

RELATIONSHIP OF PERSONAL CHARACTERISTICS AND
TYPICALNESS OF OCCUPATION TO OCCUPATIONAL
SUCCESS OF FEMALES

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SUCCESS OF FEMALES

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In order for this study to be completed, 80 working women contributed considerable time and effort in serving as subjects: I wish to acknowledge their generosity. The deviation from the standard Oklahoma State University thesis format followed in this paper was possible through the approval of Dr. Norman Durham, Dean of the Graduate College.

Finally, special thanks to my family and close friends who consistently provided moral support at critical times, and, to Jim and Joshua, we made it!

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INTRODUCTION

The body of this dissertation consists of a complete manuscript for publication, "Personal Factors Related to Typicalness of Career and Success in Active Professional Women." This manuscript was based on the results of the dissertation research of Sue W. Williams and was coauthored by John C. McCullers, dissertation adviser to the first author.

Materials which, according to Oklahoma State University thesis format, are usually included in the main text, e.g., the literature review, are included in the appendices. Also included as appendix material are all supplemental materials (letter to subjects, questionnaire, and interview outline for high success subjects), raw data, and various statistical analyses.

Preliminary reports of this research were presented at the American Home Economics Association conference in St. Louis, Missouri, June, 1979, and the Oklahoma Home Economics Conference, Tulsa, Oklahoma, 1980.

Personal Factors Related to Typicalness of
Career and Success in Active
Professional Women

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INTRODUCTION

This article is based on the doctoral dissertation research of the first author, conducted under the direction of the second author. A preliminary report of the results was presented at the meeting of the American Home Economics Association, St. Louis, 1979. Requests for reprints should be sent to the first author, Department of Family Relations and Child Development, Oklahoma State University, Stillwater, Oklahoma 74074

Running head: Career Typicalness and Success of Professional Women

Abstract

Eighty women from the fields of medicine and law, in careers ranging from very atypical to very traditional for women, were compared on the Wechsler Adult Intelligence Scale (Vocabulary and Block Design subtests), Bem Sex-Role Inventory, Atkinson's measure of achievement motivation, and a childhood experiences questionnaire developed in conjunction with the study. Subjects in atypical, relative to those in typical, careers were found to score higher on cognitive measures, psychological masculinity, and, in law, achievement motivation. Childhood experiences of women in atypical careers included: more traditionally masculine play patterns, greater unhappiness during adolescence, and less coercion by parents to fit a traditionally feminine stereotype.

Personal Factors Related to Typicalness of
Career and Success in Active
Professional Women

American women are entering the work force in increasing numbers. In 1977, 47.8% of females 16 years of age and over participated in the labor force as compared to 38.8% in 1965. Projections are that this accelerating trend will continue (Statistical Abstracts, 1978).

Despite legislation intended to prohibit discrimination in the labor force, women continue to be employed predominantly in low-status, low-salaried positions. The median earnings of working women were 58% that of working men in 1977. Level of education was not the critical factor in this phenomenon. For example, median earnings of women with four or more years of college were only 61% of the median earnings of men with the same amount of education (Statistical Abstracts, 1978).

Few women rise to the top ranks of their profession regardless of career field. Although women represent almost 50% of the labor force, they do not contribute to the fields of science, humanities, or the arts to the same degree as men (Farmer, 1976; Maccoby & Jacklin, 1974).

In Terman's (1925) classic study of gifted children, girls were found to be more artistically gifted and more talented writers than boys. In adulthood, however, all eminent writers and artists from Terman's group were men. Only 11% of the women were professionally employed, and the majority of these were teachers (Williams, 1977).

A variety of psychological and sociological factors has been proposed to account for women's relative lack of achievement: (a) women differ from men in their underlying motives and values, (b) women are motivated to be successful but define success differently than men, and (c) women's perceptions of their abilities and of the reasons for their success or failure reinforce a pattern of nonachievement (Frieze, Parsons, Johnson, Ruble, & Zellman, 1978; Hoffman, 1972; Huston, Stein & Bailey, 1973; Veroff, 1977).

Despite the fact that the majority of working women are concentrated in low-paying, nonprofessional job categories, there are women who have successfully attained high-status, high-salaried careers. In 1977, 9.5% of lawyers and judges, 11% of physicians, 3% of engineers, and 15.6% of scientists were women (Statistical Abstracts, 1978).

Research efforts to identify the determinants of occupational success in women have revolved primarily around the areas of: (a) personal characteristics of the subjects (Bachtold, 1976; Block, 1973; Helson, 1968; Hennig & Jardim, 1971; Morrison & Sebald, 1974), (b) early socialization factors (Helson, 1968; Hennig & Jardim, 1971; Morrison & Sebald, 1974), and (c) specific factors related to career choice (Hennig & Jardim, 1971). Typicalness of career choice (i.e. extent to which the career field is predominantly comprised of males or females) has also been studied recently (Cartwright, 1972; DuPree, 1976; Miller, 1977; Tangri, 1972; Trigg & Perlman, 1976). This work has been done primarily through the study of career choices of college women; relatively little research has been done with women who are actual participants in the labor force.

The research evidence indicates that successful, high achieving women and women in atypical (traditionally male) professions differ in several ways from less achieving women and women in typical (traditionally female) job categories. For example, achieving women and women in atypical occupations within their career field have repeatedly been shown to be higher in mental ability than comparison groups (Bachtold, 1976; Miller, 1977; Morrison & Sebald, 1974). High mental ability in females has been found to be associated with cross-sex typing (Maccoby, 1966) and to father identification and above average masculinity scores (Hoffman, 1972).

Manley (1977) reported that female achievement motivation is also associated with cross-sex typing. Hennig and Jardim (1971) and Helson (1968) indicate that parents of achieving women do not rigidly adhere to traditional sex-role stereotypes during their daughter's childhood. Block found an inverse relationship between degree of traditional female sex typing and upward career mobility with female subjects in the Berkeley Growth Studies. Other investigators (Bachtold, 1976; Morrison & Sebald, 1974) have found that the personality profiles of successful women strongly resemble those of men in the same profession. Another factor associated with cross-sex typing in females is high spatial ability (Kagan & Kogan, 1970), although this has not been studied relative to achievement. Males typically excel in spatial abilities (e.g., Maccoby & Jacklin, 1974) and spatial ability appears to be connected with success in science and mathematics (Hyde, Geringer, & Yen, 1975; Leskow & Smock, 1970).

Studies designed to examine the effects of childhood socialization factors on career choice and career success in females have produced

inconsistent results. Some studies have found childhood factors to be important (Cartwright, 1972; Helson, 1968; Hennig & Jardim, 1971; Miller, 1977; Tangri, 1972; Trigg & Perlman, 1976) and others (e.g., Morrison & Sebald (1974) have not. Those variables which have been found to be significant include: ordinal position (Helson, 1968; Hennig & Jardim, 1971), maternal employment status (Miller, 1977; Tangri, 1972), level of parental education and father's occupational status (Hennig & Jardim, 1971; Trigg & Perlman, 1976), the father-daughter relationship (Helson, 1968; Hennig & Jardim, 1971), sex-role prescriptions (Helson, 1968; Hennig & Jardim, 1971), and active encouragement of achievement efforts (Cartwright, 1972; Helson, 1968; Hennig & Jardim, 1971).

One factor that has not been explored relative to early socialization experiences is the subject's preferred play materials and activities during childhood and those endorsed by the subject's parents. Kacerguis and Adams (1979) have recently postulated that this could be a major influence on female career choice and achievement.

The present investigation combined the study of personal characteristics and early socialization factors with typicalness of career choice and achievement in a study of active professional women. The study was designed to collect information on the subject's current status as well as her memories of childhood experiences. Three variables were selected to assess current status: cognitive (verbal and spatial) ability, sex typing, and achievement motivation.

A questionnaire was used to tap four aspects of the subject's childhood experiences: her personal characteristics, characteristics of her parents, memory of her parents' childrearing practices, and play

materials and activities during childhood.

It was expected that women in atypical, relative to those in typical, professional careers would (a) score higher on both the verbal and spatial intellectual measures, (b) score relatively higher on the spatial measure, (c) show a lower degree of traditional female sex typing, and (d) score higher in achievement motivation. It was also expected that within categories (a) and (b), law and medicine would show different patterns of verbal and spatial ability. Specifically, it was assumed that law would place greater emphasis on verbal capacity, an area in which females traditionally excel, with a resultant higher performance on the vocabulary subtest. In medicine, it was assumed that the greater emphasis in science and mathematics would lead to higher performance on the spatial measure, where males generally excel.

If high success women are brighter than comparison groups and high ability is associated with cross-sex typing, achieving women would be expected to be cross-sex typed to a greater degree than nonachieving women. High success subjects were also expected to have higher achievement motivation scores than other subjects.

The expectations for the questionnaire were that women in atypical, relative to those in typical careers, and particularly high success subjects, (a) would show a greater preference for more traditionally masculine play patterns, (b) would have escaped a strong parental push toward traditionally feminine sex typing, (c) would have more highly educated parents, (d) would be from a family belonging to a higher socioeconomic group, (e) would have experienced a close, instrumental-type relationship with their father, (f) would have parents' whose marital relationship was happier, (g) would more likely have a gainfully

employed mother, (h) would more likely have been a first born or only child, and (i) would have received greater encouragement for nontraditionally feminine achievement efforts.

Method

Design

Two major professional fields, medicine and law, were selected for study. Four categories within each field were established according to two criteria, (a) level of occupational success and (b) typicalness of the occupation for females.

Criteria used for inclusion in the high success (category 1) for each field were: distinction in the field as demonstrated by rank or position (one of the highest attainable) and/or other evidence of distinction such as special recognition, honors and awards.

Each of the four categories was classified as typical or atypical in terms of the proportion of women in the profession(s) included in the category. The current participation ratio of females to males in the general labor force is 48/52 (Statistical Abstracts, 1978), thus a category was considered atypical if fewer than one-half the working women, or a female/male ratio of 24/76 or smaller, were concentrated in that job category. Based on this criterion, category 1 and 2 subjects in this study were in very atypical professions for women.

The four categories within each field ranged from very atypical (the high success category) to very traditional occupations for females. All categories were based upon recognized groups of licensed professionals, and an attempt was made to achieve category comparability, especially in regard to educational requirements, across the two professional fields. The four categories within each field were:

A. Medicine

- Category 1 - Highly successful (physician)
- Category 2 - Practicing physician
- Category 3 - Licensed Practical Nurse (LPN)
- Category 4 - Certified medical assistant/administrative

B. Law

- Category 1 - Highly successful (lawyer)
- Category 2 - Practicing lawyer
- Category 3 - Certified court reporter
- Category 4 - Legal secretary

The basic design of the study, therefore, was a 2 (fields) x 4 (categories) factorial design. Since several measures (to be described later) were taken on each subject, the final experimental design was a multifactor mixed design with repeated measures.¹

Subjects

The 80 adult females who comprised the sample were from the central Oklahoma area. Ten subjects were selected within each of the eight categories. The mean age of the subjects was 42.2 years.

All subjects were selected from the 1977-78 membership listings of the professional groups comprising the occupational categories. Each group has a controlling state board which grants certification or license, the prerequisite for membership in the group and/or professional practice. The lists used as categorical universes for sampling were: Oklahoma Women Lawyers, practicing female physicians, the Oklahoma Nursing Board of Registration and Education, the Oklahoma Association of Legal Secretaries, certified court reporters, and Oklahoma Certified Medical Assistants. There was a generally high level of interest in the study and a willingness to cooperate across all professional groups.

Selection of High Success Subjects

Six individuals in Oklahoma (three for law and three for medicine) with special expertise served as judges in the selection of high success subjects in each field. The medical experts were a dean of a medical school, the head of the state board of medical examiners, and the executive director of the Oklahoma State Medical Association. The experts in law were an acting dean of a law school, a former dean of a law school, and a district judge. Of the six individuals who served as experts, one was female.

Each expert was asked to select the ten (or fewer) outstanding women in his/her respective field according to the previously mentioned criteria for high success. The listings of practicing female physicians and practicing female lawyers served as the universe for selection; however, all experts were asked to select the most outstanding women they knew regardless of whether or not their names appeared on the listings, in case listings were not entirely up to date. Nomination by at least two of the three experts in a field was the criterion used to place a person in the high success category.

In law, ten high success subjects were identified on the first trial by following the above procedure. In medicine, only eight subjects were identified initially in terms of being nominated by two of the three experts. Accordingly, an additional person, the executive director of the Oklahoma County Medical Society, was asked to serve as a fourth expert and to follow the same selection procedure. This resulted in the identification of three additional high success physicians by consensus of two of the four experts.

All ten persons identified as high success in law agreed to participate in the study. Of the eight women in medicine identified as high success on the first attempt, all agreed to participate, but one chose not to complete the testing procedure. The three additional individuals identified by use of the fourth expert all agreed to participate, making a total of ten high success physicians in the study.

