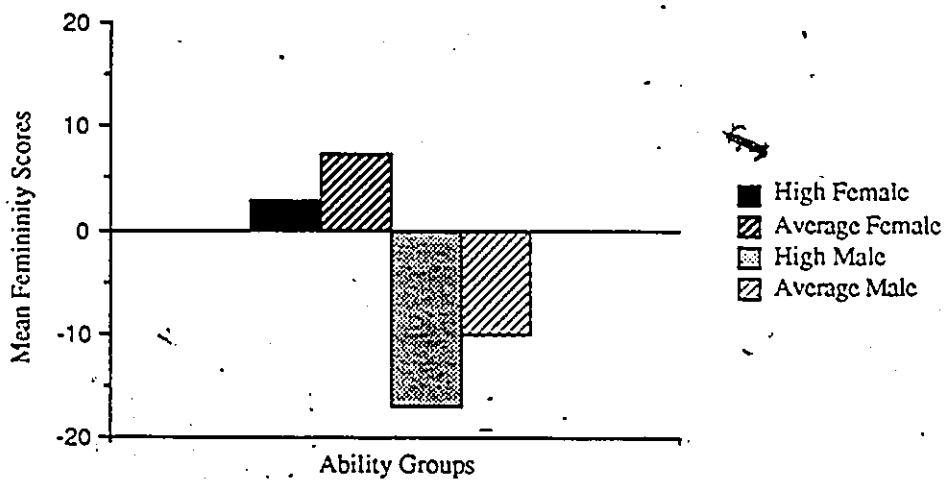


Figure 11: Mean Total Femininity Scores

(Table 6). There may be a trend for ability to influence the motivator scores, as the F value just failed to achieve the traditional alpha level of  $p < .05$ , being reliable at  $p = .08$ .

The results for both female groups are shown in Figures 12 & 13. The categories of "approval" and "acceptance" for all groups, both male and female, were combined into one for simplification of the data presentation and because they represented such similar concepts, resulting in five "feminine" motivators (appreciation, peace, approval/acceptance, friendship, and being needed) which were grouped on the left of the figure, and six "masculine" motivators (control, money, freedom, power, winning, and accomplishment) which were grouped on the right. Any motivators receiving fewer than 10% of the responses were eliminated from the analysis. Thus, "recognition", "tradition", and "change" were excluded. The desire for money is generally held to be a "masculine motivator", and was included as such in this question. However, the positive response towards money as a motivating force by all subject groups was noted. This could be a reflection of the changing attitudes toward the acquisition of money in society, or of the fact that money was used as an example by the researcher in explaining the meaning of "motivator" during the administration of the questionnaire.

From Figures 12 & 13, there appears to be very little difference across female ability groups. Both high and average female groups chose traditionally feminine motivators as important influences in their choice of careers. There appears to be a slight difference however, in that the high ability females were less motivated by appreciation and friendship, and placed more emphasis on accomplishment than did their average ability counterparts.

The comparison of the male ability groups is presented in Figures 14 & 15. As with the female groups, no appreciable difference across ability groups was demonstrated, although there was a tendency towards more frequent choices of feminine motivators by the average ability males in comparison to those of high ability, with "being needed" serving as



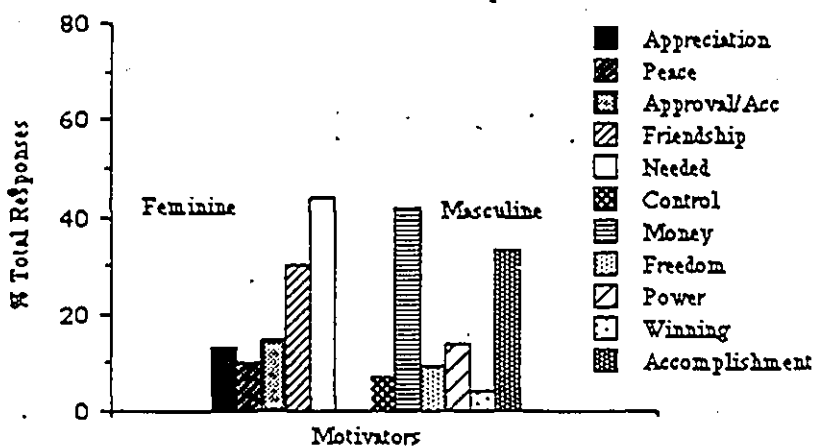


Figure 12: Motivators for High Achieving Females

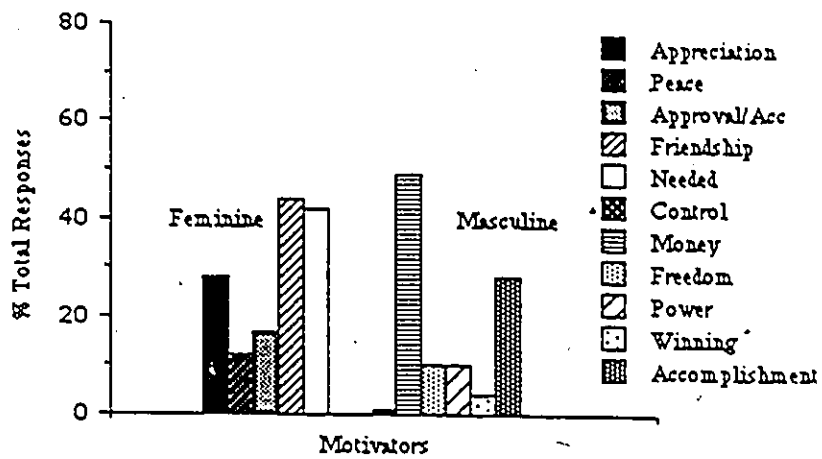


Figure 13: Motivators for Average Achieving Females

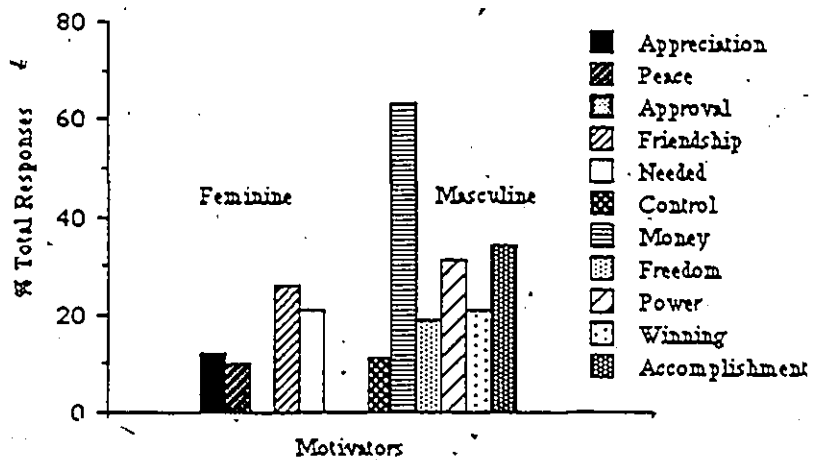


Figure 14: Motivators for High Achieving Males

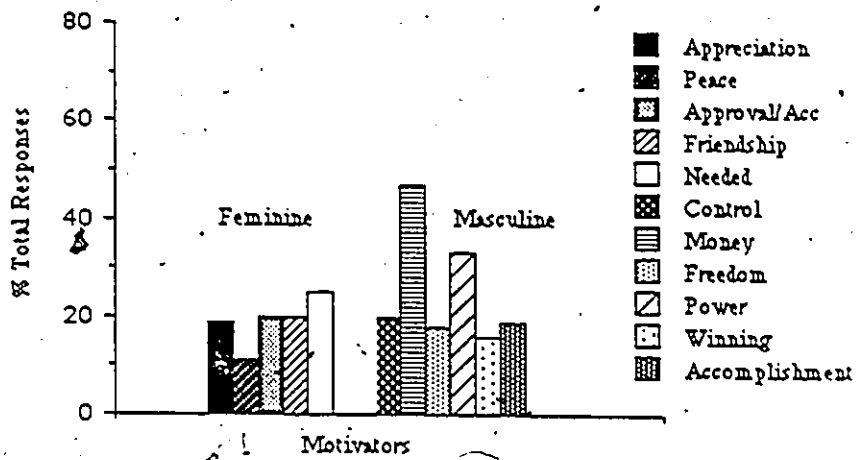


Figure 15: Motivators for Average Achieving Men

an example. It is interesting to note the complete lack of "approval and acceptance" as motivating forces for high achieving males, especially in view of the frequency of responses in these categories for the average group. In fact, "approval and acceptance" was chosen with approximately the same frequency by all the other three subject groups, and it was only the high achieving males who failed to perceive it as a motivating force in their choice of career.

When the comparison between high ability sex groups was made (Figures 16 & 17), large sex differences became evident, particularly in the "approval/acceptance", "friendship", and "being needed" categories. These were more important motivators for females than for males, who were more motivated by "winning" and "power".

Generally, the profiles of the masculine motivators were quite similar across the two high ability groups (Figures 16 & 17), when compared with the feminine profiles. The females chose the masculine motivators to a greater extent than the males chose the feminine motivators. If these motivators are stereotypically masculine and feminine as the literature indicates, this suggests the females' greater tendency towards androgyny than the high ability males' tendency, which leaned towards exaggerated masculinity.

Figures 18 & 19 compare the motivators receiving the majority of responses of high ability females with both average ability females (Figure 18) and high ability males (Figure 19), thus eliminating the sex variable and the ability variable, respectively. Figure 18 demonstrates that there is very little difference across ability groups, and Figure 19 indicates a difference between the sexes within the high ability group. Although the data was not examined for statistical differences, the different profiles are at least interesting.

Analysis of the "Strength of Feelings" Question (Question #6). The greater tendency of females towards androgyny was reinforced by the graph shown in Figure 9, which summarizes the responses to the list of careers presented in the "strength of feelings" question (#6). From this graph, the greater degree of androgyny exhibited by the female

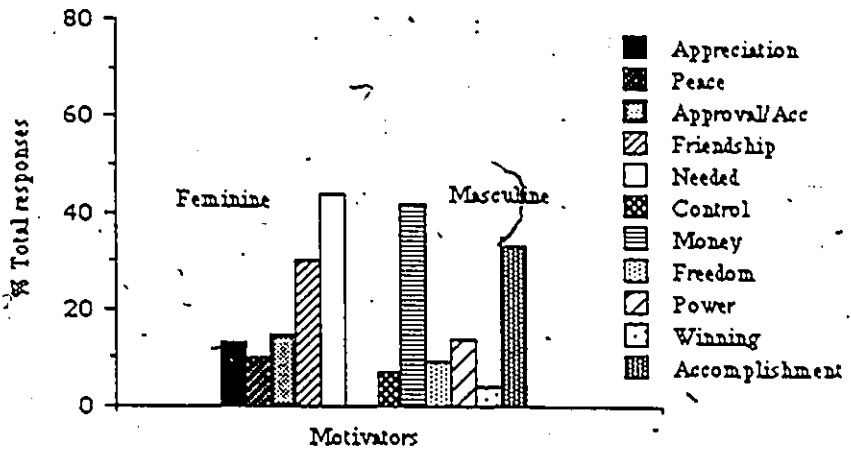


Figure 16: Motivators for High Achieving Females

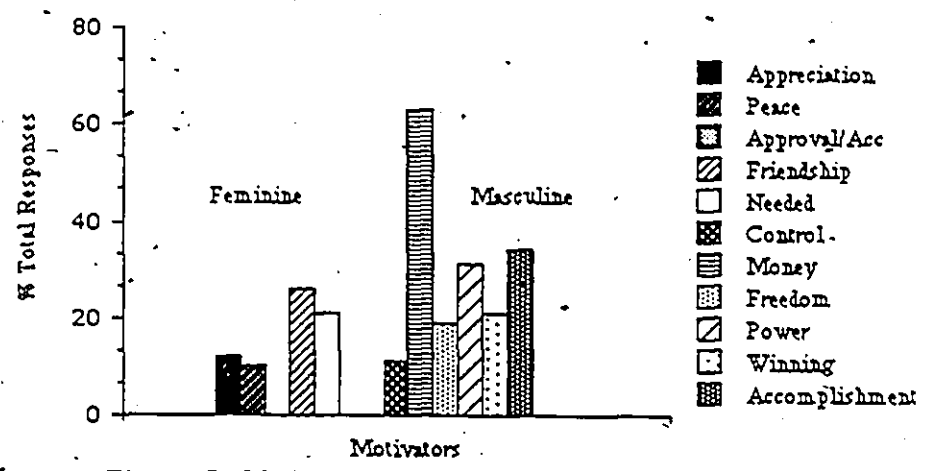


Figure 17: Motivators for High Achieving Males

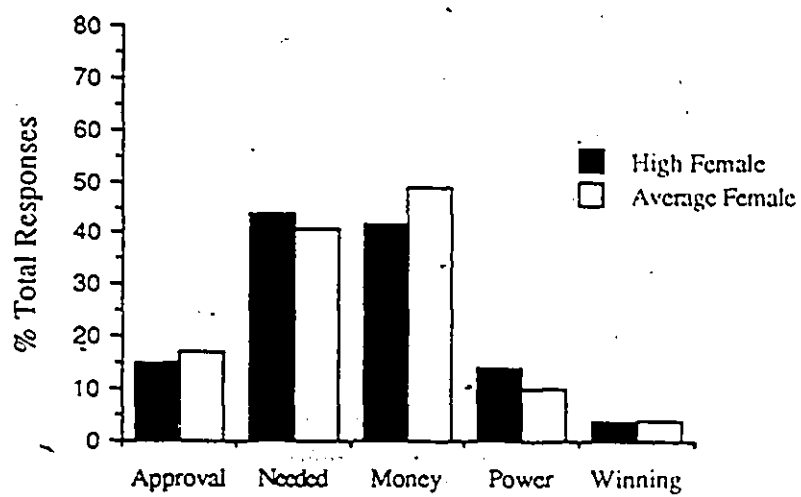


Figure 18: A Comparison of the Main Motivators of High and Average Achieving Females



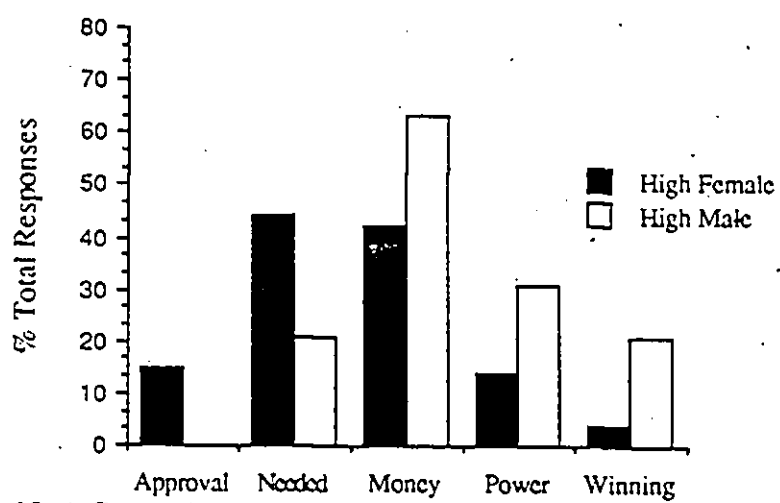


Figure 19: A Comparison of the Main Motivators of High Ability Females and Males

subject groups is evident, and the greater adherence to stereotypically masculine traits and beliefs exhibited by the males is shown, particularly in the high ability male group. The responses given by the females tend to be more androgynous than the male responses which fall more into the masculine zone.

#### Analysis of Other Data

Data other than femininity scores were analyzed numerically as categorizations emerged and responses of subject groups were counted. Questions #1 and #5, although intended mainly for qualitative interpretation, presented data suitable for descriptive analysis and are presented below.

Career Aspirations and Measured Ability. Question #1 provided data revealing the subjects' career aspirations, which were compared to the measured ability of the subjects. The career choices were classified into three categories according to the minimum amount of education necessary for success: (1) non-professional (high school or less), (2) professional/low education (undergraduate degree or college diploma), and (3) professional/high education (post graduate degree, such as LLB, MD, DDS, PhD, CA, DVM, and MBA).

As is shown in Figure 20, the majority of the aspirations across all sex and ability groups fell into one of the two "professional" categories. Once again, a sex difference was evident. Females showed higher educational aspirations than males even across ability groups. The professional careers were chosen by 92% of the high achieving females and 75% of the average achieving females. The high and average achieving males, on the other hand, chose professions only 61% and 65% of the time respectively. The fact that only 61% of the high achieving males chose professional careers may be surprising, considering their ability level. However, it must be noted that 30% of the high achieving males chose sports as a career, which was rated as non-professional because of the amount of education

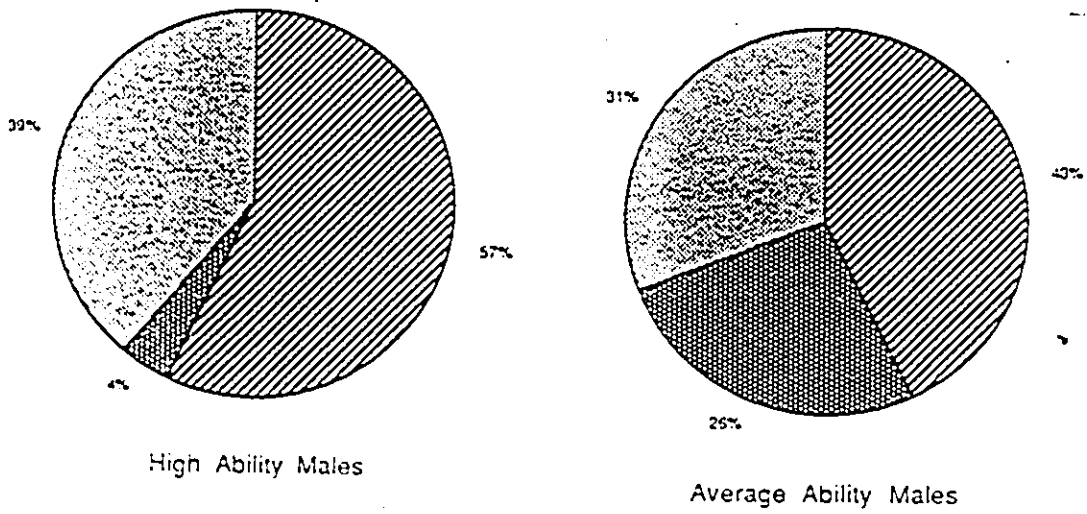
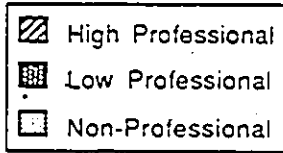
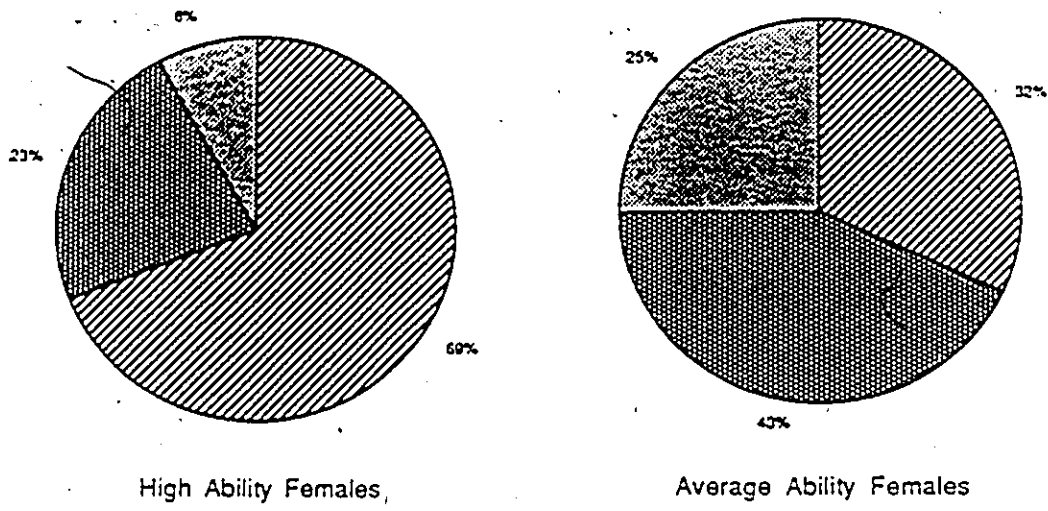


Figure 20: Career Aspirations of Ability Groups

required. When the category of sports is ignored, the sex difference is eliminated, and as shown in Figure 21, the percentage of males choosing postgraduate professions rises dramatically. As exaggerated masculine traits have been previously noted in the high achieving male subject group, it follows that the competitive, aggressive, and masculine lifestyle associated with sports would be appealing to this group. However, in the "motivators" question (#9), "knowledge and wisdom" was given a rating of .49 (number of responses/by the number of subjects) by the high achieving female group, and .32 by the high achieving males (Table 8), perhaps indicating that education was important to both groups. The average achieving males (18%) were approximately as interested in sports as a career as the average achieving female (14%), again showing the strength of the masculinity of the high achieving males.