The sample of high success subjects included the leading specialists and medical researchers in the state for the field of medicine and judges and members of the state legislature for the field of law. The mean age of high success subjects in law was 43.7 years; the mean age of high success subjects in medicine was 47 years. The majority of high success subjects were married and had children.

Selection of Remaining Subjects

Subjects in categories 2, 3, and 4 within each field were randomly selected from the professional listings described earlier. Letters were sent to individuals from each listing until the required sample of ten subjects in each category within each field was obtained. Any individual nominated by even one expert for inclusion in the high success category was excluded as a candidate for category 2 (randomly selected lawyers and physicians).

For category 2, 18 letters inviting participation were sent to physicians; four of these could not be reached, and four declined to participate. Twenty-four letters were sent to attorneys; 11 of these could not be contacted and three declined to participate.

Category 3 was made up of randomly selected LPN nurses and certified court reporters. Twelve letters were sent to court reporters; all were contacted, and two declined to participate. Letters inviting

participation were sent to 33 LPN's. Eight of these declined to participate and 15 could not be reached.

Individuals from the listings of certified medical assistants and legal secretaries made up the sample for category 4. Twelve letters were sent to certified medical assistants. Contact was made with all, with two declining to participate. Fifteen letters were sent to members of the legal secretaries association. Two individuals could not be reached, and three declined to participate.

The Final Sample

Mean ages of the final sample are presented in Table 1. The majority of individuals comprising the sample were married and had children; three individuals were black; the remainder were white.

The Investigator

The investigator was a 35-year-old white female, who, in addition to being a doctoral student at Oklahoma State University, was a part-time instructor at another university in the metropolitan Oklahoma City area. Impetus for the study grew, in part, from a moderately feminist philosophical view regarding the underlying reasons for women's status in the world of work.

Materials

The Vocabulary and Block Design subscales of the Wechsler Adult Intelligence Scale (1955) were used to assess verbal and spatial ability, respectively. The administration and scoring of these subtests followed the standard guidelines of the Wechsler (1955) manual.

The Bem Sex-Role Inventory (1974) was used to assess relative degree of masculinity/femininity. Each subject received the standard instructions and the list of 60 adjectives that make up the Inventory.

Scoring followed the standard system developed by Bem.

Materials and Instructions for administering and scoring achievement motivation were adapted from Atkinson's (1958) technique. The projective measures used were from Murray's (1936) Thematic Apperception Test, cards 7BM and 8BM and pictures B and H of the original n Achievement series (McClelland, Atkinson, Clark, & Lowell, 1953). Although the time allowed for responding to the projective measures was reduced, all other aspects of the original procedure were followed.

A childhood experiences questionnaire was developed and used to gather information regarding the subjects' personal histories. The items (see Appendix A) revolved around four major themes: personal characteristics of the subject, characteristics of her parents, the subject's memory of her parents' childrearing practices, and play materials and activities in the subject's childhood.

The questionnaire consisted of a total of 99 items of the Likert, short answer, fill-in, and multiple-choice variety. The majority of items could be analyzed directly from responses on the questionnaire.

Procedure

A letter describing the nature and intent of the study and inviting participation was sent to each prospective subject. Letters were sent to only a few individuals at one time and were distributed evenly among categories.

Each letter was followed by an attempt to make contact with the prospective subject by telephone. The interval between sending the letter and the follow-up telephone call was typically one or two days after the letter should have been received. During the call, if the person agreed to participate, a meeting was scheduled to administer

the various measures, and information was given regarding the questionnaire. Each high success subject was told that she had been identified as an outstanding woman in her field by a consensus of experts, which may in part account for the relatively greater willingness of these subjects to participate in the study. The identities of the experts (or clues as to institutions, positions, etc.) were not revealed to the category 1 women. Occasionally, an individual would express concern about taking an "IQ or personality test." In these cases, subjects were assured that the cognitive measures were not IQ tests, per se, but measures of selected aspects of cognitive ability, and that personality measure tapped only two nonclinical components of that dimension. A general description of the childhood experiences questionnaire was given over the telephone, and copies were mailed to the subjects to be completed in advance and collected at the time of the scheduled meeting.

Meetings were arranged at the subject's convenience and were usually conducted at her home or place of work. The time interval between the telephone call and the meeting ranged from three days to three weeks, but typically was five or six days. During the meeting, tests were administered in the following order: Bem Sex-Role Inventory, Block Design subtest, Vocabulary subtest, and the achievement motivation measure. The average time required to complete these measures was 50 minutes. Additionally, taped interviews were conducted with high success subjects. These revolved around quantity and quality of time spent with and impact of significant others and related influences on career development.

Questionnaires were checked for completeness and collected. If the questionnaire was not complete, instructions were given as needed, and the subject either completed it immediately or shortly after the meeting and mailed it to the investigator.

Results

Means and standard deviations were computed separately by field and category for each measure and for age. These are presented in Table I.

Performance on the Wechsler Subscales

Subjects in the atypical careers of medicine and law (categories 1 and 2) had higher mean vocabulary scores than subjects in the typical careers (categories 3 and 4). This was not unexpected, since a career as a physician or lawyer requires extensive training in a professional school with discriminating entrance requirements. The Vocabulary subscale is one of the single best predictors of overall intelligence as measured by the WAIS (Wechsler, 1955).

An analysis of variance showed that a significant difference existed among categories on the vocabulary measure, $F(3, 79) = 19.62$, $p < .0001$. The Duncan's (1955) multiple-range test confirmed that subjects in atypical careers (categories 1 and 2) scored significantly² higher than those in typical careers (categories 3 and 4). Although no other significant effects were found, there was a category x field interaction trend, $F(3, 79) = 2.45$, $p < .07$, due mainly to the high mean Vocabulary score of category 2 physicians.

An analysis of variance revealed a significant difference among categories on the Block Design subtest, $F(3, 79) = 5.10$, $p < .003$. Comparisons via the Duncan's test revealed that categories 1 and 2

scored significantly higher than category 3. The variable of age proved to be a significant factor in raw Block Design scores, $F(1, 79) = 5.05$, $p < .03$. No other significant effects were found.

Category 2 subjects had a higher mean score on the Block Design subtest than category 1; this was primarily due to the relatively low scores of category 1 physicians. This raw score difference is misleading, however. The standardized adjustment for age in converting raw scores to scaled scores results in the same scaled score for categories 1 and 2 on the Block Design subtest (Wechsler, 1955), as shown in Table 1.

Performance on the Bem Sex-Role Inventory

Any score between -8 and +8 constitutes an androgynous score on the Bem scale. Higher negative scores are classified as masculine and higher positive scores are classified as feminine. The highest masculine score obtained was -40. Therefore, 40 points were added to all subjects' scores to eliminate negative numbers and facilitate data analysis. For presentation purposes, however, scores have been converted back to values consistent with Bem's scaling.

The mean score for lawyers, -16.75, was well into the masculine range; the mean score for physicians was -7.5, near the masculine end of the androgynous range. Subjects in categories 3 and 4, holding more traditionally female positions in law and medicine, had mean scores of +8.5 and +5.9, respectively, near the feminine end of the androgynous range.

An analysis of variance performed on the Bem scores revealed a significant difference between categories, $F(3, 79) = 13.24$, $p < .0001$. Duncan comparisons confirmed that the women in atypical careers

Table 1
Means and Standard Deviations for
Standardized Measures and Age

	Category 1			Category 2			Category 3			Category 4		
	\bar{X}	SD	Scaled WAIS Score	\bar{X}	SD	Scaled WAIS Score	\bar{X}	SD	Scaled WAIS Score	\bar{X}	SD	Scaled WAIS Score
Vocabulary												
Law	70.00	4.00	(14)	69.40	7.11	(14)	59.90	10.48	(12)	58.00	7.18	(12)
Medicine	69.70	4.00	(14)	72.10	3.28	(15)	51.00	13.01	(11)	59.60	7.47	(12)
Block Design												
Law	38.30	4.79	(12)	39.50	8.22	(13)	33.00	8.60	(11)	34.40	6.31	(11)
Medicine	34.30	5.83	(12)	38.10	5.68	(12)	28.50	6.36	(10)	35.50	7.06	(11)
Masculinity/ Femininity												
Law	-17.80	10.96		-15.10	10.04		+9.6	14.39		+6.8	17.92	
Medicine	- 8.50	17.46		- 6.50	13.17		+7.4	12.53		+5.00	11.01	
Achievement Motivation												
Law	8.30	3.59		7.10	6.42		4.10	2.85		5.70	2.00	
Medicine	3.70	2.67		5.80	2.70		3.40	2.72		5.50	3.17	

Table 1 (Continued)

	Category 1			Category 2			Category 3			Category 4		
	\bar{X}	SD	Scaled WAIS Score	\bar{X}	SD	Scaled WAIS Score	\bar{X}	SD	Scaled WAIS Score	\bar{X}	SD	Scaled WAIS Score
Age												
Law	43.70	11.30		39.20	18.22		39.20	12.91		32.60	9.47	
Medicine	47.00	10.28		43.30	12.37		43.10	12.46		42.30	12.60	

(categories 1 and 2, physicians and lawyers), had significantly higher masculinity scores than women in more typically female careers (categories 3 and 4, nurses, court reporters and secretaries). Within categories 1 and 2, lawyers had significantly higher masculinity scores than physicians, $F(1, 36) = 4.58, p < .05$.

Performance on the Achievement Motivation Subscale

Subjects in each law category had higher mean scores on the need-achievement measure than subjects in the corresponding category in medicine. Category 1 lawyers had the highest and category 2 lawyers the second highest mean score of all groups. On the other hand, category 1 physicians had one of the lowest mean scores, and category 2 physicians had scores in the midrange. This difference between fields was less evident within the typical categories (3 and 4).

An analysis of variance confirmed that subjects in the field of law had significantly higher achievement motivation scores than subjects in the field of medicine, $F(1, 79) = 4.72, p < .03$. The difference between categories approached but did not reach significance, $F(3, 79) = 2.29, p < .084$.

Correlations Between Variables

Pearson product-moment correlations were computed among five variables: verbal performance as measured by the Vocabulary subtest, spatial performance as measured by the Block Design subtest, degree of masculinity/femininity, achievement motivation and age. These correlations are shown in Table 2.

The negative correlations obtained between Bem scores and other measures are an artifact of the Bem scoring system which assigns negative values to masculine scores. As may be seen in Table 2, verbal

performance correlated significantly with all variables except age. Also, spatial performance correlated negatively with age, indicating that younger subjects had higher raw scores.

Table 2
Correlations Between Selected Variables

	Ach M	M/F	Verbal	Spatial	Age
Ach M		-.16	.27*	.19	-.15
M/F		-	-.31**	-.09	-.08
Verbal			-	.31**	.09
Spatial				-	-.27*

*p < .01

**p < .005

Childhood Experiences Questionnaire

Data from the questionnaire were analyzed by means of Chi-square and analysis of variance in several ways: (a) by the eight category by field combinations, (b) by the four categories irrespective of field, (c) by four professional categories (lawyers, physicians, secretaries, and a combination of nurses and court reporters), (d) by atypicalness versus typicalness (categories 1 and 2 versus 3 and 4), and (c) by field irrespective of category.

A total of 24 questionnaire items reached statistical significance: four related to the personal characteristics of the subject, six to

characteristics of the subject's parents, six to the parents' childrearing practices and seven to play materials and activities during childhood.

Personal Characteristics

All subjects in categories 1 and 2 had completed traditional professional training. Six of the 40 subjects in categories 3 and 4 had completed a bachelor's degree, and one had done some graduate work. The attained educational level of the remaining 33 was less than the bachelor's degree.

A career as a physician or lawyer requires years of educational preparation; therefore, the finding that subjects in categories 1 and 2 had attained higher levels of education than subjects in categories 3 and 4 was not surprising, $\chi^2 (2) = 56.17, p < .0001$. Interestingly, however, the subjects in the atypical categories were more likely than those in typical categories to have attained a higher level of education than any of their siblings, $\chi^2 (3) = 25.58, p < .0001$. This latter finding provides an additional empirical indicator of a difference in achievement motivation in women in typical versus atypical careers.

Perhaps the most interesting finding concerning personal characteristics was that subjects in typical careers reported greater happiness during adolescence than subjects in atypical careers. Analysis of variance confirmed that subjects in typical categories rated themselves higher on personal happiness during adolescence than subjects in atypical categories, $F (1, 78) = 4.63, p < .035$. Subjects who were physicians or lawyers were more likely to have been a first born or

only child than subjects in traditionally female occupations, $\chi^2 (1) = 4.11$, $p < .04$.

Parental Characteristics

Not surprisingly, the parents of subjects in the atypical categories (1 and 2) were better educated than the parents of subjects in the typical categories (3 and 4). This proved to be the case for both mother, $\chi^2 (2) = 11.18$, $p < .004$, and father, $\chi^2 (2) = 7.09$, $p < .03$.