Aspirations and Expectations. Responses from the "aspirations" question (#1) and the "typical day" question (#5) were compared in order to address the question: "How closely do the descriptions of career aspirations reflect the descriptions of career expectations?" As shown in Table 9, most subject groups specified their type of work in question #5 rather than simply naming their career as "work", and generally expected to achieve their aspirations. Sixty-five percent of the high achieving females, and 57% of the average females felt their aspirations would be fulfilled, while 57% of the high achieving males and 61% of the average achieving males saw this as being true. Thirty-one percent, 36%, 22%, and 26% of the respective groups did not state what their "expected" career would be and simply labelled it "work". However, the males of both ability groups did expect their future careers to be different from their aspirations to a greater extent than the females. This was possibly a result of the males aspiring to become professional athletes, and yet realizing their chance of success in these careers was limited, they had different expectations. More of the females did not specify the type of work they would be doing when 25 or 30 years old, but simply said they would "work". The results of a chi square

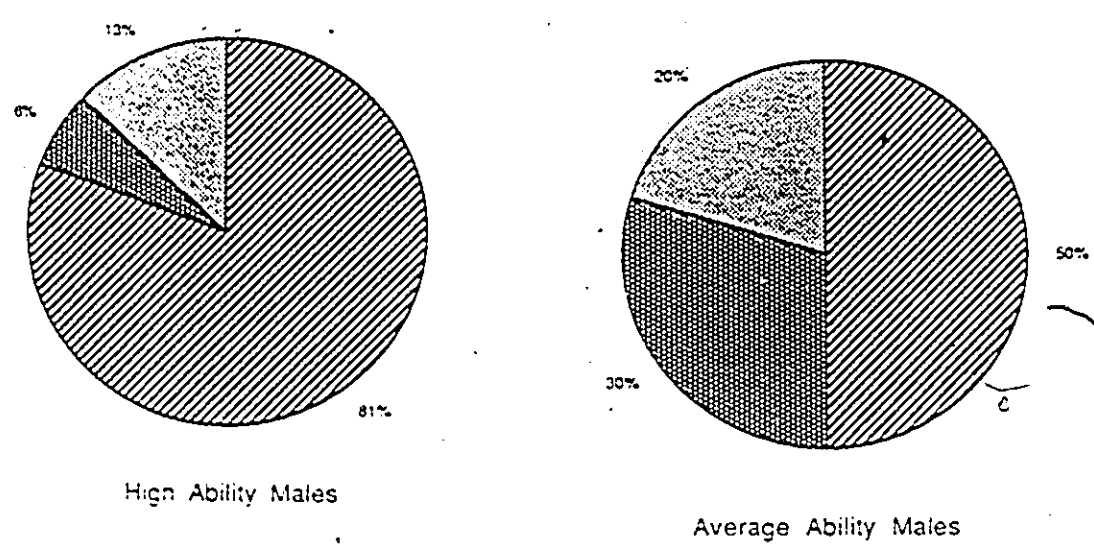
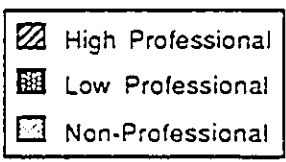
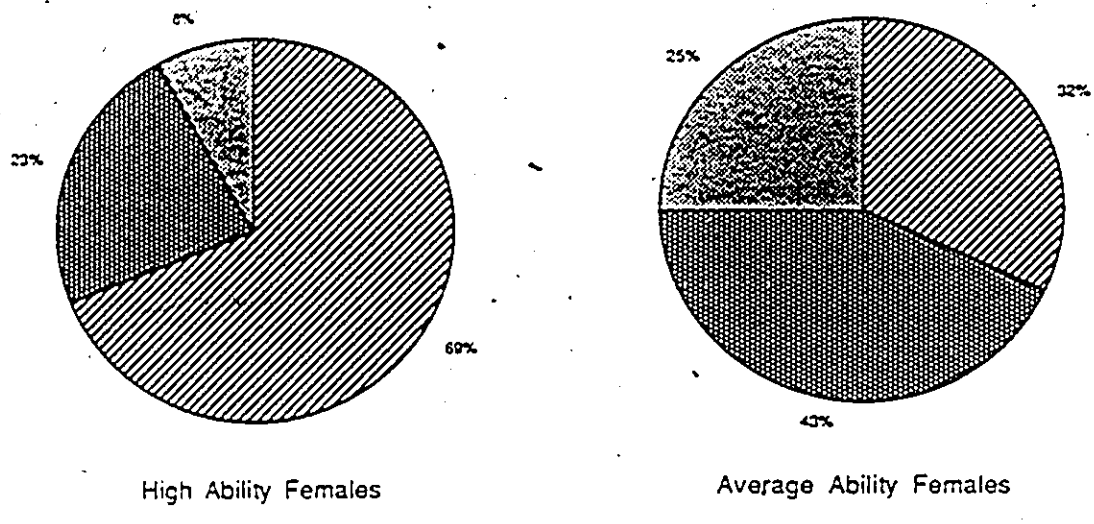


Figure 21: Career Aspirations of Ability Groups with the Elimination of "Sports" as a Career Category

Table 8  
Knowledge and Wisdom as a Motivator

---

SCORE (responses/no. of subjects)	
High Ability Female	.49
High Ability Male	.32
Average Ability Female	.31
Average Ability Male	.14

---

Table 9  
Career Aspirations Versus Career Expectations of Ability Groups

% of group responses

Group	Same	Different	Not Specified
High Ability Female	65	4	31
High Ability Male	57	22	22
Average Ability Female	57	4	36
Average Ability Male	61	13	26

analysis indicate that there is no significant difference between the career aspirations and expectations of the male and female groups ( $\chi^2(1)=2.92, p>.05$ ).

The percentages did not tell the entire story however. The content of the responses suggested that sometimes differences did occur between the aspirations and expectations of the subjects, particularly the females, which did not show up in the statistics. Although most of the females expected that they would have a career or "work" when they were 25 or 30 years old, many of them suggested that family/domestic responsibilities would occupy the majority of their attention. For example, a high ability female aspired to being a lawyer in question #1 and states:

I would be a lawyer. I would have to work hard and go to law school but I would enjoy going to court and defending someone. I would choose it because I could open my own business and no one would tell me what to do.

However, her expectations in the "typical day" question (#5) were that her family would demand the majority of her time, and that her own law practice would not become a reality, suggested by her reference to a "boss". Although she indicated a sense of independence in her aspirations to have her own business, her dependence on others for emotional support becomes evident:

It was a rainy day and I was looking out the window at the storm. My two yr. old girl, Samantha was tugging at my sleeve telling me she HAD to go outside, or else she'd die. It was Mother's day and my daughter gave me a flower that she drew on a piece of paper. My husband gave me a blender and my boss and the rest of the girls I work with in law gave me a microwave. Finally, it was time for Mr. Dressup and I took Sam(antha) downstairs to the T.V. to watch it. Then I walked upstairs to take a nap. When I woke up my little girl was at my side telling me "Daddy" was home. I walked down the steps and started to make lunch. My husband ate the club sandwiches I gave him, told me he had to leave and left. Then I put Sam down for her nap and I went downstairs to clean up the mess she had made. It was 3:30. Jason and Jamie (twin brother and sister) came running in and they each gave me a pussy willow for Mother's day. I told them both thanks very much and sent them upstairs to change their clothes. They were drenched. After they came down they told me what they had done at school. I gave them each a glass of milk and 4 cookies. Then I made dinner while they played with Sam. At 5:00 my husband was home and we all ate supper together. At 6:00 all the kids had



their baths and watched their favorite T.V. show. then at 8:00 all the kids went to bed and we (my husband and I) went for a walk around the park lake. At 9:00 we were settled in bed and turned on our lamp lights to read. Now that was one busy day!

Although the description above describes "Mothers' Day" rather than a "typical day", the fact that the subject chose to describe a day with her family indicated that family was of prime importance to her.

An average ability female who wanted to be a nurse so she could "help out people who need help, people who are sick", described her "typical day" in this way:

I would send my kids to school. Then I would go to work. Come back at noon and give my kids lunch. I would work half day so I could be with my kids. I would play games with them and do housework.

Typical Day. The "typical day" described by the subjects in question #5, clearly discriminated between males and females, and to some extent, between ability groups as well as shown in Figures 22-25. The responses were grouped into eight lifestyle categories: (1) "children", with two sub-categories of "show responsibility for" and "merely interact with", labelled "Kids-R." and "Kids-N.R" in the figures representing "Responsibility" and "No-Responsibility" respectively; (2) "Spouse", with sub-categories of "merely mention" and "describes responsibilities of", which are labelled "Spouse-M." and "Spouse-R."; (3) "dependence/independence"; (4) "Job", with no mention made of particular responsibilities or duties; (5) "Career", with specific discussion and description of responsibilities; (6) "responsibility for domestic duties", labelled "Domestic Duties" in the figures; (7) "importance of others in their lives", labelled "Others"; and (8) "sports and cars". Figures 22-25 show the different lifestyle profiles for each group, and four relationships can be extracted from them. First, it was evident from the responses that both female groups had more to say than their male counterparts. A total of 111 responses were given by the high achieving female group, and 73 by the average female group, as

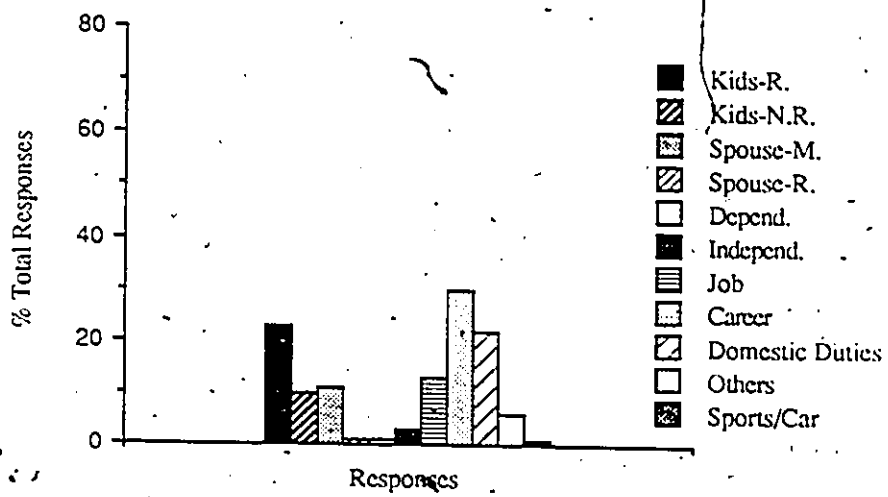


Figure 22: "Typical Day" Responses of High Ability Females

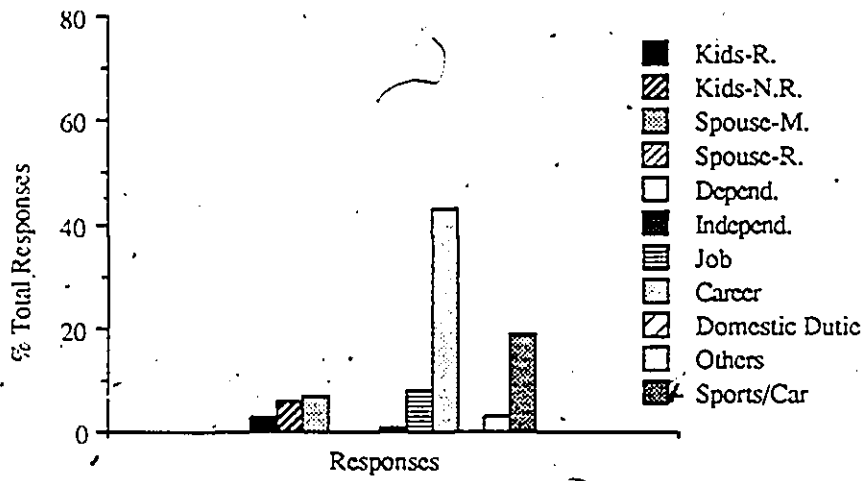


Figure 23: "Typical Day" Responses of High Ability Males

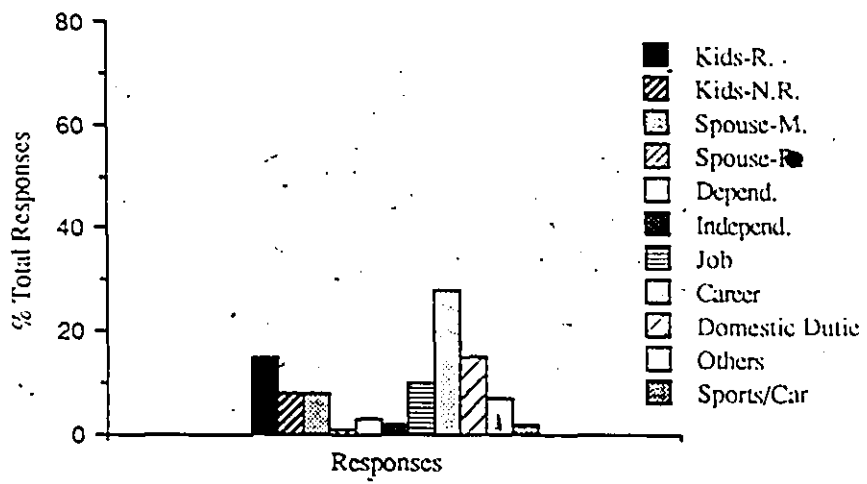


Figure 24: "Typical Day" Responses of Average Ability Females

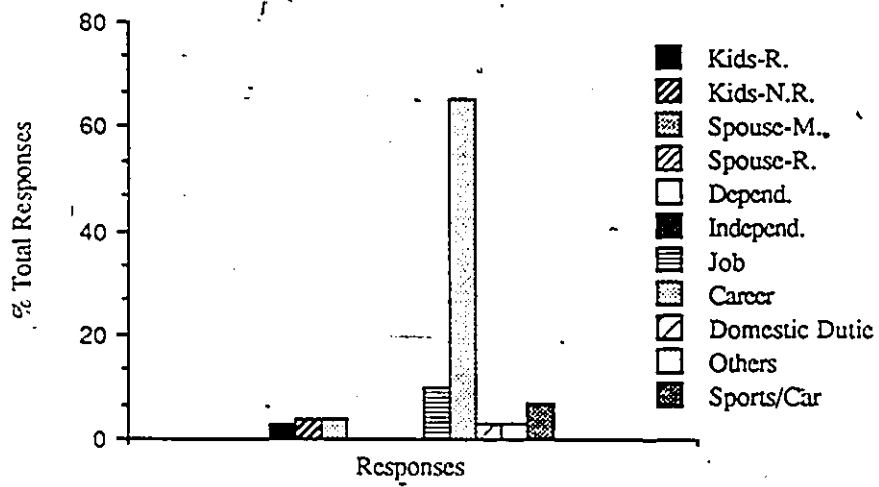


Figure 25: "Typical Day" Responses of Average Ability Males

compared to 46 and 18 respectively for the male groups. Because of the different N's for each subject group however, a ratio of numbers of responses to numbers of subjects was determined (Ex.  $111/26=4.27$ ; ie. number of responses/number of subjects). The ratings were as follows: high achieving females, 4.27 (ie. each subject in this group gave an average of 4.27 responses); average achieving females, 2.60; high achieving males, 2.00; and average achieving males, .78. This difference in quantity of responses could be a factor in the results of the analysis and the interpretation of the responses, and could possibly have been eliminated had interviews been conducted for this section in place of the questionnaire. Second, the profiles of the two female groups were similar, as were those of the two male groups. Third, domestic responsibilities were discussed more by the females than the males, with no mention made at all by the high achieving males (ratio=0), and just one mention by the average male group for a ratio of .04 compared to ratios of .88 and .32 respectively for the female groups. Interestingly, the high achieving females mentioned domestic responsibilities more often than any other category, the next highest mentioned category being "career" at 22 responses or .85, which demonstrated the confidence and willingness of this group to manage career and home. Fourth, females mentioned the importance of others in their lives more often than did the males: high achieving females, .35, and average achieving females, .39 as compared to the males at .13 and .09 respectively.

Occupations of Parents. Questions #7 and #8 revealed the occupations of the subjects' parents. The career aspirations of the subjects were compared to the occupations of their parents, and classified into four categories: (1) same educational level as their parents; (2) higher educational level; (3) lower level; (4) didn't know their parent's occupation. Table 10 suggests there is no relationship between the subjects' career aspirations and the occupations of their parents at any ability level. All subject groups generally had higher aspirations than their parents.

Table 10

## Career Aspirational Levels of Subject Groups Versus Careers of Parents

Group		Same % of total group	Higher %	Lower %	Don't know %
High Ability Female	Mother	12	73	0	15
	Father	30	54	8	8
High Ability Male	Mother	26	57	13	4
	Father	22	48	22	8
Average Ability Female	Mother	21	68	4	7
	Father	39	57	0	4
Average Ability Male	Mother	17	66	13	4
	Father	39	48	9	4

The high ability groups had the greatest percentage of mothers who were housewives (females, 31%; males 39%) as compared to the average ability groups (females 18%; males 22%). There were no "housewife/househusband" responses from any of the subject groups, even from those individuals whose mothers were housewives, suggesting that the occupation of the mother was not a factor in choice of future career or even in whether to choose a career outside the home. Although many studies have linked working mothers with non-traditional career choices for daughters (Bacon & Lerner, 1975; Berlin, 1976), in this study the fact that mothers worked outside the home had no apparent effect on traditional or non-traditional career choices for their daughters. Eighty-eight percent of those high achieving females with non-working mothers chose non-traditional careers, and 12% chose traditional careers. Of those high achieving females with mothers working outside the home, 59% chose non-traditional careers, 41% chose traditional careers (Table 11). The results of a chi square analysis indicate that the working status of mothers had no effect on the choice of careers of the high achieving females in this study ( $\chi^2(1) = 2.2$ ,  $p > .05$ ).

A similar pattern was true for the male subjects, with all of the high ability males and 60% of those average ability males with mothers not working outside the home choosing traditional careers (Table 12). A chi square analysis indicates no significant relationship between working mothers and career choices of the high achieving males ( $\chi^2(1) = 0$ ,  $p > .05$ ). Any subjects (male or female) mentioning family/domestic responsibilities did so in conjunction with their careers. One high ability female who aspired to be a doctor and whose mother was a housewife, made the following comments when describing what she would like to be when she grows up:

I think I would like to be a doctor because I think it would be exciting and challenging. It would be helpful to others and make good money. You'd never know what would happen next. There are so many choices too! I could be a surgeon or an obstetrician (those are on top of my list) or a physician or just a general doctor. Sounds neat, doesn't it!?



Table 11  
Work Status of Mothers and the Career Aspirations of  
High Achieving Females

	Non-traditional Career Aspiration		Traditional Career Aspiration	
Non-working mother	7/8	88%	1/8	12%
Working mother	10/17	59%	7/17	41%

Table 12  
Work Status of Mothers and the Career Aspirations of  
High Achieving Males

	Non-traditional Career Aspiration		Traditional Career Aspiration	
Non-working mother	3/5	60%	2/5	40%
Working mother	11/23	48%	12/23	52%

She describes her "typical day" in the following way:

It's 3:15 am, I'm sound asleep in my small apartment. BEEP! BEEP! BEEP! I'm jolted out of my sleep to my emergency beeper. The way it's beeping this must be serious. I get to the hospital as fast as I can. There's been a collision between a Greyhound bus and a oil tanker. The people on night duty on the emergency ward are packed to the rafters in patients. Emergency staff has been called in. I work trying to fix up the patients until 10:30, some day off! Everything was under control by 11:00 and emergency staff was allowed to return home. I can't wait to get back to bed!

Another female of high ability who aspired to be a paleontologist, and whose mother worked at home described her "typical day", with no mention of family or domestic responsibilities:

I would get up at 7:00 and get dressed eat breakfast and go to work. At work I would search for places where bones are, and if I found a place, I would dig up dinosaur bones, put them in a truck, take them to a museum. I would be finished work at 7:00 pm.

An average ability female whose mother is a housewife would like to be an electrician, and describes her "typical day" as follows:

I would get up ready for work, go to work. I had to climb up 30 poles and change the lights. Then I would have coffee and eat my lunch. then I had to cut off 100 houses because a line broke. Then come home to my kids and husbent, then go to my baseball game.

Thus, the occupation of the parents, or even whether or not the mother worked outside the home seemed to have little relationship to career choices of the subjects.

#### Qualitative Data

Responses to questions #1 and #5 provided qualitative data which broadened and enriched the understandings gained from the study. They provided some insight into the

personalities and feelings of the subjects which may not emerge from the descriptive and statistical analysis; inferences drawn from the quotations are my subjective interpretations. The quotes presented are exact and any grammatical or spelling errors are those of the subjects. The major conclusions from question #1 ("If you could have any career you wanted when you grow up, what would it be?") were that the high ability groups exhibited confidence in their ability to succeed, had given thought to their future roles in society, and had considered their own personalities when making career choices. From the high ability males:

- |                 |   |
|-----------------|---|
| scientist       | "I am capable of doing it."   |
| lawyer          | "People can count on me for a good job. I would have responsibilities."   |
| scientist       | "I think this is a good accomplishment. All scientists need brains and that's exactly what I've got. I think it would be challenging to do research and help in finding medicines to help aids, cancer, ms, and lots of other diseases that we have no control over." |
| veterinarian    | "I want to be there to help cure animals and help them in any way I can."   |
| accountant      | "I have chose this because I like working with math and numbers."   |
| fireman         | "I would choose it because I like helping people out. I got the idea from helping people out and learning some stuff about it and that I will be fast in putting things on."  |
| inventor        | "I would invent devices that could possibly give the world peace and freedom."  |
| baseball player | "...I could be a real darn good one. I'm not bragging but   |

I know I can be a real good player."

lawyer

"I will help people with court cases, real estate and money problems, divorces and any other things people might need a lawyer for...I would make a good lawyer."