The proportion of the subjects' mothers who had attained a level of education beyond high school was 27.5% for women in atypical careers as compared to 8.8% for women in typical careers. The proportion of fathers educated beyond high school was 26% for women in atypical careers and 12.5% for women in typical careers. Also, 12.5% of the fathers of atypical career women had completed graduate or professional training.

Mothers of subjects in the field of law were more likely than mothers of subjects in the field of medicine to have been employed outside the home when the daughter was 7-12 years of age, $\chi^2 (1) = 4.09$, $p < .04$. Fathers of physicians and lawyers were more likely to have been employed in managerial or professional occupations than fathers of subjects in traditionally feminine careers. This was true throughout the subject's life: 0-6 years, $\chi^2 (2) = 9.25$, $p < .009$; 7-12 years, $\chi^2 (2) = 13.86$, $p < .001$; 13-18 years, $\chi^2 (2) = 11.39$, $p < .003$.

Childrearing Practices

Analysis of variance revealed a significant difference between categories in the extent to which mother used isolation as a form of punishment, $F (3, 75) = 3.13$, $p < .03$. Duncan comparisons indicated that lawyers were more likely to have been punished by means of

isolation than other subjects and significantly more than subjects in typical medical careers (categories 3 and 4). As a group, subjects in atypical categories were more likely than those in typical ones to indicate that isolation had been used by their mother as a form of punishment, $F(1, 75) = 5.45, p < .02$.

There was a significant difference between categories in the extent to which father was reported as encouraging his daughter to "always do your best," $F(3, 76) = 4.17, p < .009$. The Duncan's test showed categories 1 and 4 were significantly higher on this item than category 2.

There were differences among subjects in the amount and type of responsibility required throughout their childhoods. Subjects in categories 1 and 4 were less likely to indicate having a greater amount of responsibility than their siblings than subjects in categories 2 and 3, $\chi^2(3) = 14.68, p < .002$. When this item was analyzed according to profession, however, the secretarial category was most likely to have the same amount or less responsibility than their siblings, $\chi^2(3) = 9.96, p < .02$.

Subjects in the field of law were more likely to indicate that care of their room and possessions was a major responsibility during the years from 0-6, $\chi^2(1) = 4.11, p < .04$. The difference among categories for the item, no regular duties from 7-12 years of age, was due to an affirmative response from category 1 and, to a lesser extent, category 3, $\chi^2(3) = 7.93, p < .05$. Subjects in typical categories (3 and 4) were more likely than those in atypical categories (1 and 2) to have been required to perform housekeeping tasks during adolescence, $\chi^2(1) = 5.00, p < .03$. Physicians were less likely than any other professional

category to have been required to assume housekeeping chores as a major responsibility during adolescence, $\chi^2 (3) = 7.77, p < .05$

There was no difference among subjects as to their required amount of responsibility relative to their peers. Of those subjects who indicated having a greater amount of responsibility, however, those in atypical careers were more likely to report that this responsibility was nontraditional in nature, $\chi^2 (1) = 7.77, p < .05$.

Play Materials and Activities

Available play materials and favored play activities during childhood differed according to typicalness of career. Subjects in atypical categories (1 and 2) were more likely to indicate a preference for sports activities than those in typical categories (3 and 4), $\chi^2 (1) = 10.45, p < .001$, and were also more likely to indicate that sports equipment was a most often used play material, $\chi^2 (1) = 3.81, p < .05$. Subjects in the field of medicine indicated a greater incidence of owning sports equipment during childhood than subjects in the field of law, $\chi^2 (1) = 3.81, p < .05$.

Responses concerning sports equipment were somewhat inconsistent relative to other items regarding sports activities. Both category 1 and, surprisingly, category 4 were more likely than categories 2 and 3 to indicate that sports equipment was a favored play material during childhood, $\chi^2 (3) = 9.78, p < .02$.

Subjects in the atypical categories were more likely than subjects in the typical categories to indicate that they had not owned a doll during childhood, $\chi^2 (1) = 5.59, p < .02$, and physicians were more likely to indicate that they had not owned a doll than subjects in any other profession, $\chi^2 (3) = 7.93, p < .05$.

Playing house was more likely to have been a favorite activity during childhood for subjects in typical categories than for those in atypical categories, $\chi^2 (1) = 4.11, p < .04$. Subjects in atypical categories, on the other hand, were more likely to report that table games were a favorite activity, $\chi^2 (1) = 4.53, p < .03$. The difference among the four career groups for this item was due to a relatively high rate of affirmative responses for lawyers and a low rate for secretaries, $\chi^2 (3) = 8.49, p < .04$.

Interview Data

Interviews with the highly successful physicians and lawyers provided additional information regarding socialization factors and the possible contribution of these to career success. One of the most consistent of these factors in the childhood experiences of the highly successful subjects was the strength of support provided for their achievement efforts by other members of their families, even though these efforts were not always stereotypically feminine. A paraphrased statement by one of the physicians sums up well what was expressed in other ways by most of the high successful subjects: "My childhood was very happy. . . . My parents were very loving in that they let me go out and do things like show calves and pigs, which not very many girls did in those days. . . . They often wondered why I wanted to go to medical school, but they said, 'If you want to do it, fine, we'll find the money,' but they let me do it. They always supported me, and I think that's important."

Beyond this general consistency, there were some interesting differences between fields. For that reason, the interview data have been summarized separately below for physicians and lawyers.

Highly Successful Physicians

The dominant themes that appeared in the interviews of the highly successful physicians regarding their childhoods were strikingly similar. All came from intact families which were described as emotionally close, stable, and happier than average. The statement of one physician, "I think I was fortunate in having the kind of parents that I had and the kind of family life that I had," is representative of the feelings expressed by the majority.

These physicians portrayed their mothers as being traditionally feminine and reported that their fathers had been actively involved in their childrearing. The majority indicated that they were "special" to their fathers, and reported having had a close, interactive relationship with him in various ways, e.g., assisting him in his business or profession, working with him in doing chores, observing and participating in sports events with him, discussing politics and world events, and so forth. When asked which parent had exerted the greatest influence on their lives, two of the physicians identified their "mother," two their "father," and the remainder stated that their mother and father had exerted equal influence on their lives.

Even during childhood and adolescence, these physicians had not desired, nor were they coerced by their families to conform to, the traditionally feminine role. For example, seven stated an early dislike for housekeeping activities and were not required to perform them.

Another nontraditional characteristic of these subjects, particularly in light of their mean age, was that they had always planned to pursue a career. Seven of these ten women reported having decided to become a medical doctor during their public school years; the remaining

three were initially science majors in college, also atypical for women.

Highly Successful Lawyers

The childhood profiles of the ten highly successful lawyers were less consistent. There seemed to be two major patterns. The childhood and family experiences of half of the category 1 lawyers were quite similar to those of the physicians, i.e., family stability, emotional closeness, active involvement in childrearing by both parents, and a close, instrumental-type relationship with father. The childhood of the remaining five lawyers, however, had been, at some point, subjected to stress and instability through divorce, poverty, or illness.

Just as the successful physicians had not wished to conform to a traditionally feminine role, neither had the successful lawyers. A greater number of them, however, were required to assume housekeeping responsibilities due to family circumstances. With one exception, the lawyers had been career-oriented since childhood. However, career decisions were made much later. Although three of these women selected their career during the public school years, three decided while in college (majoring in political science). Four had completed their bachelor's degree before they decided to pursue a career in law.

Five of the successful lawyers indicated that their mother had exerted the most influence on their lives, two stated that their father had been most influential, and three said their mother and father were equally influential. Those who identified their mother as the most influential parent were from the more unstable home environments. Three of these mothers were characterized as very strong women who served as positive role models for their daughters.

Discussion

A rather consistent profile emerges for the women in the atypical career of physician, judge, or lawyer. She is intellectually bright (scoring high on both verbal and spatial measures), psychologically masculine (cross-sex typed or androgynous), and, in the case of law, high in achievement motivation as measured by the projective measure. These women also experienced a type of childrearing that may have fostered their more psychologically masculine sex typing. In many respects, this profile appears to be one that could have been generated in a study of professional men.

It was expected, but not confirmed, that within categories 1 and 2, law and medicine would show different patterns of verbal and spatial ability. Specifically, it was assumed that lawyers, as members of a highly verbal profession, would score higher on the Vocabulary subtest, and that physicians would score higher on the Block Design subtest as their training requires greater emphasis in the sciences, and the apparent connection between success in these areas and spatial ability (Hyde, Geringer & Yen, 1975; Leskow & Smock, 1970).

Scaled WAIS scores for both the Vocabulary and Block Design subtests were high and almost identical for physicians and lawyers. This seems to indicate that a relatively high level of intellectual ability is necessary to complete training and practice as a physician or lawyer, but which career one chooses and the attainment of high success is dependent upon factors other than intelligence.

Expectations regarding achievement motivation scores were borne out for categories 1 and 2 in law but much less so in medicine. One possible explanation for these results is that achievement imagery for lawyers

may be associated with the traditionally more masculine characteristic of assertiveness, and this is perhaps reflected in the more masculine scores of the lawyers on the Bem. Achievement in medicine, on the other hand, may be associated more with the traditionally feminine characteristics of healing and nurturance, as reflected in the lower masculinity, more androgynous scores of the physicians. This interpretation would be consistent with Cartwright's (1972) finding that the desire to help others was a primary motivator in women medical students' decision to become physicians. It is interesting, however, that category 1 in both medicine and law had slightly more masculine scores than category 2, suggesting that greater assertiveness/aggressiveness may, in fact, be a component of high success in male-dominated professions.

In many ways, the childhood play patterns of women in atypical careers resemble those of the traditional male more than those of the traditional female child. The atypical career women preferred sports activities and table games and had access to sports equipment to a greater extent than the typical career woman. The typical career woman, on the other hand, favored the more traditionally feminine activities of doll play and playing house, and was more likely to have owned a doll. Although there has been little study of childhood play materials and activities relative to female career choice and achievement, Cartwright did find that female medical students preferred gross-motor, outdoor activities, and Kacerguis and Adams (1979) postulated that play activities could be a significant factor in female career choice and success.

Apart from the information on play activities and materials, most of our findings have been reported on an individual basis by other

investigators. The real significance of the present results lies not in their individual novelty but in the remarkably consistent pattern they present across a variety of measures employed in this study, and in their agreement with the results obtained through diverse approaches in previous research.

Given a psychological profile that is so strikingly masculine, we may ask what produces and maintains it, and what factors within our society foster or hamper its development. Unfortunately, our data do not offer great enlightenment here. Parents and family appear to constitute one important factor. Our atypical subjects clearly were more likely to have been encouraged and supported in their efforts along traditionally masculine lines, and not pushed to assume the attitudes and behaviors of the traditional female. On the surface, this would seem to reflect the effects of a more flexible and less stereotyped style of parenting. Even here, however, we do not know whether such parenting was cause or effect. That is, it simply should be more difficult to press a daughter into the traditional feminine mold if she resists it than if she happily accepts it. Bell (1968) has wisely cautioned against the tendency to conclude that socialization effects always occur unidirectionally from parent to child. A suggestion here, as we search for the origins of the successful woman profile, would be that we not automatically exclude biological and hereditary factors from consideration as possible explanatory mechanisms without examining them.

One question that intrigues us at the moment is how this masculine profile that appears to be an essential component of success in male-dominated careers can develop and survive within the school

environment. The school system, particularly at the lower grade levels, provides a highly feminine academic atmosphere in terms of a preponderance of female teachers, feminine curriculum content, teaching styles, and the like. In addition, the prevailing cultural bias in favor of traditional sex typing, presumably accepted by teachers and peers, should also work to foster femininity in girls for purely social reasons. The combination of academic and social pressures toward femininity should be particularly difficult for most girls to escape. This may help to explain why the physicians and lawyers reported a relatively greater degree of unhappiness during adolescence than the women in traditionally feminine careers. Such unhappiness cannot readily be explained in terms of family difficulties or, given the entrance requirements for law and medical schools, in terms of academic difficulties. At any rate, it would be interesting to learn how early the successful-woman profile begins to appear in children, and how it survives the pressure of the school environment toward traditional femininity. We are attempting to find some answers to these questions at the present time.