The high ability females also exhibited confidence, having given thought to their personalities in career choices, and the contributions they might make to society:

scientist

"I want to solve future problems. I think I could accomplish these tasks."

lawyer

"I would fight for people's rights, I would be able to do it easily."

lawyer

"I could be a good one and I would work very hard."

doctor

"I enjoy dissection and reading my dad's anatomy books so I would be successful."

prime minister

"It fits my special abilities and I'm smart."

teacher

"I think teaching is a vital part of our system. I feel that if I had a chance I could change it drastically. For the better."

surgeon

"I would like to be famous and known around the world."

dentist

"I think that if people wanted to have straight teeth I could help them. Plus I like braces."

scientist

"I would discover cures for diseases such as diabetes and cancer. My brother is a diabetic and I was worried about him."

lawyer

"I would be a lawyer because I am interested in fighting for people's rights even if they are good or bad it really doesn't bother me but if someone else is trying to get them in trouble without any proof I'd fight."

- doctor "I would be able to help people. Because its a interesting good-paying job. I like helping people. And, it seems like less and less people are training to be a doctor. In the future there may be a shortage or something and I may be needed."
- botanist "I'd choose this because I find it very interesting. Cross breeding or researching plants would be great. After reading about flowers in science I was really interested. It would be great to work in a lab."

In comparison, the two average ability groups were not as confident in their abilities, nor had they given as much thought to the contributions they would make to society. They were more interested in choosing careers because of their "fun" value. From the average ability males:

- navy "I would fly a plane. I choose it because its fun and I got the idea from Top Gun."
- pilot "If I'll be a pilot would fly. I like to fly! I think its fun. I love jets."
- judge "I choose it because it sounds quite fun...."
- pilot "...because I flown and I think it is fun."
- dentist "...being a dentist looks fun because you can look at other peoples teeth and see if they have any cavaties."
- N.H.L. "I would like to be a N.H.L. hockey player because I would be able to do lots of things such as having fun, meeting new people, travel to alot of places..."
- N.H.L. "I chose hockey because it is fun and a challenge and

I have been playing since I was 6 years old."  
 acrobat "I will go to the circus and ill choose it because I like  
 doing it. I thought it was fun and all my friends say  
 I'm flexible."

From the average ability females:

veterinarian "You get to wash dogs and trim them and I love  
 dogs. We take our dog there and its fun."

teacher "I would teach and have fun being around children.  
 It looks like my teacher has a lot of fun teaching."

teacher "I had this idea in grade 1 because it was fun writing  
 on the blackboard. Then when I started babysitting I  
 found out I liked kids...."

gymnast "I would like to be a gymnast because it is fun. I am  
 fairly good at it so it would be tons of fun."

hairdresser "I don't really have a career I would like to do but I  
 like hair dressing... it would be fun doing different  
 kinds of peoples hair...I just don't know what to do  
 for a career. Maybe I could run a daycare or  
 something."

teacher "Its fun."

gymnastics teacher "It would be fun to teach other children to have fun  
 doing gymnastics."

police "I think it would be fun."

The male groups emphasized money as an important aspect of their career choices  
 as was indicated in Figures 14, 15, 16, and 17. Although the female groups chose money

as a motivator but to a much lesser extent than the males as indicated in Figures 14 - 17, they seldom even mentioned money in their open responses. They seemed to feel their families played a more significant role. The following quotes from high ability males exemplify the importance of money to them:

- |                   |   |
|-------------------|---|
| lawyer            | "I would get a lot of money."   |
| president of U.S. | "I would have power and lots and lots of money."  |
| scientist         | "If I were a scientist I could have money and I'd have lots of opportunities to do what I want."  |
| basketball player | "...because there is lots of money involved."   |
| movie director    | "I will be famous and I will make money...and you could make a lot of cash."  |
| N.H.L.            | "if you are good at it you get paid a lot of money."  |
| baseball player   | "It is fun and you make lots of cash."  |
| doctor            | "I would be helping people and I would also be receiving a lot of money."   |
| accountant        | "I think that I will be an accountant when I grow up. I have chosen this because it is a good paying job...."                                       |
| baseball player   | "In this career I would make tons of money."  |
| N.H.L.            | "I would be playing for the Edmonton Oilers, with a ten year contract for 12 million dollars."  |
| lawyer            | "I would choose it for two reasons, number one because it is a good paying job and #2 I thought that my younger brothers could become my partners." |

The following quotes from the average ability males reinforce the importance of money to them:



- doctor "I will help people feel better, its makes lots of money."
- judge "...they make lots of money."
- lawyer "Money."
- dentist "Another thing is that you get a lot of money."
- N.H.L. "I would like to be a N.H.L. hockey player because I would be able to do lots of things such as having fun, make a lot of money...."
- skateboarder "I choosed skateboarding because it is fun and makes lots of money...."
- doctor "It gives you money and you get to know other people."

Only the female groups mentioned their families to any great extent, and the high ability females mentioned this aspect of their lives more often than the average group. This could be interpreted as meaning stereotypes exert more influence on this group; families are/will be more important to the high ability group, or simply that the high ability females were more thorough in their responses. The high ability females made the following comments regarding the importance of husband and family in their lives:

- teacher "I would choose it because when I have kids I can be a sub, and stay at home, and this job earns enough money so that if my husband died I would still have enough to support my family."
- teacher "I love working with children. I love babies. If I was a teacher I could still spent time with my family. I would have a good education so when times are tough I could get a job. I will not work until my kids are old enough to go to school. My husband will have a very good education and a

job."

—fashion designer

"This will be before I have kids. My job will be different after that."

Similar comments were made by average ability females as well:

"...In my life my children and husband would be very important, even more important than my job."

Question #5 ("typical day") revealed similar differences between the sexes.

Females of both ability groups had more to say than the males about their "typical day"; all those who even mentioned "family", placed emphasis on these responsibilities, with only slight mention of careers by these subjects. The careers to which they aspired in question #1 are included in parentheses. Some of the comments from the high achieving females:

— I would wake up at about 5:30 and prepare breakfast and lunches and do little jobs around the house that need to be done.... Everyone would go to work or school. We'd get home and I'd make supper. After supper I'd clean up, get ready for tomorrow and spend time with my family. (teacher)

— Well, first I have to get up and get my kids to school. Then I have to wash the dishes, then do my face and hair. And then drive to work, fill out papers for about 2 hours, have a coffee break, then go pick up my kids for lunch and so forth." (nurse)

— In the morning I would go to work at 8:00 am and help people till 12:00 am, come home to my 4 kids Candice, Tyler, Alex and Sam. Have lunch. Send them to school at 12:30. Make my husband lunch for him when he gets home. Go to work at 1:00. Come home at 4:30. Drive my girls to ballet and my boys to soccer. Come home. Make supper and talk to my kids about what happened at school." (dentist)

The average achieving females relate similar patterns of importance of family and domestic responsibilities:

— Oh, I'll probably get home from my well paying job (which I don't know will be) but anyway I'll sit down and my two lovely children (a boy and a girl) will come running up to me and give me a big hug. Then my handsome husband will walk in from his big government job and then we'll go out for supper, come home, go to

bed and wait to go to work in the morning. I hope that's what it will be like.

I would come home from work and find the house in a big mess. I would clean it up. Then I would make supper for my family. I would clean up the table after supper then watch T.V. or go out with some friends. I would put my kids to bed then I would probably go to bed myself.

Some males on the other hand, mentioned wives and families but all emphasized career related activities. Responsibility for domestic chores or child rearing activities played a very minor role in the lives of the male groups, if mentioned at all. For example, some of the high ability males described their typical day as follows:

I would say good-bye to my 3 kids and then go to work in my sports car. I will go to my office in a large sky scraper. I will work with about 5 or 6 clients during my 9 to 5 hours. I will then lock up the office and say good-bye to my secretary and then drive home. When I get home I'll have supper. Then I will do some paperwork and relax for the rest of the afternoon. (lawyer)

It's 5 am and I have to get up to go to work. I cut myself shaving. I grab my lunch and head out. But before that I have to kiss my wife and kids goodbye. My car keeps stalling, then finally it starts. I pull out of the driveway and head out for work. I run into my office, put my feet up on the desk and wait for an important call. RING! RING! Hello, yes [John Doe] please (student's real name eliminated). Yes, this is him. I would like you to send thirty more bolts. Fine that will cost 7000 dollars. Goodbye!! After that call I went home to wrestle with my kids. And

- that's my day. (President of the U.S.A.)

I will have a job and will live in a big house. I'll work in a hospital and I will save lives every day. I will make lots of hard earned money. When I come home a feast will be waiting for me and best of all I would have helped people. (doctor)

I would get married and have one child (boy). I would live in Edmonton because I would be playing for the Oilers. I would buy a Porche for my wife and a lambrogeni for myself. I would retire at 32 and move to California. (N.H.L.)

The average achieving males exhibited a similar pattern of seeing career as far more important than family responsibilities, evidenced by the lack of references to spouse and children:

One of the most typical days of my life would be to accomplish something that nobody has ever done like building a new machine or some kind of thing that would help the future. (vet)

Wake up go to the airport take off at 7:00 am fly to Toronto and back home. (pilot)

If I become a dentist I would be working all the time. After a while it would probably be boring because all you'll see are teeth and tongues. (dentist)

I would be coming out of my 4 door garage in a white Lamborghini Countach and driving to my studio. There I would meet Don Johnson, Bill Cosby and Elizabeth Taylor. After work I would come home to my Beverly Hills mansion and eat feduccini by the fireplace with my wife. (computer technologist scientist)

I would get up at 12:30 in the morning eat and go to work at 2:00 and work on the new data that came in on one of the satellites. I would finish my report around 7:00 and head out to one of the biggest telescopes in the world. I would get there around 8:00 and study the new data not on sheets but in the sky. I would leave around 11:00 pm and go to bed at 2:00 pm. (scientist).

Spouses are mentioned, more often by females, but rarely more than their presence as breadwinners, and are often seen to be another member of the family to be physically and emotionally "looked after". The high ability females made the following comments:

I would get my kids ready for school. I would go to school and teach all day. I would come home prepare supper. After supper I would spend time with my family do the house work and prepare next days lessons. I would not go to work until all my kids are in school. My husband will be at work. My kids will not go to a day home because I will be home. In my family I want identical twins. (teacher).

Wake up, get husband and kids up and off to school and work. Tidy up and go to work. Kids eat at school. Come home from work 4:00 or so, about same time as kids get home from school. Start supper. Do some laundry. Tidy up some more. Have supper. Kids do dishes! Help kids with homework or whatever. put kids to bed, talk to husband, go to sleep. (doctor)

Similar attitudes exist among the average ability females as well:

First I'll wake up, put on a little make-up. Make breakfast. Then wake up my kids and my husband and feed them...

...send kids off to school and husband to work.

Sometimes the husbands are not even mentioned:

I get up in the morning at 6:30, get my kids up (I want a girl, Arora, and a boy, Spike), get ready for work and drive the kids to school then go to work. Stay till 4:00 every night come home make supper wash dishes go shopping if needed and

put kids to sleep at 8:30 stay up watch T.V and go to bed at 10:30 at the latest.  
(kindergarten teacher)

Get ready for work. Take the kids (2) to school. Go to the dentist office (work). -  
Work from 8:00am until noon. Go home, make lunch for kids. Eat and go back to  
work. Work from 1:00 until 5:30. Go pick up the kids from the babysitter and  
take them home. Make dinner, eat, kids play with friends while I clean up the  
house for 1 1/2 hours. Kids come home and family plays a few games. Kids go to  
bed. Watch T.V. for a few hours and go to bed. (dentist)

The average female group shows similar trends:

Get up have to go teaching all day get home feed your kids.

Drive kids to school then go to work then come home help kids with homework  
then eat then take my kids to there recreational teams sports.

However, there are exceptions to this trend as exemplified by the following quotes  
from an average and a high ability female respectively:

I would go to my job as a veterinarian. I would work long hours but I would get  
off for lunch. I would have 2 children which would go to a playschool. I would  
work from 7:00 - 8:00. My husband would pick up the children after his work as a  
lawyer and would make supper. I would come home and help set the table then  
eat...

...I'd have to rush into the lab and start mixing chemicals. I'd work with people  
who were very clever and educated. After a long day at work I'd start moving back  
towards home. My husband would have already cooked dinner and put the kids  
into bed. I'd grab the daily newspaper and flop into my favorite chair to just enjoy  
myself.

It is interesting to note that the mother of the subject quoted first "works at a trailer factory"  
and of the second is "an unemployed school teacher".

Although those female subjects who mention family seemed to place it as the major  
responsibility in their life, there were also those females who do not mention it at all and  
vision their career as being the most important aspect of their day, as was exemplified in  
the earlier quote from the female "physician" who expected to rise at 3:15 am. to rush to  
the emergency ward at the hospital:

I would wake up early and go to my vet clinic. I would check the animals water and food. Maybe clean up a little bit. If a dog or animal was sick and stayed overnight I would check to see if it was alright. I would see all the people who had an appointment and make sure their pets were healthy. At about 6:30 I would go home. During the time I am at work till the time I go home I might also work in some of my book keeping.

I would have to be at the airport on time so I wouldn't miss the flight for Spain, and then France and then Nova Scotia. I would get my uniform on and drive to work. Getting the plane seats ready, and the pillows fluffy and blankets folded, would take at least 3 stewardesses. When the people get on in 5 minutes, me, and two other stewardesses, Jane and Mellisa, would take care of the passengers until we got home. After being on a plane for two days, gets tiring.

One high ability female subject who aspired to become a doctor did not mention either career or family when describing her "typical day", but showed evidence of concerns existing in other areas of her life, which may be totally unrelated to the effects of gender-role stereotypes:

I would feel like I'm sad. I might have no one to make me happy and no one to take care of me.

Thus, from the above quotations, sex differences seemed to emerge. Females placed emphasis on family and domestic responsibilities; males on money and careers. Dependence on others seemed more common to the female groups, while males exhibited more independence and self-reliance in their lives generally, and more specifically in their careers.

## CHAPTER V. MAJOR FINDINGS

### Influence of Gender-Role Stereotypes

The results of this study confirmed the influence of gender-role stereotypes on the participating pre-adolescent children as indicated by the correlations, analyses of variance, and qualitative data. -Males and females generally conformed to traditional beliefs regarding gender-roles for themselves and for their opposite sex counterparts, however both female groups tended slightly towards more androgynous attitudes than the male groups.

### Gender-Role Stereotypes and Ability

Ability failed to correlate significantly with Femininity Scores, demonstrating that stereotypical attitudes and beliefs seemed to be unrelated to intellectual ability. There could be many explanations for why a significant ability effect was not demonstrated; for example: (1) Perhaps there should have been a greater restriction on the ability level of the high achievement groups. Thus, the use of a more stringent definition of high-ability might have resulted in the achievement of a significant correlation. Grouping subjects as simply high or average, may have restricted the range of individual differences and entering the individual achievement scores of the subjects rather than simply their groupings would perhaps have shown trends within the ability groups themselves. (2) The assumption that the grade five and six students were "pre-adolescent" may have been in error, particularly as the study was conducted towards the end of the school year, when the subjects were

closer to grades six and seven and perhaps were already into puberty. The onset of puberty may lead to additional peer-pressures to conform to gender-role stereotypes, thereby biasing the results in favor of stereotyping. Perhaps a younger (grade four and five) or older (post-high school) age group would have presented different results. (3) The trends in ability may indeed be there and simply require a larger sample for them to become significant. (4) Perhaps ability simply is not related to the effects of stereotyping!

### Gender-Role Stereotypes and Sex

A strong relationship between sex and gender-role stereotypes was demonstrated through the results of the correlations, analyses of variance, and qualitative information gained from the open-ended questions. Sex correlated significantly with stereotypical attitudes, as males and females conformed to traditional beliefs regarding the gender-roles for themselves and for their opposite sex counterparts. High ability males exhibited greater adherence to stereotypical attitudes in comparison to the other three subject groups and both the female groups tended more towards androgyny than the male subjects. This greater tendency toward masculinity in the male subjects and androgyny in female subjects, may be a result of the selection procedure. Perhaps the method used to select the sample was biased towards masculinity, that is, those subjects exhibiting more masculine attitudes than the general population may have been selected for participation. If perhaps the achievement tests themselves were in some way a measure of masculinity (as has been suggested by Anastasi, cited in Klein, 1986), then adherence to masculine attitudes would facilitate success on the test. This would manifest itself in lower femininity scores for both males and females, thus a more masculine profile for the males and a more androgynous profile for the females would emerge. What is assumed to be a relationship between sex and the effect of gender-role stereotypes may be a bias in selection procedures. Whether or not this is the case, there did appear to be a relationship between sex and stereotypic attitudes.



The Femininity Scores and the qualitative data revealed other differences between the sexes. Females tended to choose typically feminine careers and boys typically masculine careers, although the girls' career-choices were more varied as they perceived a wider range of career options as being available to them. They did not see themselves as being as limited to the traditionally "feminine" careers as the boys did to the traditionally "masculine".

Another appreciable sex difference was found in the factors motivating the students towards their career choices. The career choices of the females were motivated more by the desire to be "needed", for "friendship", and for "approval"; whereas the males tended to view "power" and "winning" as playing important roles in their career choices. Both sexes were motivated to a great extent by the desire for money.

Further sex differences became evident through interpretation of the qualitative data. The descriptions of the "typical day in the future" demonstrated that females were more concerned with family life and domestic responsibilities than with their careers, and expected to maintain a balance between both. However, very few specified choosing career over family and none chose "housewife" as their only occupation. On the other hand, all males placed more emphasis on career and none mentioned balancing career with family. The mention of domestic and family responsibilities by the males was almost non-existent.

#### Measured Abilities and Career Choice

Careers chosen by the subject groups generally reflected a recognition of their abilities as measured by the Canadian Achievement Test. The high achieving females almost consistently chose professional occupations, which may reflect their emphasis on "accomplishment" as a motivating force in their choice of career. The high achieving males also chose professional occupations to a great extent, if the category of "sports" was

eliminated from their profile. The results showed some differences across ability groups in regard to choice of career. The higher achieving groups chose professional careers demanding high educational levels more often than the average ability groups, which selected low professional or non-professional, suggesting that generally the subjects chose careers appropriate to their abilities, at least in terms of educational levels currently considered appropriate for those careers.

#### Career Aspirations Related to Expectations

The career expectations of all subject groups generally reflected their aspirations where both were stated, although the females and especially females of high ability expected a division of their time and attention between home and career. This sharing of attention did not seem to present concerns for the subjects and confidence in their ability to handle both career and domestic responsibilities was evident. Very few expectations were shown towards the husband's responsibility in domestic and child rearing practices.

#### Career Choices of Subjects and Careers of Parents

The careers of the parents had little bearing on the career choices of their children, and most children had higher aspirations than the occupational levels of their parents. Whether the parents worked or not had no apparent relationship to the aspirations of the subjects, and even those females whose mothers were working in the home aspired to balancing both non-traditional careers and families.

#### Other Variables Affecting Children's Career Choices

A discussion of the career choices of children would not be complete without the mention of several factors other than gender-role stereotypes that may interact within a child's world to influence his/her career attitudes and plans. The exposure to many and a

variety of occupations presents alternatives from which informed choices may be made. Children who are not aware of certain careers are not free to consider them as choices.

Role models are also important influences to a child's attitudes toward possible career choices. Girls who are seldom exposed to same-sex role models in a particular occupation may find it difficult to consider that career, and conversely, those girls who are exposed to women in a variety of fields will envision those fields as being real choices for themselves. These role models can be presented through the media and through textbooks as well as within the child's life experience.

The socio-economic level of the child may play a significant role in determining career plans. It may be that generally in homes of higher socio-economic levels, the environment may be more conducive to providing exposure to a greater number of role models and occupational choices, to encouraging non-traditional career choices, and to supplying an enriched environment that will foster independency of thought and action.

Any individual's choice of career will reflect the personality of that individual, which will of course, vary from one child to another simply by virtue of individual differences. Some children will be more outgoing and aggressive, while others will prefer to be contemplative and shy, and will choose occupations accordingly.

## CHAPTER VI. DISCUSSION

The results of this study show that gender-role stereotypes are related to career choice and aspirations in pre-adolescent children, regardless of ability level. The influence of stereotypes is discouraging in itself, but results that indicate they are just as powerful at high ability levels is even more disheartening. Assuming that academically high achieving children will continue to achieve, will most likely occupy positions of leadership and prestige as adults, and will be capable of making positive contributions to society through success in these occupational positions, the benefits to the individual and to society of encouraging all those of high ability towards these careers are clear. Both males and females in occupational settings have much to offer society, and yet females are disproportionately failing to achieve their occupational potential. Thus, society is left with an untapped and valuable leadership resource and the high ability female may not be achieving her potential, either intellectually or occupationally, partially as a result of gender-role stereotypes.