References

- Atkinson, J.W. (Ed.) Motives in fantasy, action, and society. Princeton, N.J.: Van Nostrand, 1958.
- Bachtold, L.M. Personality characteristics of women of distinction. Psychology of Women Quarterly, 1976, 1, 70-78.
- Bell, R.Q. A reinterpretation of the direction of effects in studies of socialization. Psychological Review, 1968, 75, 81-95.
- Bem, S.L. The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, 1974, 42, 155-162.
- Block, J. Conceptions of sex role: Some cross-cultural and longitudinal perspectives. American Psychologist, 1973, 28, 512-529.
- Cartwright, L. Conscious factors entering into decisions of women to study medicine. Journal of Social Issues, 1972, 28, 201-215.
- Duncan, D.B. Multiple range and multiple F tests. Biometrics, 1955, 11, 1-42.
- DuPree, C. Career orientation of women as related to selected personality characteristics. Dissertation Abstracts International, 1976, 37, 2184.
- Farmer, H.S. What inhibits achievement and career motivation in women? The Counseling Psychologist, 1976, 6, 12-15.
- Frieze, I.H., Parsons, J.E., Johnson, P.B., Ruble, D.M., & Zellmn, G.L. Woman and sex roles. New York: W.W. Norton, 1978.
- Helson, R. Effects of sibling characteristics and parental values on creative interest and achievement. Journal of Personality, 1968, 36, 589-607.
- Hennig, M, & Jardim, A. The managerial woman. New York: Simon and Schuster, 1971.
- Hoffman, L.W. Early childhood experiences and women's achievement motives. Journal of Social Issues, 1972, 28, 129-155.
- Huston Stein, A., & Bailey, M.M. The socialization of achievement orientation in females. Psychological Bulletin, 1973, 80, 345-366.

- Hyde, J.S., Geringer, E.R., & Yen, W.M. On the empirical relation between spatial ability and sex differences in other aspects of cognitive performance. Multivariate Behavioral Research, 1975, 10, 289-309.
- Kacerguis, M.A., & Adams, G.R. Implications of sex typed child rearing practices, toys and mass media materials in restricting occupational choices of women. The Family Coordinator, 1979, 39, 369-375.
- Kagan, J., & Kogan, N. Individuality and cognitive performance. In H. Mussen (Ed.), Carmichael's manual of child psychology. Volume 1. New York: John Wiley, 1970.
- Leskow, S., & Smock, C.D. Developmental changes in problem-solving strategies: Permutation. Developmental Psychology, 1970, 2, 412-422.
- Maccoby, E.E. Sex differences in intellectual functioning. In E.E. Maccoby (Ed.), The development of sex differences. Stanford, CA: Stanford University Press, 1966.
- Maccoby, E.E., & Jacklin, C.N. The psychology of sex differences. Stanford, CA: Stanford University Press, 1974.
- Manley, R.O. Parental warmth and hostility as related to sex differences in children's achievement orientation. Psychology of Women Quarterly, 1977, 1, 229-246.
- McClelland, D., Atkinson, J.W., Clark, R.A., & Lowell, E.L. The achievement motive. New York: Appleton-Century-Crofts, 1953.
- Miller, E. Achievement motivation in women: A developmental perspective. Dissertation Abstracts International, 1977, 37, 7643-7644.
- Morrison, R., & Sebald, M. Personal characteristics differentiating female executive from female nonexecutive personnel. Journal of Applied Psychology, 1974, 59, 656-659.
- Murray, H.A. Techniques for a systematic investigation of fantasy. Journal of Psychology, 1936, 3, 115-143.
- Rosen, B.C. The achievement syndrome: A psychocultural dimension. In J.W. Atkinson (Ed.), Motives in fantasy, action, and society. Princeton, N.J.: Van Nostrand, 1958.
- (Statistical Abstracts) U.S. Department of Commerce, Bureau of the Census. Statistical Abstract of the United States. (99th edition). Washington, D.C.: U.S. Government Printing Office, 1978.
- Tangri, S.S. Determinants of occupational role innovation among college women. Journal of Social Issues, 1972, 28, 177-199.

Terman, L.M. Genetic studies of genius, Vol. 1: The mental and physical traits of a thousand gifted children. Stanford, CA: Stanford University Press, 1925.

Trigg, L., & Perlman, D. Social influences on women's pursuit of a non-traditional career. Psychology of Women Quarterly, 1976, 1, 138-150.

Veroff, J. Process vs. impact in men's and women's achievement motivation. Psychology of Women Quarterly, 1977, 1, 283-292.

Wechsler, D. Manual for the Wechsler Adult Intelligence Scale. New York: The Psychological Corporation, 1955.

Williams, J.H. Psychology of women: Behavior in a biosocial context. New York: W.W. Norton, 1977.

Footnotes

¹As may be seen, not only do the four categories differ in typicalness of the occupation for women, categories 1 and 2 also differ within profession on the dimension of success.

²All Duncan comparisons were tested at the .05 level.

³The relationship between the high success subjects in this study and their mothers, as indicated in both the questionnaire and interview, runs counter to the prevailing idea that achievement orientation and intellectual mastery are related to maternal hostility. High success subjects reported no difference in the amount of warmth shown by mother, and described their relationship with mother as quite positive and a valued source of support and stability.

⁴The term traditional was used in two ways: (a) to denote job categories predominantly comprised of females, and (b) to describe the cultural status quo regarding masculine and feminine sex role behavior.

APPENDIX A

LITERATURE REVIEW

Three major variables related to current psychological status were selected for study. This review will focus on these variables: intellectual ability (including verbal and spatial ability), sex typing, and achievement motivation. In each instance, an overview of the topic will be presented first. This will be followed by the presentation of research evidence regarding the antecedents of each variable.

Intellectual Abilities

A basic issue in the study of intelligence is whether it is primarily an innate or learned capacity (Bayley, 1970). Each viewpoint has support in the literature, and a consensus which credits both is summarized by Bing (1963):

Individual differences in cognitive development have come to be considered the result of interactions between a child's life experiences and the set of genes with which he has been endowed (p. 631).

Hereditary Factors

Support for the heritability of aspects of intellectual functioning is well documented (Bayley, 1970; Honzik, 1957; Erlenmeyer-Kimling & Jarvic, 1963) and has generally been undertaken through two methods: (a) comparisons of IQ score correlations of samples of differing levels of kinship, and (b) comparison of IQ score correlations of children reared by natural and unrelated parents.

An increasing degree of intellectual resemblance has been found in direct proportion to the degree of genetic relationship (Bayley, 1970; Erlenmeyer-Kimling & Jarvic, 1963; Honzik, 1957). While no correlation in median IQ scores is found for unrelated persons living apart, the correlation between natural parent and child, between siblings, and

between dizygotic twins is .50 (Erlenmeyer-Kimling & Jarvik, 1963).

Whether a child is reared by natural parents makes no difference in resemblance of IQ's of children and natural parents (Honzik, 1957). Correlations for monzygotic twins reared together have been reported to be .92 (Bayley, 1970) and .87 (Erlenmeyer-Kimling & Jarvick, 1963); correlations of .87 and .75 have been reported for monozygotic twins reared apart. Correlations of .27 (Bayley, 1970) and .20 (Erlenmeyer-Kimling & Jarvik, 1963) was reported for child and unrelated parent. Some investigators (e.g., Honzik, 1957) have found no IQ correlation between children and unrelated parents.

Honzik (1957) reported degree of correlation between level of education of mothers, their intelligence, and socioeconomic status. The correlation between mother's intelligence and years of schooling was .73. The correlation for both mother and fathers' educational level and family socioeconomic status was .73, while the correlation between mother's and father's level of education was .74. Honzik concluded that parent-child correlations were more a function of genetically determined individual differences than of parental level of education.

Environmental Factors

One factor which has been shown to have a cumulative differentiating effect on intellectual functioning is socioeconomic status, with higher socioeconomic status having a relatively greater positive effect for females than for males (Willaims, 1977). Kagan (1971) found cognitive measures such as increases in vocalization, visual attention, vocabulary skills, and identification of embedded figures more clearly

linked to parental socioeconomic status for girls than for boys.

One basis for this sex difference might be the greater variability among social classes in the childrearing of the female (Williams, 1977). Rothbart (1971) reported that upper middle-class mothers spent more time than mothers from lower social classes interacting with their daughters and indicated greater concern with the development of task competence in female offspring. Upper middle-class parents were more likely to promote a value system which develops in their daughters the desire to maintain symbolic signs of approval from teachers and parents through school achievement (Kagan & Kogan, 1970). Childrearing differences as a function of socioeconomic status are not as pronounced for males, of whom certain characteristics, e.g., task accomplishment, are generally expected regardless of social class (Rothbart, 1971).

Parental behaviors have differing effects on the intellectual development of boys and girls (Williams, 1977). In the Berkely Growth Studies, which followed children from infancy through age 18, maternal nurturance and love correlated negatively with male IQ scores in infancy, but with high intellectual achievement later (Bayley, 1970). Maternal love and acceptance were positively related to girls' scores in infancy but unrelated to intellectual abilities as teenagers. A longitudinal study found female performance at 21 months and 18 years related to a highly compatible relationship between parents but independent of maternal behavior toward the girl (Honzik, 1957). The IQ's of sons were positively related to a close mother-son relationship and to father's occupational success and satisfaction. The IQ scores for children of both sexes correlated positively with parents' concern for achievement.

High intellectual ability and achievement in girls has been found to be related to father identification and above average masculinity scores (Hoffman, 1972; Maccoby, 1966). Conversely, the more feminine girl with a strong mother identification is less likely to be intellectually achieving. Hoffman (1972) suggests that a less nurturant mother and an affectionate father would establish cross-sex identification in the girls which is facilitating of intellectual achievement.

The connection between the parent-child relationship and the child's intellectual abilities can be explored through data on ordinal position and family configurations. A study conducted across socioeconomic levels with a large sample of 19-year-old males in The Netherlands found first borns to be higher achievers intellectually, although the effect was less consistent when number of children in the family exceeded four (Belmont, 1973).

A relationship was found between birth order and the test scores of National Merit Scholarship participants (Breland, 1974). A consistently decreasing relationship occurred between mean IQ scores and number of children in the family; first born children from small families had the highest scores and last borns from large families had lowest scores. Stepdown score analysis showed the primary area of IQ difference to be verbal in nature.

Verbal and Spatial Abilities

There are three areas of cognitive functioning in which sex differences are fairly well established: verbal, spatial, and mathematical abilities (Maccoby & Jacklin, 1974). Explanations of these differences have implicated genetic, biological, and sociological factors.

Male superiority on tasks that measure spatial ability has been repeatedly observed (Kagan & Kogan, 1970; Maccoby, 1966; Maccoby & Jacklin, 1976), and spatial ability is the most consistent differentiating ability between the sexes (Maccoby & Jacklin, 1974).

Little sex difference in verbal abilities is found from birth through the early school years; however, girls begin to excel in verbal performance at age 10 or 11 years (Maccoby & Jacklin, 1974). Females read better than boys at ages 9, 13, and 17, and faster at ages 9 and 13 (NAEP, 1976). Boys have more reading problems than girls (Gunderson, 1976), and over ninety percent of children referred to reading clinics are males. Studies of students from the ninth through twelfth grades show girls' superiority on verbal tasks, including both basic and higher-level verbal skills, to increase throughout this time. Conversely, boys' spatial superiority was found to increase throughout the same time period (Maccoby & Jacklin, 1974).

Spatial abilities are more likely than verbal or mathematical abilities to have a sex-linked component (Vanderberg, 1968; Williams, 1977). Evidence also exists for the heritability of verbal ability, although it seems to be more influenced by educational and social factors. No substantial evidence exists to indicate that the verbal heritability component is sex-linked, however (Vandenberg, 1968).

The differential rate of development of the right and left hemispheres of the brain has also been advanced as an explanation for sex differences in verbal and quantitative skills (Kagan, 1971; Maccoby & Jacklin, 1974). Language and speech functions are located in the left hemisphere of the brain, while spatial perception and perception of nonverbal sounds are located in the right hemisphere

(Kagan, 1971; Luria, 1973).

Greater specialization for spatial tasks has been found for males as early as five years of age (Kimura, 1969). The dominant role of the left hemisphere in processing verbal information seems established by age four or five for both sexes (Kimura, 1963). The earlier elaboration of the left hemisphere in females has been thought to facilitate verbal development at the expense of nonlinguistic capacities in girls. This, in turn, may cause females to continue to use this earlier developed verbal mode of expression for problem solving and other functions where it is less effective (Kagan, 1971).

Walberg (1969) found a sex difference in approach to problem solving in physics achievement tests of the Harvard Project Physics. Male physics students performed better on portions of the test requiring visual-spatial skills, while female physics students performed better on verbal test items (Maccoby & Jacklin, 1974). Factor analysis of mathematical aptitude reveals a spatial factor for males but not for females (Maccoby & Jacklin, 1974).

Spatial ability has also been related to childrearing practices. Within-culture comparisons of Africans show adult males obtaining higher spatial scores in cultures which allow young children greater autonomy. No spatial sex differences have been found within the Eskimo culture which encourages independence and autonomy for both male and female children (Kagan & Kogan, 1970).