This study indicates that gender-role stereotypes are influential in our society, and as the school system functions as a reflector of society as well as a shaper of it, the educational system assumes some responsibility for the continuation of gender-role stereotypes. As was supported by the findings of this study, females of all ability levels are continuing to unrealistically believe that they can undertake and be successful at high level occupations as well as totally manage family and household affairs. This

"superwoman" may be quickly disillusioned and may feel inadequate rather than recognize her expectations as being unrealistic. The finding that the males in the study did not consider family responsibilities as part of their future compounds the problem. The females were expected by their male counterparts to assume the majority of the domestic and child-rearing responsibilities. The problem is exacerbated by the strong masculine tendencies of the high achieving males. If we assume that high achieving females will most likely marry high achieving males, then until (or if) these males are able to break out of their exaggerated stereotypical attitudes, their female companions will continue to experience the stress of assuming the responsibilities and attitudes associated with traditional female gender-roles and stereotypical masculine expectations, as well as those associated with career success and achievement. The high ability females may experience greater role conflict than any other subject group, and feel forced to choose between internal desires and ability to achieve in the work force, and external pressures to conform to traditional female behaviors.

The school system can alleviate this conflict to some extent by eliminating gender-role stereotypes from and promoting sex equity in the school environment, thereby removing some of the pressures and expectations to conform to traditional gender-roles. This may serve to reduce the stereotypical attitudes towards both sexes, thus allowing the males to participate more fully in family and domestic matters and the females to pursue careers without the total burden of family responsibilities as well. As the results of this study indicated, the male subjects were also clearly affected by stereotypes and may feel limited in their choices of acceptable lifestyles. Many more options were seen as being realistic career choices by the females in the study than by the males. Just as the occupational world could benefit from the inclusion of more females, so might the familial milieu prosper more fully with greater male influence.

The elimination of a barrier cannot occur without the recognition of its existence.

The place to begin is awareness of its existence - awareness within children, parents, teachers, and administrators. The intent of this study is to foster that awareness and further research will continue to chip away at the gender-role stereotypes barrier.

## BIBLIOGRAPHY

- Anastasi, A. (1982). Psychological testing. New York: McMillan.
- Anastasi, A. (1969). Biographical correlates of artistic and literary creativity in adolescent girls. Journal of Applied Psychology, 53 (4), 267-273.
- Anastasi, A. (1973). Sex equity in testing. In S.S. Klein (Ed.), Handbook for achieving sex equity through education. Baltimore, MD.: John Hopkins.
- Bacon, C., & Lerner, R. M. (1975). Effects of maternal employment status on the development of vocational role perception in females. The Journal of Genetic Psychology, 126, 187-193.
- Bandura, A. (1977). Social learning theory. Englewood Cliffs, N.J.: Prentice-Hall.
- Barnhart, R. S. (1983, November). Children's sex-typed views of traditional occupational roles. The School Counselor, 167-170.
- Bartwick, J. M. (1971). Psychology of women. New York: Harper & Row.
- Bassett, I. (1985). The Bassett report: Career success and Canadian women. Toronto, Ont.: Collins.
- Bem, S. L. (1975, September). Androgyny vs. the tight little lives of fluffy women and chesty men. Psychology Today, 59-62.
- Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. Psychological Review, 88, 354-364.
- Benbow, C.P. (1986). Physiological correlates of extreme intellectual precocity. Neuropsychologia, 24 (5), 719-725.
- Birk, J.M. & Blimline, C.A. (1984). Parents as career development facilitators: An untapped resource for the counselor. The School Counselor, 31(4), 310-317.
- Broverman, I. K. et al. (1972). Sex-role stereotypes: A current appraisal. Journal of Social Issues, 28, (2), 59-78.
- Burlin, F. (1976). The relationship of parental education and maternal work and occupation status to occupational aspirations in adolescent females. The Journal of Vocational Behavior, 9(1), 99-103.
- Callahan, C.M. (1980). The gifted girl: An anomaly? Roeper Review, 2(3), 16-20.
- Canadian Achievement Test (1982). Test coordinator's handbook, Form A. Canadian Test Center, Toronto: McGraw-Hill Ryerson.

- Clark, B. (1983). Growing up gifted: Developing the potential of gifted children at home and at school. Toronto: Charles E. Merrill.
- Coleman, L.J. (1985). Schooling the gifted. Don Mills, Ontario: Addison-Wesley.
- Cooley, D., Chauvin, J., & Karnes, F. (1984). Gifted females: A comparison of attitudes by male and female teachers. Roeper Review, 6 (3), 164-167.
- Davis, G. A. & Rimm, S. B. (1985). Education of the gifted and talented. New Jersey: Prentice Hall.
- Dolny, C. (1985). University of Toronto schools' gifted students career and family plans. Roeper Review, 8 (3), 160-162.
- Eccles, J. S. (1985). Why doesn't Jane run? Sex differences in educational and occupational patterns. In F.D. Horowitz & M. O'Brien (Eds.), The gifted and talented: Developmental perspectives (pp. 251-295). Washington, D.C.: American Psychological Association.
- Feldman, D.S., Jr., Gagnon, J., Hofman, R., & Simpson, J. (1986). StatView 512+: The Professional Graphic Statistics Utility. Calabasas, CA: Brain Power.
- Foord, J. (1985). Get to work. Toronto: McClelland and Stewart.
- Fox, L. (1976). Career education for gifted pre-adolescents. The Gifted Child Quarterly, 20 (3), 262-273.
- Garrison, V., Stronge, J.H., & Smith, C.R. (1986). Are gifted girls encouraged to achieve their occupational potential? Roeper Review, 9, (2), 101-104.
- Gettys, L.S. & Cann, A. (1981). Children's perceptions of occupational sex stereotypes. Sex Roles, 7, 301-308.
- Gilligan, C. (1982). In a different voice: Psychological theory and women's development. Cambridge, Mass.: Harvard University Press.
- Gottfredson, L. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. Journal of Counselling Psychology, 28, (6), 545-579.
- Greenglass, E. (1982). A world of difference: Gender roles in perspective. Toronto: John Wiley and Sons.
- Greenough, W.T. (1975). Experiential modification of the developing brain. American Scientist, 63, 37-46.
- Gregg, C.H. & Dobson, K. (1980). Occupational and sex-role stereotyping and occupational interests in children. Elementary School Guidance and Counseling, 15, 66-75.
- Groth, N. J. (1975). Success and creativity in male and female professors. The Gifted Child Quarterly, 19 (4), 328-335.



- Groth, N. J. (1976). College student perception of sex-role stereotypes: Ramifications for female creativity. The Gifted Child Quarterly, 20 (3), 327-335.
- Guttentag, M. (1976). Undoing sex stereotypes. New York: McGraw Hill.
- Hageman, M. B. & Gladding, S. T. (1983). The art of career exploration: occupational sex-role stereotyping among elementary school children. Elementary School Guidance and Counseling, 17, 380-387.
- Harris, L.J. (1978). Sex differences in spatial ability: Possible environmental, genetic and neurological factors. In M. Kinsbourne (Ed.), Asymmetrical function of the brain. Cambridge: Cambridge University Press.
- Hoffman, L.W. (1972). Early childhood experiences and women's achievement motives. Journal of Social Issues, 28 (2), 129-155.
- Homer, M.S. (1969). Fail: Bright women. Psychology Today, 3 (6), 36, 38, 62.
- Iglitzen, L. (1972). A child's-eye view of sex-roles. Today's Education, 24, 23-25.
- Jaraska, J. (1986). Sex differences in developmental plasticity of behavior and the brain. In W.T. Greenough & J.M. Juraska (Eds.), Developmental neuropsychobiology (pp. 409-422). Orlando, Fla.: Academic Press.
- Kavrell, S.M., & Peterson, A.C. (1984). Patterns of achievement in early adolescence. In M.L. Maehr & M.W. Stein Kamp (Eds.), Advances in motivation and achievement: Vol. 2, Women and science. A research annual (pp. 51-91). Greenwich, CT: JAI Press.
- Kerr, B. (1985). Smart girls, gifted women: Special guidance concerns. Roepner Review, 8(1), 30-33.
- Kimura, D. (1985, November). Male brain, female brain: the hidden difference. Psychology Today, 50-58.
- Kohlberg, L. (1966). A cognitive-developmental analysis of children's sex-role concepts and attitudes. In E. Maccoby, (Ed.) The development of sex differences. Stanford, Calif.: Stanford Univ. Press.
- Kohn, A.R., & Feidler, F.E. (1961). Age and sex differences in the perceptions of persons. Sociometry, 24.
- Kolb, B. & Whishaw, I. (1984). Fundamentals of human neuropsychology, (2nd ed.). New York: W. H. Freeman.
- Labor Canada, Women's Bureau (1986). When I grow up: Career expectations and aspirations of Canadian school children. Catalogue L016-1528/86E.
- Lavach, J.F. & Lanier, H.B. The motive to avoid success in 7th, 8th, 9th, and 10th grade high-achieving girls. Journal of Educational Research, 68 (6), 216-218.

- Lewis, M. & Weinraub, M. (1973). Origins of early sex-role development. Sex Roles, 5(2), 135-154.
- Lippa, R. (1985). In James V. Mitchell Jr. (Ed.), 9th Mental Measurement Yearbook. Vol. 1, 177.
- Maccoby, E.E. & Jacklin, C.N. (1974). The psychology of sex differences. CA: Stanford University Press.
- Malone, C., & Shope, G. (1978). Career expectations of primary grade children to socio-economic status. The Gifted Child Quarterly, 22(3), 322-324.
- Maynard, F. (1979). Canadian kid and Canadian mom '79. Chatelaine, 52 (1), 29, 30, 56, 57.
- Mischel, W. (1970). Sex typing and socialization. In P.H. Mussen (Ed.) Carmichael's manual of child psychology. New York: Wiley.
- Mussen, P.H. (1969). Early sex role development. In D.A. Goslin (Ed.) Handbook of socialization theory and research. Chicago: Rand McNally.
- Navarre, J. (1980). Is what is good for the gander, good for the goose: Should gifted girls receive differential treatment? Roeper Review, 2, (3), 21-25.
- Newland, T. E. (1976). The gifted in socioeducational perspective. Englewood Cliffs: Prentice-Hall.
- Peterson, C. C. & Peterson, J. L. (1973). Preference for sex of offspring as a measure of change in sex attitudes. Psychology, 10 (2).
- Pogrebin, L.C. (1980). Growing up free: Raising your child in the 80s. Toronto: Bantam Books.
- Rubin, J.Z., Provenzano, F.J. & Luria, Z. (1974). Eye of the beholder: Parents views of sex of newborns. American Journal of Orthopsychiatry, 44 (4), 512-519.
- Schlossberg, N. K., & Goodman, J. (1972). A woman's place: Children's sex stereotyping of occupations. Vocational Guidance Quarterly, 20 (4), 266-278.
- Seavey, C.A., Katz, P.A. & Zalk, S.R. (1975). Effect of gender labels on adult responses to infants. Sex Roles, 1 (2), 123-133.
- Selkow, P. (1984). Effects of maternal employment on kindergarten and first grade children's vocational aspirations. Sex Roles, 11(7/8), 677-690.
- Seigel, C.L.F. (1973). Sex differences in the occupational choices of second graders. Journal of Vocational Behavior, 3 (1), 15-19.
- Shepard, W. O. & Hess, D. T. (1975). Attitudes in four age groups toward sex-role division in adult occupations and activities. Journal of Vocational Behavior, 6, 27-38.