High spatial ability has been related to availability of the physical environment for exploration and lack of restrictiveness in object experimentation (Bing, 1963). Males typically manifest higher levels of aggressiveness, activity, and mobility in early childhood,

which may result in an advantage in manipulating spatial relationships (Maccoby & Jacklin, 1974; Sherman, 1967).

Female play activities include fewer spatial components than male play activities (Fennema, 1974). Fogelman (1969) suggested that males mechanical play interests and females literary or aesthetic interests are reinforced by society and carried over in the form of the preferences for active learning by males and passive learning by females. Kagan and Kogan (1970) conclude that high spatial ability in women is associated with cross-sex typing and possession of masculine traits.

Bing (1963) found childrearing practices to have a differential effect on male and female children relative to verbal ability. Factors which were related to high verbal abilities in girls were an emphasis on academic achievement and on amount of time spent by the father reading to the child. Rigid, traditional sex role expectations and father strictness were related to high verbal, low spatial ability in girls. Bing (1963) concluded that the essential condition for development of verbal ability was a close parental relationship characterized by a high level of interaction.

Sex Typing

Sex typed behaviors are "those that are less expected and sanctioned when performed by one sex, and, in contrast, are considered to be more appropriate when manifested by the other sex" (Mischel, 1970, p. 4). All known societies ascribe certain behaviors to males and females, and while these define sex roles for the individual, they also reflect the cultural concepts of masculinity and femininity (Williams, 1977).

Not only are prescribed sex typed behaviors different for males and females, they are also accorded unequal status in Western culture. Characteristics ascribed to men are positively valued more often than those ascribed to women by both the general public and mental health professionals (Albert, 1963; Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972). In a study of the childrearing practices employed with male and female children, Block (1973) found an emphasis on achievement and competition, control of feelings and concern for rule conformity for males, and emphasis on developing and maintaining close interpersonal relationships for females. Masculine traits deal with competence, rationality and assertion, and feminine ones relate to warmth and expressiveness (Broverman et al., 1972). In an experimental problem solving situation, parents of preschool boys were significantly more concerned with the manifestation of task-oriented behavior than parents of preschool girls (Block, 1973).

There is evidence, however, that a high level of sex typing may not be ideal for either sex. High femininity in females has been correlated with high anxiety, low self-esteem, and low social acceptance. While high masculinity in adolescent males has been correlated with better psychological adjustment, it has been related to higher neuroticism, anxiety, and low self-acceptance in adult males (Bem, 1975).

Androgeny, the incorporation of positive aspects of both masculine and feminine sex roles, is a positive alternative to traditional sex role stereotyping (Huston-Stein, 1976). Androgynous individuals are more likely to display behavioral adaptability and engage in situationally appropriate behavior regardless of a situational sex role stereotype (Bem, 1975). In regard to sex typing, Block (1973) sees androgeny

as the ideal:

. . . the ultimate goal in development of sexual identity is not the achievement of masculinity or femininity as popularly conceived. Rather [it] means . . . the earning of a sense of self . . . secure enough to permit the individual to manifest human qualities our society, until now, has labelled as unmanly or unwomanly (p. 512).

Acquisition of Sex Typed Behaviors

Three major theoretical positions regarding the process by which the child acquires appropriate sex typed behaviors are: psychoanalytic, cognitive-developmental, and social learning theories.

According to psychoanalytic theory, the child becomes sex typed through identification with the same-sex parent. Identification is the incorporation of the psychological properties of another into one's own repertoire of properties without receiving overt rewards for doing so (Sears, 1957). The strength of the child's identification depends upon four factors: the amount of affectionate nurturance the mother bestows upon the child; the severity of demands placed on the child by mother; withdrawal of love as a method of discipline; and presence or absence of the model. Mischel (1970) reminds us that Freud distinguished two types of identificatory mechanisms, anaclitic and identification with the aggressor. Anaclitic identification is based on the intense early dependency of the child for the mother, which serves as the basis for female identification. Anaclitic identification, however, is supplemented in boys by identification with the father through resolution of the Oedipus complex.

Observational learning and cognitive processes are components of both social learning theory and cognitive developmental theory. The

child comes to recognize self as male or female through observational learning (Kohlberg, 1966), and ensuing concepts of masculinity and femininity include differences in body structure and capacity. Kagan (1964) emphasizes the link between sex role stereotypes and sex role standards. The latter summarize the culturally approved characteristics for males and females and serve as guidelines for individual behavior, providing motivation to match behavior to internalized sex role standards.

The child develops cognitive self-categorizations for gender early in life which, once formed, tend to be irreversible and stable (Kohlberg, 1966). This "direct self-categorization of gender is given central importance as the fundamental organizer of sex role attitudes and values" (Mischel, 1970, p. 25). The child maintains sexual identity due to strong tendencies for cognitive consistency. This consistency over time is high for self-concept, descriptive categories, personality labels, and attitudes and values which individuals attribute to themselves on trait rating scales.

According to social learning theory, acquisition of sex typed behaviors occurs through discrimination, generalization, observational learning and patterns of reinforcement and conditioning (Mischel, 1970). Observational learning leads to the acquisition of new concepts and behavior and may also have an eliciting or inhibiting effect on performance of previously learned behavior. Specific contingencies of reward and punishment have been shown as unnecessary for the acquisition of behavior.

No single theory has proven adequate in the explanation of sex role development. Maccoby and Jacklin (1974) state:

. . . genetic factors, 'shaping' of boylike and girl-like behavior by parents and other socializing agents, and the child's spontaneous learning of behavior appropriate for his sex through imitation . . . (p. 360).

are factors which interact to account for sex typing.

Sex role preferences are observed in both boys and girls beginning at about the age three and are well established by age five. Boys show stereotypic sex role behavior at an earlier age than girls and are more likely to avoid sex-inappropriate activities and to prefer activities associated with their sex role (Fagot & Littman, 1975; Hartup & Moore, 1963).

Familial Antecedents

Sex typing is a critical aspect of childrearing. In an extensive literature review regarding childrearing differences for males and females, Maccoby and Jacklin (1974) found the sexes treated similarly on most dimensions except those related to adoption of appropriate sex typed behaviors. Boys received more pressure than girls to conform to cultural stereotypes. In experimental play situations, parents of preschool children showed more concern when sons chose feminine activities than when daughters chose masculine ones (Lansky & McCay, 1963), and parents made more rigid selections for boys than girls on "IT" test choices for preschool children (Fling & Manosevitz, 1972).

Three variables frequently hypothesized as influencing parental identification are warmth, power, and aggression (Bandura, Ross & Ross, 1961; Hetherington & Frankie, 1970). In an experimental setting, high warmth mothers facilitated more imitation than warm fathers, and maternal warmth was found to be the most salient factor for imitation in girls (Hetherington & Frankie, 1970). Mussen and Parker (1970)

found no difference in the amount of imitative behavior of daughters of nurturant and nonnurturant mothers relative to a specific problem-solving task. However, more modeling of incidental behaviors occurred with nurturant mothers. While girls with warm, nurturant mothers had higher femininity scores on the "IT" test (Mischel, 1970), paternal warmth facilitated imitation equally in boys and girls (Hetherington & Frankier, 1970).

Dominance is also an important factor in parental imitation. Children have been found to imitate the parent perceived to be the controller of resources and rewards (Bandura et al., 1961). The dominant parent tends to be imitated more regardless of gender of parent or child (Hetherington & Frankie, 1970; Mischel, 1970). Examination of parental imitation in relation to sex and dominance revealed greater imitation of a dominant mother by both boys and girls; however, with father dominance, boys imitated father and girls continued to imitate mother (Hetherington & Frankie, 1970).

While imitation of the dominant parent was found to be greater in homes characterized by high stress, Baxter (1964) found an inverse relationship between degree of father identification and level of conflict in the mother-father relationship. It was hypothesized that in a conflicted marital relationship, mother does not encourage the child's allegiance to father.

Children recall behaviors performed by a same sex model better than those performed by an opposite sex model (Mischel, 1970). Since children are rewarded for imitating same sex behaviors, they are more attentive to these.

Parents provide symbols which give information to the child

regarding gender identity and subsequent behavioral expectations. Rheingold and Cook (1975) found different toys and furnishings in rooms of boys and girls, with girls rooms containing more dolls and featuring more floral and ruffled furnishings. While boys rooms contained more educational-art materials, spatial-temporal toys, sports equipment and toy animals, no difference was found between sexes for books and musical objects.

Sex role learning is influenced by other siblings as well as by parents. Both male and female children who had older male siblings showed a more masculine sex role preference on the "IT" test than singletons or those with older female siblings (Unger, 1976).

Achievement Motivation

The research evidence on achievement motivation is inconsistent relative to males and females. It is also inconsistent within the female classification due to a lack of consensus among theorists as to the nature of achievement motivation in females. A possible basis for this discrepancy is that achievement motivation has been studied almost exclusively in relation to males, and the pioneering work in the area (McClelland, Atkinson, Clark, & Lowell, 1953) was conducted exclusively with male subjects (Bardwick, 1971).

The phenomenon of female achievement motivation is elusive. Although achievement motivation measures do not show sex differences, a great discrepancy exists in the actual achievement levels of women and men. Women represent nearly half of the labor force, yet they do not contribute to the fields of science, humanities, or the arts to the same degree as men (Farmer, 1976; Maccoby & Jacklin, 1974). In 1974, women

represented less than 20 percent of the managers and administrators and the majority of these were elementary school teachers (Farmer, 1976).

Both psychological and societal factors have been proposed to account for the great differential in achievement levels between males and females: (a) women differ from men in their underlying motives and values, (b) women are motivated to be successful but define success differently than men, and (c) women's perceptions of their abilities and why they succeed or fail reinforce a pattern of nonachievement (Frieze, Parsons, Johnson, Ruble, & Zellman, 1978; Hoffman, 1972; Huston Stein & Bailey, 1973; Veroff, 1977).

Women have been found to possess greater anxiety and have more fear of success than men (Frieze et al., 1978) which may inhibit achievement behavior (Maccoby & Jacklin, 1974). By grade three, more anxious boys and girls tend to score lower on intelligence tests, suggesting that anxiety interferes with cognitive functioning (Montanelli & Hill, 1969).

The theme of ambivalence and conflict has attracted theoretical interest regarding female achievement behavior (Bardwick, 1971; Mednick & Weissman, 1975). Girls are socialized early to be sensitive to the evaluations of others in their own self-evaluation, and women have higher affiliative needs than men (Hoffman, 1972). Young girls are socialized to do well in school, and this can occur within a safe context as affiliative needs are met with approval for performance. High level academic or vocational achievement, however, is not compatible with the adult feminine stereotype, and subsequent conflict regarding achievement motivation and affiliative goals will diminish

achievement behavior and/or result in anxiety (Hoffman, 1972; Williams, 1977).

Horner (1974) theorized that women fail to achieve as a result of the motive to avoid success, a stable personality characteristic acquired early in life in conjunction with sex role standards. The motive to avoid success is characterized by a disposition to feel anxious regarding success in competitive achievement situations because such behavior is inconsistent with internal standards of femininity and may result in negative consequences. Horner postulated that the motive to avoid success would be highest in intellectually bright women who had incorporated achievement as a value. Mednick and Weissman (1975), however, found no correlation between fear of success and intelligence.

Recent study of achievement motivation in females has focused on achievement behavior in relation to sex role definitions (Huston Stein & Bailey, 1973), which are learned very early in life. Children from second through twelfth grades consider social, verbal and artistic skills to be feminine, and mechanical, spatial, and athletic skills to be masculine. Math is considered masculine by adolescents but not by elementary school children. Huston Stein and Bailey concluded that cultural stereotyping accounts for the differing direction of females' achievement efforts: "the goal is attainment of a standard of excellence, but the areas in which such attainment is most important are somewhat different from males" (p. 350).

Veroff (1977) proposed that males and females have differing types of achievement motivation, impact and process, respectively. Females are more concerned with achievement characterized by autonomy, responsibility and competence, while males are more concerned with achievement

characterized by power, competition, and task accomplishment.

Females' achievement motivation and behavior may be more dependent upon external and social clues than that of males (Hoffman, 1972). Males possess greater achievement need directed toward successful task accomplishment, while females exhibit greater affiliative social need directed toward successful interpersonal relations. Females are more likely to write high achievement imagery stories when told they are a measure of social skills (Frieze et al., 1978). Males are more intrinsically motivated while females are extrinsically motivated by praise and recognition (Hoffman, 1972; Manley, 1977).

Attribution theory suggests that the individual's perceptions regarding causes of events and expectencies for success are determining factors in achievement behavior (Frieze et al., 1978). People with high expectations for success tend to perform better on achievement tasks. Girls are more anxious than boys, more likely to underestimate their abilities, and more apt to lack confidence in their judgment when it is contrary to others (Hoffman, 1972). Males tend to have higher expectations for success than females as early as elementary school (Frieze et al., 1978).