- Signorella, M. L. & Jamison, W. (1986). Masculinity, femininity, androgyny, and cognitive performance: A meta-analysis. Psychological Bulletin, 100 (2), 207-228.
- Statistics Canada (1966, 1975, 1980, 1986). The labor force, Catalogue 71-001.
- Statistics Canada (1986). The labor force. Feature: Occupational trends among women in Canada, 1976-1985, Catalogue 71-001.
- Statistics Canada (1981). Women in the work world, 1981 Census.
- Tibbetts, S. (1975). Sex-role stereotyping in the lower grades: Part of the solution. Journal of Vocational Behavior, 5 (2), 255-261.
- Toran-Allerand, C.D. (1986). Sexual differentiation of the brain. In W.T. Greenough & J.M. Juraska (Eds.), Developmental neuropsychobiology (pp 175-207). Orlando, Fla.: Academic Press.
- Unger, R.K. (1979). Toward a redefinition of sex and gender. American Psychologist, 34 (11), 1085-1093.
- Weeks, M. (1983). A second look at the impact of nontraditional vocational role models and curriculum on the vocational role preferences of kindergarten children. Journal of Vocational Behavior, 23, 64-71.
- Welsh, G. S. (1977). In Blaubergs, M. S. (1980). Sex-role stereotyping and the gifted girl's experience and education. Roeper Review, 2 (3), 13-15.
- Wise, G. W. (1978). The relationship of sex-role perception and levels of self actualization in public school teachers. Sex Roles, 4 (4), 605-617.
- Yanico, B. & Milbauer, T. (1983). Students' self-estimated and actual knowledge of gender traditional and non traditional occupations. Journal of Vocational Behavior, 22, 278-287.
- Zegman, M.A. (1983). The stereotyping of women: Its effects on mental health. In V. Franks, & E. Rothblum (Eds.), Women, weight and health (pp. 172-200) New York: Springer.

Appendix A.  
Parental Consent Form

Dear Parents,

I am conducting a research project for my Master's Thesis in Education at the University of Lethbridge. The topic of my research is career choices of grade five and six students of high and average intellectual ability. Having received approval from your child's principal and teacher, I am now seeking your permission to allow your child to participate in this study. He/she along with other grade five and six students, will be requested to complete a questionnaire concerning his/her career aspirations and expectations. Your child's anonymity will be protected throughout the study and responses will be seen by no one but me.

I would appreciate your consent in allowing your child to participate in this study. If you have any questions regarding the study, please don't hesitate to call me at the university at 329-2253 or my supervisor, Myrna Greene at 329-2424. Copies of the questionnaire can be viewed in the school office.

If you would grant permission for your child to participate in the study, please return the signed form to the school as soon as possible.

Thank you!  
Sincerely,  
Carillon Purvis

I consent to having my child participate in this study.

Name of student: \_\_\_\_\_

Grade: \_\_\_\_\_ Room: \_\_\_\_\_

Signature of Parent/Guardian: \_\_\_\_\_



2. List 2 careers that you would enjoy very much. Check 2 reasons for each of your choices.

I would LOVE to be a \_\_\_\_\_

- It fits my special abilities.
- It would make my parents happy.
- It would give me lots of money.
- I would be able to learn a lot.
- I could make lots of friends.
- I would be able to be the best.
- I would be able to help people.

I would LOVE to be a \_\_\_\_\_

- It fits my special abilities.
- It would make my parents happy.
- It would give me lots of money.
- I would be able to learn a lot.
- I could make lots of friends.
- I would be able to be the best.
- I would be able to help people.

3. List 2 careers that you would BE ABLE to do but probably wouldn't choose.  
Check 2 reasons WHY you might not choose them.

I COULD be a \_\_\_\_\_ but I'm not interested.

- People would think I was weird.
- It would be boring.
- Someone would always be telling me what to do.
- I wouldn't make enough money.
- It would be too lonely.
- I'm not strong enough.
- I would be away from home too much.

I COULD be a \_\_\_\_\_ but I'm not interested.

- People would think I was weird.
- It would be boring.
- Someone would always be telling me what to do.
- I wouldn't make enough money.
- It would be too lonely.
- I'm not strong enough.
- I would be away from home too much.

4. List 2 careers you would NEVER consider for yourself.  
Check 2 reasons WHY you would never even consider them.

I would NEVER be a \_\_\_\_\_.

- It would keep me at home too much.
- I wouldn't be able to think enough or learn new things.
- I wouldn't be able to work with people.
- I couldn't make my own decisions.
- I would have to be outdoors too much.
- It doesn't fit my special abilities.
- My friends wouldn't understand.

I would NEVER be a \_\_\_\_\_.

- It would keep me at home too much.
- I wouldn't be able to think enough or learn new things.
- I wouldn't be able to work with people.
- I couldn't make my own decisions.
- I would have to be outdoors too much.
- It doesn't fit my special abilities.
- My friends wouldn't understand.



5. Describe what you feel will be a typical day in your life when you are 25 or 30 years old. Seem like a long time away?

---

---

---

---

---

---

---

---

---

---

---

---

Use the other side of the page if you plan on a busy day and need more space...

6. Here is a list of careers and career activities.

Put a double check (W) beside 3 that you would consider VERY STRONGLY.

"These would be terrific!"

Put a single check (✓) beside 3 in which you might be interested. Please make these choices different from the choices with a double check. "Hmmm... maybe I would."

Put a zero (0) beside 3 that you would NEVER choose.

"NO WAY!"

- laboratory technician
- someone who fixes things with tiny parts
- someone who would paint a picture
- architect
- someone who would write a book
- someone who works with ideas
- doctor
- sales clerk
- electrician
- hair dresser
- airline pilot
- auto mechanic
- someone who creates things for others to enjoy
- prime minister
- flight attendant
- someone who deals with dangerous situations
- physicist
- president of a company
- someone who works with little children
- scientist
- nurse
- librarian
- someone who would travel far from home
- bank teller
- principal
- secretary
- person who waits on tables
- ballet dancer

7. What is your father's occupation?

---

8. What is your mother's occupation?

---

9. What 5 of the following items do you think will motivate you most in your career? (or in other words, which of these ideas would most make you choose a particular career?) "Yes, this would be important to me..."

Please number them in order of strength of motivation.  
Example: strongest motivator = 1; weakest motivator = 5  
and all those in between.

- \_\_\_ appreciation by others
  - \_\_\_ control
  - \_\_\_ money
  - \_\_\_ freedom
  - \_\_\_ fame
  - \_\_\_ power
  - \_\_\_ peace/harmony
  - \_\_\_ recognition
  - \_\_\_ tradition
  - \_\_\_ approval of others
  - \_\_\_ friendship
  - \_\_\_ knowledge/wisdom
  - \_\_\_ being needed
  - \_\_\_ winning
  - \_\_\_ acceptance
  - \_\_\_ accomplishment
  - \_\_\_ change
-

Appendix C  
Scoring Key for "Reasons" Question

Scoring Key for Question #2:

I would LOVE to be a \_\_\_\_\_

- |  |          |
|--|----------|
| <input type="checkbox"/> It fits my special abilities.   | (N),(IA) |
| <input type="checkbox"/> It would make my parents happy. | (F)      |
| <input type="checkbox"/> It would give me lots of money. | (M)      |
| <input type="checkbox"/> I would be able to learn a lot. | (N),(IA) |
| <input type="checkbox"/> I could make lots of friends.   | (F)      |
| <input type="checkbox"/> I would be able to be the best. | (M)      |
| <input type="checkbox"/> I would be able to help people. | (F)      |

Scoring Key for Question #3:

I COULD be a \_\_\_\_\_ but I'm not interested.

- |   |          |
|---|----------|
| <input type="checkbox"/> People would think I was weird.                | (N)      |
| <input type="checkbox"/> It would be boring.                            | (N),(IA) |
| <input type="checkbox"/> Someone would always be telling me what to do. | (M)      |
| <input type="checkbox"/> I wouldn't make enough money.                  | (M)      |
| <input type="checkbox"/> It would be too lonely.                        | (F)      |
| <input type="checkbox"/> I'm not strong enough.                         | (F)      |
| <input type="checkbox"/> I would be away from home too much.            | (F)      |

Scoring Key for Question #4:

I would NEVER be a \_\_\_\_\_

- |  |          |
|--|----------|
| <input type="checkbox"/> It would keep me at home too much.                      | (M)      |
| <input type="checkbox"/> I wouldn't be able to think enough or learn new things. | (N),(IA) |
| <input type="checkbox"/> I wouldn't be able to work with people.                 | (F)      |
| <input type="checkbox"/> I couldn't make my own decisions.                       | (M)      |
| <input type="checkbox"/> I would have to be outdoors too much.                   | (F)      |
| <input type="checkbox"/> It doesn't fit my special abilities.                    | (N),(IA) |
| <input type="checkbox"/> My friends wouldn't understand.                         | (F)      |

Appendix D  
Scoring Key for "Strength of Feelings" Question

FEM.

3	laboratory technician	(F)
1	someone who fixes things with tiny parts	(M)
2	someone who would paint a picture	(N)
1	architect	(M)
2	someone who would write a book	(N)
2	teacher	(N)
2	someone who works with ideas	(N)
1	doctor	(M)
3	sales clerk	(F)
1	electrician	(M)
3	hair dresser	(F)
1	airline pilot	(M)
1	auto mechanic	(M)
3	someone who creates things for others to enjoy	(F)
1	prime minister	(M)
3	flight attendant	(F)
1	someone who deals with dangerous situations	(M)
1	physicist	(M)
1	president of a company	(M)
3	someone who works with little children	(F)
1	scientist	(M)
3	nurse	(F)
3	librarian	(F)
1	someone who would travel far from home	(M)
3	bank teller	(F)
1	principal	(M)
3	secretary	(F)
3	person who waits on tables	(F)
3	ballet dancer	(F)

Appendix E  
Scoring Key for "Motivators" Question

___ appreciation by others	(F)
___ control	(M)
___ money	(M)
___ freedom	(M)
___ fame	(N)
___ power	(M)
___ peace/harmony	(F)
___ recognition	(F)
___ tradition	(F)
___ approval of others	(F)
___ friendship	(F)
___ knowledge/wisdom	(N)
___ being needed	(F)
___ winning	(M)
___ acceptance	(F)
___ accomplishment	(M)
___ change	(M)