A variety of cultural factors underlie this condition. The encouragement of achievement is greater for boys than for girls. There are more male and female underachievers in grade school, but this ratio reverses with age until there are more female underachievers by college age (Frieze et al., 1978). A general decline in IQ for girls occurs throughout childhood and adolescence, although this does not seem to occur in girls with less traditionally feminine identification (Maccoby, 1966). Teachers respond differentially to boys and

girls, with boys receiving more blame for disobedience but also more positive attention (Sears & Feldman, 1974). Girls received more disapproval than boys for lack of knowledge. In teachers' descriptions of incidents in which they rewarded creative behavior, 74 percent involved boys, 26 percent involved girls (Williams, 1977).

In a comparison between first and fifth grade children, a significant relationship was found between parental and children's occupational aspirations for the child. Among younger children, girls had higher vocational aspirations than boys, but this reversed for older children. Parental educational aspirations differed for boys and girls according to sex and social class, with social class differences stronger for younger children and sex differences more important for older boys and girls (Unger, 1976).

A study of prize-winning children's books found females portrayed as dull and stereotyped, neat and passive, with their status determined primarily by their relationship to males. Working mothers and divorced women were almost nonexistent, and women's occupational world was presented as consisting of glamour and service (Williams, 1977).

Achievement Motivation Antecedents

The early work of McClelland et al. (1953) proposed antecedents for development of achievement motivation in males. McClelland (Atkinson, 1958) emphasized the importance of early learning in the formation of achievement motives. Rosen (1958) saw the antecedents of achievement motivation as emotional and unverballed, and stressed the importance of value orientations in channelling the achievement motive. While achievement motivation provides internal impetus for excelling, value

orientation defines how achievement motivation will be manifest for the individual. Winterbottom (1958) concluded that mothers of male children with high achievement motivation made greater demands on the child before age eight, which was coupled with intense rewarding of accomplishments including high use of physical affection.

Research efforts to isolate variables associated with achievement motivation in females have provided inconsistent results. An area of discrepancy is on the optimum level of parental warmth for rearing the female child. Crandall proposed that high levels of early maternal warmth and nurturance were negatively related to females' achievement orientation, with moderate maternal warmth or slight hostility related to a strong orientation (Manley, 1977). Competent female readers had less affectionate and nurturant mothers than girls with less reading proficiency; girls who excelled on arithmetic achievement tests had mothers who were relatively low in nurturant behavior.

Slight maternal hostility toward the daughter during the first three years of life, with acceleration from 6-11 years has been associated with intellectual mastery in adulthood (Manley, 1977). Achievement motivation has been positively related to adolescent females' tendency to be critical and aggressive toward their mothers (Huston Stein & Bailey, 1973). Helson (1968) found younger sisters of creative, achieving subjects reported a more congenial relationship with their mothers than their outstanding sisters. Conversely, Alper (1977) found achievement facilitated by parental warmth and support and inhibited by its lack.

There is little research on the role of father warmth in regard to female achievement (Huston Stein & Bailey, 1973; Manley, 1977). It has

been hypothesized, however, that father-daughter correlations might show significant relations between parental behavior and daughter's intellectual achievements (Manley, 1977).

Social learning theory and psychoanalytic theory present frameworks to explain how the child can identify with one or both parents. Stereotypically feminine girls who strongly identify with their mothers manifest lower achievement motivation (Manley, 1977). Helson (1968) found a correlation between low maternal nurturance and achievement modeling behavior. Creative women mathematicians were alienated from their mothers and identified primarily with their fathers, although fathers were characterized as giving relatively little affection or attention to them. Adult females high in intellectual achievement efforts have recalled their fathers as hostile and rejecting (Huston Stein & Bailey, 1973). The creative achievers in Helson's study of Mills students reported ties of equal importance with their mothers and fathers during childhood.

Identification with an achieving maternal model appears to facilitate achievement oriented behavior for females. Maternal employment in middle-class families has been associated with high educational and occupational aspirations for young females. Daughters of working women adopt less traditional feminine characteristics than daughters of non-working women and are more likely to pursue a career (Broverman, 1972; Huston Stein & Bailey, 1973).

Females generally have less encouragement than males for independence and separation from the mother, although facilitation of independence may be a salient factor in the development of achievement as culturally defined (Hoffman, 1972). Sibling constellations which

encourage the female child to relinquish maternal dependency are most conducive to creative achievement (Helson, 1968).

Achievement motivation has also been studied in relation to birth ordinal position. First born children are consistently higher than their siblings in achievement (Hall & Beil-Warner, 1977; Helson, 1968). Whether the basis for this is biological or social has not been determined (Rothbart, 1971), although evidence indicates that first born children experience different childrearing practices than later born siblings.

Helson (1968) concluded that the first born's ordinal position predicates greater achievement, because mastery and competence become this child's avenue for parental approval following the birth of other children. Sears, Maccoby and Levin (1957) found oldest children to behave more aggressively toward authority and to be allowed greater expression of this behavior by parents. First borns were, however, more likely than their siblings to be physically punished. Longitudinal comparisons of first and second born children within the same family revealed that the first child was treated less warmly, more coercively, and with less consistency over time than the second child at the same age (Hoffman & Lippitt, 1970).

Rothbart (1971) found mothers of first borns to use more complex language in explaining an achievement task, to be more intrusive, and to exert more pressure for task completion. These maternal responses were stronger for first born females than for first born males.

Sex role prescriptions have traditionally given female children more responsibility for sibling care than their male counterparts. The larger the size of the family, the more assistant mothering the

oldest child would be expected to assume. First born female children from smaller families, therefore, should have greater adult-child interaction and less limitation on achievement motivation than those from larger families (Hall & Beil-Warner, 1977).

Childhood Factors

Antecedents have been postulated for each of the three areas selected for assessing current psychological status: intellectual ability, psychological sex typing, and achievement motivation. These antecedents served as the basis for the Childhood Experiences Questionnaire which was developed around four major themes: personal characteristics of the subject, parental characteristics, parental childrearing practices, and play activities and materials. Variables which have consistently been found significant in the literature or which provided a logical mediating function served as the basis for hypotheses regarding the Childhood Experiences Questionnaire.

Spatial ability appears to be associated with success in mathematics and science (Hyde, Geringer & Yen, 1975; Leskow & Smock, 1970). This, in turn, is related to logical ability and would seem imperative for successful performance in the professional career categories of physician or lawyer. While spatial ability has a hereditary component (Vandenberg, 1968), it has also been linked to childrearing practices, including availability of the physical environment for exploration and manipulation (Bing, 1963). Play patterns of males have more spatial components (Fennema, 1974) which seems to be encouraged by parents. For example, Rheingold and Cook (1975) found boys' rooms to contain more spatial-temporal, educational-art and sports equipment than girls' rooms.

Kacerguis and Adams (1979) postulated that play activities and materials during childhood may be significant in female career choice and success. Thus, it was hypothesized that female physicians and lawyers would have expressed a preference for, and received greater parental tolerance of, more traditionally masculine play patterns during childhood.

It was expected that families of physicians and lawyers would belong to a higher socioeconomic group than category 3 and 4 families. Upper middle-class parents have been found to be more concerned with the development of competence in their daughters (Rothbart, 1971) and to encourage the development of values to foster educational achievement (Kagan & Kogan, 1970).

First born and only children have been found to score higher on intellectual measures (Belmont, 1973; Breland, 1974) and to attain higher levels of achievement (Hall & Beil-Warner, 1977; Helson, 1968). Therefore, it was expected that level of success and typicalness of occupation would relate to ordinal birth position.

It was also expected that women in atypical careers would have experienced a close, instrumental-type relationship with their fathers which would facilitate a more masculine sex role orientation. Cross-sex typing has been associated with higher intellectual ability and greater achievement motivation in females (Hoffman, 1972; Maccoby, 1966). Another factor associated with high educational and occupational aspirations in females is maternal employment (Broverman, 1972; Huston Stein & Bailey, 1973).

Individuals with high expectations for success perform better on achievement tasks (Frieze et al., 1978); achievement and competition are stressed more for males than females (Block, 1973); and males

achieve at higher levels than females (Farmer, 1976). Therefore, it was expected that the parents of high success subjects, and all physicians and lawyers, would display nontraditional parenting behavior by having high aspirations for their daughters and allowing them flexibility and providing support in the pursuit of achievement efforts, including atypically feminine interests.

REFERENCES

- Albert, E. The roles of women: A question of values. In S. Farber & R. Wilson (Ed.), The potential of women. New York: McGraw-Hill, 1963.
- Alper, T. Where are we now? Psychology of Women Quarterly, 1977, 1, 294-302.
- Atkinson, J.W. (Ed.) Motives in fantasy, action, and society. Princeton, New Jersey: Van Nostrand, 1958.
- Bandura, A., Ross, D., & Ross, S. Transmission of aggression through imitation of aggressive models. Journal of Abnormal and Social Psychology, 1961, 63, 575-582.
- Bardwick, J.M. Psychology of women: A study of bio-cultural conflicts. New York: Harper and Row, 1971.
- Baxter, J. Father identification as a function of the mother-father relationship. Journal of Individual Psychology, 1964, 20, 1967-1971.
- Bayley, N. Development of mental abilities. In P.H. Mussen (Ed.), Carmichael's manual of child psychology (3rd ed., vol. 2). New York: John Wiley, 1970.
- Belmont, L., & Marolla, A. Birth order, family size, and intelligence. Science, 1973, 1096-1099.
- Bem, S.L. Sex role adaptability: One consequence of psychological androgeny. Journal of Personality and Social Psychology, 1975, 31, 634-643.
- Bing, E. Effects of childrearing practices on development of differential cognitive abilities. Child Development, 1963, 34, 631-648.
- Block, J. Conceptions of sex role: Some cross-cultural and longitudinal perspectives. American Psychologist, 1973, 28, 512-529.
- Breland, H. Birth order, family configuration and verbal achievement. Child Development, 1974, 45, 1011-1019.

- Broverman, I.K., Vogel, S.R., Broverman, D.M., Clarkson, F.E., & Rosenkrantz, P.S. Sex role stereotypes: A current appraisal. Journal of Social Issues, 1972, 28, 59-78.
- Erlenmeyer-Kimling, L., & Jarvik, L. Genetics and intelligence: A review. Science, 1963, 142, 1477-1478.
- Fagot, F.I., & Littman, J. Stability of sex role and play interest from preschool to elementary school. Journal of Psychology, 1975, 89, 285-292.
- Farmer, H.S. What inhibits achievement and career motivation in women? The Counseling Psychologist, 1976, 6, 12-15.
- Fennema, E. Sex differences in mathematics learning, why? Elementary School Journal, 1974, December, 183-190.
- Fling, S., & Manosevitz, M. Sex-typing in nursery school: Children's play interests. Developmental Psychology, 1972, 7, 146-152.
- Fogelman, K.R. Piagetian tests and sex differences--II. Educational Research, 1969, 12, 154-155.
- Frieze, I.H., Parsons, J.E., Johnson, P.B., Ruble, D.N., & Zellman, G.L. Women and sex roles. New York: Norton, 1978.
- Gunderson, D.V. Sex differences in language and reading. Language Arts, 1976, 53, 300-306.
- Hall, J. & Beil-Warner, D. Ordinal position, family size, and assertiveness. Psychological Reports, 1977, 40, 1083-1088.
- Hartup, W.W., & Moore, S.G. Avoidance of inappropriate sex-typing by young children. Journal of Consulting Psychology, 1963, 27, 467-473.
- Helson, R. Effects of sibling characteristics and parental values on creative interest and achievement. Journal of Personality, 1968, 36, 589-607.
- Hetherington, E.M., & Frankie G. Effects of parental dominance, warmth and conflict on imitation in children. Journal of Personality and Social Psychology, 1967, 6, 119-125.
- Hoffman, L.W. Early childhood experiences and women's achievement motives. Journal of Social Issues, 1972, 28, 129-155.
- Hoffman, L., and Lippitt, R. The measurement of family life variables. In P.H. Mussen (Ed.), Handbook of research methods in child development. New York: John Wiley, 1970.

- Honzik, M. Developmental studies of parent-child resemblance in intelligence. Child Development, 1957, 28, 215-228.
- Horner, M.S. Toward an understanding of achievement-related conflicts in women. In J. Stacey (Ed.), And Jill came tumbling after: Sexism in American education. New York: Dell, 1974.
- Huston Stein, A. Issues in child development: New directions in understanding sex roles. Newsletter of the Society for Research in Child Development, Summer, 1976,
- Huston Stein, A., & Bailey, M.M. The socialization of achievement orientation in females. Psychological Bulletin, 1973, 80, 345-366.
- Hyde, J.S., Geringer, E.R., & Yen, W.M. On the empirical relation between spatial ability and sex differences in other aspects of cognitive performance. Multivariant Behavioral Research, 1975, 10, 289-309.
- Kagan, J. Acquisition and significance of sex typing and sex role identity. In M. Hoffman and L. Hoffman (Eds.), Review of child development research (Vol. 1). New York: Russell Sage, 1964.
- Kagan, J. Change and continuity in infancy. New York: John Wiley, 1971.
- Kagan, J., & Kogan, N. Individual variation in cognitive processes. In P.H. Mussen (Ed.), Carmichael's manual of child psychology (3rd ed., Vol. 1). New York: John Wiley, 1970.
- Kimura, D. Spatial localization in left and right visual fields. Canadian Journal of Psychology, 1969, 23, 445-448.
- Kohlberg, L. A cognitive-developmental analysis of children's sex-role concepts and attitudes. In E.E. Maccoby (Ed.), The development of sex differences. Stanford: Stanford University Press, 1966.
- Lansky, L.M., & McCay, G. Sex-role preference of kindergarten boys and girls: Some contradictory results. Psychological Reports, 1963, 13, 415-421.
- Leskow, S., & Smock, C.D. Developmental changes in problem-solving strategies: Permutation. Developmental Psychology, 1970, 2, 412-422.
- Luria, A.R. The working brain. London: Penguin Press, 1973.
- Maccoby, E.E. Sex differences in intellectual functioning. In E.E. Maccoby (Ed.), The development of sex differences. Stanford: Stanford University Press, 1966.
- Maccoby, E.E., & Jacklin, C.N. The psychology of sex differences. Stanford: Stanford University Press, 1974.

- Manley, R.O. Parental warmth and hostility as related to sex differences in children's achievement orientation. Psychology of Women Quarterly, 1977, 1, 229-246.
- McClelland, D., Atkinson, J.W., Clark, R.A., & Lowell, E.L. The achievement motive. New York: Appleton-Century-Crofts, 1953.
- Mednick, M.T., & Weissman, H.J. The psychology of women--selected topics. In M.R. Rosenzweig and L.W. Porter (Eds.), Annual Review of Psychology (Vol. 26). Palo Alto; Annual Reviews, 1975.
- Mischel, W. Sex typing and socialization. In P.H. Mussen (Ed.), Carmichael's manual of child psychology (3rd ed., vol. 2). New York: John Wiley, 1970.
- Montanelli, D.S., & Hill, K.T. Children's achievement expectations and performance as a function of two consecutive reinforcement experiences, sex of subject, and sex of experimenter. Journal of Personality and Social Psychology, 1969, 13, 115-128.
- Mussen, P.H., & Parker, A. Mother nurturance and girls incidental imitative learning. Journal of Personality and Social Psychology, 1965, 2, 94-97.
- NAEP Assessment. Why is there a disparity in achievement? Puzzles and paradoxes: Male dominance in educational success. Education Digest, 1976, 41, 11-14
- Rheingold, H., & Cook, K. The contents of boys' and girls' rooms as an index of parents' behavior. Child Development, 1975, 46, 459-463.
- Rosen, B.C. The achievement syndrome: A psychocultural dimension. In J.W. Atkinson (Ed.), Motives in fantasy, action, and society. Princeton, New Jersey: Van Nostrand, 1958.
- Rothbart, M.K. Birth order and mother-child interaction in an achievement situation. Journal of Personality and Social Psychology, 1971, 17, 113-120.
- Sears, P.S., & Feldman, D.H. Teacher interactions with boys and with girls. In J. Stacey (Ed.), And Jill came tumbling after: Sexism in American education. New York: Dell, 1974.
- Sears, R.R. Identification as a form of behavioral development. In D.B. Harris (Ed.), The concept of development. Minneapolis: University of Minnesota Press, 1957
- Sears, R.R., Maccoby, E.E., & Levin, H. Patterns of child rearing. White Plains, New York: Row, Peterson, 1957.

- Sherman, J.A. Problems of sex differences in space perception and aspects of intellectual functioning. Psychological Review, 1967, 74, 290-299.
- Unger, R. Male is greater than female: The socialization of status inequality. The Counseling Psychologist, 1976, 6, 2-9.
- Vanderberg, S.G. Primary mental abilities or general intelligence? Evidence from twin studies. In J.M. Thoday and A.S. Parkes (Eds.), Genetic and environmental influences on behavior. New York: Plenum, 1968.
- Veroff, J. Process vs. impact in men's and women's achievement motivation. Psychology of Women Quarterly, 1977, 1, 283-292.
- Walberg, H.J. Physics, femininity, and creativity. Developmental Psychology, 1969, 1, 47-54.
- Williams, J.H. Psychology of women: Behavior in a biosocial context. New York: Norton, 1977.
- Winterbottom, M.R. The relation of need for achievement to learning experiences in independence and mastery. In J.W. Atkinson (Ed.), Motives in fantasy, action, and society. Princeton, New Jersey: Van Nostrand, 1958.

APPENDIX B

SUPPLEMENTARY MATERIALS


Oklahoma State University

DEPARTMENT OF FAMILY RELATIONS
AND CHILD DEVELOPMENT

STILLWATER, OKLAHOMA 74074
241 HOME ECONOMICS WEST
(405) 624-5057

Dear (Subject)

We are currently contacting professional women in Oklahoma in an effort to identify factors associated with the type of career field a woman chooses and the degree of satisfaction and success she experiences. We hope to learn whether there are any obvious factors that influence the decision to embark on a career, and how a woman's personal characteristics may interrelate with the functions and demands of her work to either enhance or thwart her motivation, performance, and extent of participation in her career. I am writing to ask your assistance and cooperation in this work.

We would like to ask you to help us by providing some general information about your childhood, and by replying to a short series of cognitive and personality measures. Ms. Sue Williams, a doctoral student here at Oklahoma State University and a member of the faculty at Central State University, will be collecting this information as a part of her dissertation research.

Ms. Williams will telephone you within the next few days to discuss the project and answer any questions you might have, and to see if you would be willing to participate. If so, she would arrange a convenient time and place to interview you and present the materials. This would require approximately 35 minutes. Some of the information she wishes to gather can be provided by completing a short questionnaire when she comes to visit with you personally. The anonymity of your participation would be preserved at all times.

I hope that you will agree to participate when Ms. Williams calls. The question of career choice and job satisfaction is an important one for professional women today. It is only through the cooperation of women such as yourself that we can hope to answer that question. We would be happy to share the outcome of the study with you at its conclusion. Also, I believe you will find your brief contacts with Ms. Williams to be interesting and enjoyable.

Sincerely,

John C. McCullers, Ph.D.
Professor of Family Relations
and Child Development
Professor of Psychology

cc: Ms. Williams

CHILDHOOD EXPERIENCES QUESTIONNAIRE

Parental Information:

	1. Age at your birth	2. Your age at their death (if applic.)	3. Highest attained level of educ.
Mother	1	1	1
Father	2	2	2

4. Your age when parents divorced (if applicable) _____
5. Was any person other than your natural mother and father significantly involved in your child rearing?
 _____ 1 Yes _____ 2 No
6. If so, describe the relationship of this person to you.
7. Which parent was most likely to discipline you during early childhood?
 _____ 1 Father _____ 2 Mother _____ 3 Mother & Father Equally _____ 4 Other caregiver (spec.) _____
8. Do you feel that you had more, less, or about the same amount of responsibility as your siblings from 0-12?
 _____ 1 Less _____ 2 Same _____ 3 More
9. Discuss briefly in what way.

Identify the ways you were usually punished during the years from 0-6 by each of your parents. Use the following scale: Never = 1, Seldom = 2, Sometimes = 3, Quite Often = 4, Very Often = 5

Type of punishment	Father					Mother					
10. Physically punished	1	2	3	4	5	16.	1	2	3	4	5
11. Withdrawal of love	1	2	3	4	5	17.	1	2	3	4	5
12. Taking away privileges	1	2	3	4	5	18.	1	2	3	4	5
13. Isolation	1	2	3	4	5	19.	1	2	3	4	5
14. Shaming, scolding	1	2	3	4	5	20.	1	2	3	4	5
15. Other (specify)	1	2	3	4	5	21.	1	2	3	4	5

Identify the extent to which the following types of rewards were used with you for "good behavior" by each of your parents during the years from 0-6. Use the following scale: Never = 1, Seldom = 2, Sometimes = 3, Quite often = 4, Very often = 5

<u>Type of reward</u>	<u>Father</u>					<u>Mother</u>					
22. Physical demonstrativeness (hugging, kissing, etc.)	1	2	3	4	5	27.	1	2	3	4	5
23. Verbal praise	1	2	3	4	5	28.	1	2	3	4	5
24. Money or allowance	1	2	3	4	5	29.	1	2	3	4	5
25. No special attention; good behavior taken for granted	1	2	3	4	5	30.	1	2	3	4	5
26. Special privileges (Name) _____	1	2	3	4	5	31.	1	2	3	4	5

Identify the degree to which you perceive each of your parents wanted you to develop and display each of the following behaviors during your preschool and middle childhood years (ages 3-12). Use the following scale: Never = 1, Seldom = 2, Sometimes = 3, Quite often = 4, Very often = 5.

<u>Behavior</u>	<u>Father</u>					<u>Mother</u>					
32. Play to win	1	2	3	4	5	42.	1	2	3	4	5
33. Do your best ALWAYS	1	2	3	4	5	43.	1	2	3	4	5
34. Be pleasant and obedient	1	2	3	4	5	44.	1	2	3	4	5
35. Look pretty and be ladylike	1	2	3	4	5	45.	1	2	3	4	5
36. Do things for yourself	1	2	3	4	5	46.	1	2	3	4	5
37. Make very good grades in school	1	2	3	4	5	47.	1	2	3	4	5
38. Make your own decisions (as much as possible)	1	2	3	4	5	48.	1	2	3	4	5
39. Behave responsibly	1	2	3	4	5	49.	1	2	3	4	5
40. Stand up for your own rights	1	2	3	4	5	50.	1	2	3	4	5
41. Be considerate of others	1	2	3	4	5	51.	1	2	3	4	5

Try to assess the amount of affection and warmth shown to you by each of your parents throughout your childhood.

	Hostile	Quite Cold	Matter-of-Fact	Quite Warm	Very Warm
Father:					
51. 0-6 yrs.	1	2	3	4	5
52. 7-12 yrs.	1	2	3	4	5
53. 13-18 yrs.	1	2	3	4	5

Mother:

54. 0-6 yrs.	1	2	3	4	5
55. 7-12 yrs.	1	2	3	4	5
56. 13-18 yrs.	1	2	3	4	5

What tasks were your primary responsibility during each period of your childhood? Check all applicable.

57. Early Childhood 0-6 yrs. 58. Middle Childhood 7-12 yr. 59. Adolescence 13-18 yr.

- | | | |
|--|---|---|
| <input type="checkbox"/> 1 Care of room & possessions | <input type="checkbox"/> 1 Care of room & possessions | <input type="checkbox"/> 1 Care of room & possessions |
| <input type="checkbox"/> 2 Care of pets & animals | <input type="checkbox"/> 2 Care of pets & animals | <input type="checkbox"/> 2 Care of pets & animals |
| <input type="checkbox"/> 3 Helping with outdoor chores | <input type="checkbox"/> 3 Helping with outdoor chores | <input type="checkbox"/> 3 Helping with outdoor chores |
| <input type="checkbox"/> 4 Some housekeeping tasks (dusting, eg) | <input type="checkbox"/> 4 Some housekeeping tasks | <input type="checkbox"/> 4 Some housekeeping tasks |
| <input type="checkbox"/> 5 Care of siblings | <input type="checkbox"/> 5 Care of siblings | <input type="checkbox"/> 5 Care of siblings |
| <input type="checkbox"/> 6 No regular duties | <input type="checkbox"/> 6 No regular duties | <input type="checkbox"/> 6 No regular duties |
| <input type="checkbox"/> 7 Other (specify) | <input type="checkbox"/> 7 Other (specify) | <input type="checkbox"/> 7 Other (specify) |
| _____ | _____ | _____ |
| _____ | <input type="checkbox"/> 8 Earning some of own spending money | <input type="checkbox"/> 8 Earning some of own spending money |

60. Identify the approximate amount of free time that you spent alone or privately during early childhood (0-6).

Never	Seldom	Sometimes	Quite Often	Very Often
1	2	3	4	5

Select the best response to indicate your perception of your parents' marriage when you were a child.

	Very unhappy	Mostly unhappy	Sometimes happy	Mostly happy	Very happy
69. 0-6 yrs.	1	2	3	4	5
70. 7-12 yrs.	1	2	3	4	5
71. 13-18 yrs.	1	2	3	4	5

Select the best response to indicate your degree of happiness when you were a child using the above scale:

72. 0-6 yrs.	1	2	3	4	5
73. 7-12 yrs.	1	2	3	4	5
74. 13-18 yrs.	1	2	3	4	5

75. Identify your perception of your physical maturity (the time you reached puberty) in relation to peers.

 1 Early maturer 2 Average time of maturity Late maturer

76. Identify whether you began to "single date" earlier, later, or at about the same time as your peers?

 1 Earlier 2 About the same time 3 Later

How would you rate your family social class when you were entering?

77. First grade (check one) 78. Eighth grade (if different, check one)

<u> </u> 1 upper middle-class	<u> </u> 1 upper middle-class
<u> </u> 2 middle-class	<u> </u> 2 middle-class
<u> </u> 3 lower middle-class	<u> </u> 3 lower-middle
<u> </u> 4 upper lower-class	<u> </u> 4 upper lower-class
<u> </u> 5 lower class	<u> </u> 5 lower class

Did your mother work for salary outside the home during your childhood? If so, how many years did she work, and what type of work did she do?

Your age	Did mother work		No. yrs worked during period	Major type of work
	Yes	No		
79. 0-6 years	1	2	80. _____	81. _____
82. 7-12 years	1	2	83. _____	84. _____
85. 13-18 years	1	2	86. _____	87. _____

Did your father work for salary outside the home during your childhood?
 If so, how many years did he work, and what type of work did he do?

Your Age	Did father work		No. yrs worked during period	Major type of work
	Yes	No		
88. 0-6 yrs	1	2	89. _____	90. _____
91. 7-12 yrs	1	2	92. _____	93. _____
94. 13-18 yrs	1	2	95. _____	96. _____

97. What do you feel were particular advantages, disadvantages to being a girl during your childhood?

98. Use the chart below to show the pattern of mobility for your family. Circle the age during which your family moved; write M, R, or S in the space below to represent whether you were living in a metropolitan, rural, or small city or town setting.

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Type of setting																		

99. List the children in your family by first name beginning with the oldest child and give the following information. Indicate your own position in this ordering by writing "self" in the name column. (continue on back if more space is needed).

Name	Sex	Age	Yr. death (if applic.)	Yr. left home	Highest level education attained

What factors made these people influential to you? What did you do with them? Who are you most like in values, personality, career orientation?

Scale

- 1 = never
- 2 = very little
- 3 = some
- 4 = quite a lot
- 5 = very much

Final Interview Format

The highly structured format which was originally developed proved impossible to follow. A more informal format, consisting of five major questions, evolved and is presented here.

1. Describe the relative amount of influence that each of your parents had on your development.
2. Describe the kinds of things that you did with each parent when you were together.
3. Identify any person other than your parents who was very influential on your development; in what way did they influence you.
4. When did you decide that you would become a physician/lawyer?
What factors influenced this decision?
5. Describe what life in your family was like when you were growing up. Also, describe the nature of your parents' relationship to one another and to you.

APPENDIX C

RAW DATA

TABLE III
RAW SCORES FOR STANDARDIZED MEASURES

Subjects by Field and Category	Wechsler Subscales			
	Vocabulary	Block Design	Bex Sex-Role Inventory	Achievement Motivation
Category 1 - Medicine				
SS 1	68	35	-10	- 1
SS 2	66	29	- 3	+ 3
SS 3	74	34	-17	- 1
SS 4	69	28	+19	0
SS 5	77	38	+11	+ 2
SS 6	67	46	+ 7	- 1
SS 7	65	33	-14	- 2
SS 8	67	36	-40	0
SS 9	70	26	-22	+ 7
SS10	74	38	-16	0
Category 1 - Law				
SS 1	68	45	- 9	+11
SS 2	72	45	-18	+ 6
SS 3	71	34	- 9	+ 5
SS 4	72	36	-18	+ 4
SS 5	79	40	- 9	+ 4
SS 6	67	39	-23	- 1
SS 7	65	41	0	+ 8
SS 8	70	31	-33	+ 3
SS 9	66	33	-30	+ 3
SS10	70	39	-29	+10
Category 2 - Medicine				
SS 1	72	36	-19	+ 4
SS 2	69	34	+17	+ 4
SS 3	77	48	+11	+ 3
SS 4	70	40	5	0
SS 5	67	46	-10	- 1
SS 6	74	39	-25	+ 5
SS 7	70	36	-15	+ 2
SS 8	75	34	- 8	+ 6
SS 9	71	39	+ 2	+ 6
SS10	76	29	-13	- 1

TABLE III (Continued)

Subjects by Field and Category	Wechsler Subscales			
	Vocabulary	Block Design	Bex Sex-Role Inventory	Achievement Motivation
Category 2 - Law				
SS 1	68	47	-17	+10
SS 2	71	34	- 2	+ 6
SS 3	72	46	-30	0
SS 4	74	24	-16	+ 2
SS 5	56	30	-22	- 2
SS 6	77	46	- 9	0
SS 7	73	37	-10	- 1
SS 8	59	46	-22	+ 6
SS 9	77	47	0	+ 7
SS10	67	38	-33	+ 3
Category 3 - Medicine				
SS 1	65	40	+30	- 2
SS 2	60	28	+14	+ 5
SS 3	44	33	+ 4	- 2
SS 4	51	26	+ 7	+ 2
SS 5	49	28	+ 5	- 3
SS 6	61	20	- 6	0
SS 7	62	29	+23	3
SS 8	54	33	+ 8	- 2
SS 9	43	30	-12	+ 3
SS10	21	18	+ 1	0
Category 3 - Law				
SS 1	63	30	+ 9	- 4
SS 2	40	26	+ 2	- 1
SS 3	46	45	+ 7	- 2
SS 4	45	44	+40	- 1
SS 5	59	41	+ 4	- 6
SS 6	62	33	- 6	0
SS 7	65	39	+ 2	+ 5
SS 8	67	24	+14	+ 1
SS 9	72	24	+28	- 1
SS10	71	24	- 4	0

TABLE III (Continued)

Subjects by Field and Category	Wechsler Subscales			
	Vocabulary	Block Design	Bex Sex-Role Inventory	Achievement Motivation
Category 4 - Medicine				
SS 1	60	44	-11	0
SS 2	61	30	- 4	+ 7
SS 3	67	38	+ 7	+ 2
SS 4	67	39	+12	+ 4
SS 5	56	30	+12	- 1
SS 6	62	33	+27	+ 3
SS 7	49	24	- 1	0
SS 8	71	35	+ 6	+ 8
SS 9	51	48	+ 8	- 1
SS10	52	34	- 6	+ 3
Category 4 - Law				
SS 1	56	35	+13	+ 2
SS 2	60	30	+16	+ 4
SS 3	57	46	+14	+ 2
SS 4	66	36	-16	+ 1
SS 5	54	35	+23	+ 3
SS 6	43	37	+32	0
SS 7	63	30	+ 4	+ 4
SS 8	63	25	+16	+ 7
SS 9	52	29	-23	+ 3
SS10	66	42	-11	- 1

Questionnaire Data

01. Mother's age when you were born

Cate. 1:

Age	Medicine				Lay				Total
	M1	M2	M3	M4	I1	I2	I3	I4	
no response.	0	0	0	0	1	2	2	0	.
16	0	1	0	0	0	0	0	0	1
18	0	0	1	0	0	0	1	0	2
19	1	0	0	0	1	0	1	2	5
20	1	1	2	0	1	0	0	1	6
21	0	0	0	0	0	0	1	1	2
22	0	0	0	2	0	0	0	0	2
23	1	1	0	1	1	2	1	0	7
24	0	0	1	0	1	0	0	0	2
25	1	3	1	1	1	1	0	1	9
26	1	1	0	0	0	0	0	0	2
27	0	0	1	3	1	0	0	0	5
28	1	0	0	0	0	0	0	1	2
29	0	1	0	1	0	1	1	2	6
30	1	1	1	0	0	2	0	0	5
31	0	0	0	0	1	0	0	0	1
32	1	1	0	0	1	2	1	0	6
33	0	0	0	0	0	0	2	1	3
34	1	0	0	1	0	0	0	0	2
35	0	0	0	1	1	0	0	0	2
37	0-	0	1	0	0	0	0	1	2
38	0	0	1	0	0	0	0	0	1
40	1	0	0	0	0	0	0	0	1
42	0	0	1	0	0	0	0	0	1
Total	10	10	10	10	9	8	8	10	75

NOTES:

- (1) Items for which the raw data looked as if it would approach statistical significance were analyzed. These items have been identified with an astrisk (*). The results of these analyses are presented in Appendix D.
- (2) Items 10-56 and 69-74 were to be answered by using the following scale: Never = 1, Seldom = 2, Sometimes = 3, Quite Often = 4, Very Often = 5. A lack of any responses for a value was shown as an omission of that numerical category.

* Q1 Father's age when you were born

Category

Age	Medicine				Law				Total
	1	2	3	4	1	2	3	4	
no response .	0	0	0	0	1	2	2	0	
17	0	1	0	0	0	0	0	0	1
20	1	0	0	0	1	0	0	1	3
21	0	0	1	1	0	0	0	0	2
22	1	0	0	1	0	0	0	0	2
23	0	0	0	0	0	0	1	1	2
24	1	0	1	0	0	0	2	1	5
25	0	3	1	0	1	1	0	0	6
26	0	1	1	0	1	0	1	2	6
27	0	0	0	2	0	0	0	0	2
28	0	2	1	0	0	0	1	1	5
29	0	1	1	0	0	1	0	0	3
30	3	1	1	1	1	1	1	0	9
31	0	0	0	1	1	0	0	1	3
32	0	0	0	1	1	1	0	0	3
33	0	0	0	0	0	1	1	0	2
34	0	1	0	0	0	0	0	1	2
35	0	0	0	1	0	0	0	0	1
36	1	0	0	0	0	0	0	0	1
37	0	0	1	1	1	0	0	0	3
38	1	0	0	0	0	1	0	1	3
39	0	0	0	0	0	0	0	1	1
41	0	0	0	0	1	0	1	0	2
42	2	0	0	0	1	1	0	0	4
47	0	0	0	0	0	1	0	0	1
50	0	0	2	0	0	0	0	0	2
55	0	0	0	1	0	0	0	0	1
Total	10	10	10	10	9	8	8	10	75

Q2 Subject's age at mother's death

Category	1M	2M	3M	4M	1L	2L	3L	4L	Total
Age									
no response	8	9	4	7	8	7	8	10	.
17	0	1	0	0	0	0	0	0	1
22	0	0	1	0	0	0	0	0	1
23	1	0	0	0	0	0	0	0	1
30	0	0	1	0	1	0	0	0	2
33	0	0	1	1	0	0	1	0	3
37	0	0	0	0	0	1	0	0	1
38	0	0	0	0	0	1	0	0	1
42	0	0	0	1	0	0	0	0	1
44	0	0	1	0	0	0	0	0	1
47	0	0	0	0	0	1	1	0	2
50	0	0	0	1	0	0	0	0	1
51	0	0	1	0	0	0	0	0	1
56	1	0	0	0	0	0	0	0	1
59	0	0	0	0	1	0	0	0	1
61	0	0	1	0	0	0	0	0	1
Total	2	1	6	3	2	3	2	0	19

Q2 Subject's age at father's death

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
Age no response	6	6	4	6	4	4	8	6	.
1	0	0	0	0	1	0	0	0	1
5	0	0	0	1	0	0	0	0	1
7	0	0	0	1	0	0	0	0	1
8	0	0	0	0	0	1	0	0	1
12	0	0	0	1	0	1	0	0	2
13	0	0	1	0	0	0	0	0	1
14	0	0	0	0	0	0	0	1	1
16	2	0	0	0	0	0	0	0	2
18	0	0	0	0	0	0	0	1	1
19	0	0	1	0	0	0	0	0	1
20	0	0	0	0	1	1	0	0	2
25	0	0	0	0	1	0	0	0	1
27	0	0	1	0	0	0	0	0	1
28	0	0	0	0	0	0	0	1	1
29	0	0	0	0	0	0	0	1	1
30	0	1	0	0	1	1	0	0	3
32	0	1	0	0	1	0	0	0	2
33	0	1	0	0	0	0	0	0	1
38	1	0	0	0	0	0	0	0	1
39	1	0	0	0	0	0	0	0	1
41	0	0	0	1	0	0	0	0	1
42	0	0	1	0	0	0	0	0	1
43	0	0	1	0	1	0	0	0	2
47	0	1	0	0	0	1	0	0	2
50	0	0	1	0	0	0	1	0	2
53	0	0	0	0	0	0	1	0	1
55	0	0	0	0	0	1	0	0	1
Total	4	4	6	4	6	6	2	4	36

* Q 3

Attained level of
education of
mother

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	1	1	0	0	0	0	
grade school	0	1	4	2	4	2	2	2	17
some high school	0	2	1	3	0	0	2	0	6
high school grad	3	1	1	4	4	1	4	6	24
some college	4	5	2	0	1	3	2	2	19
B.S.	2	1	1	0	0	2	0	0	6
graduate work	0	0	0	0	0	1	0	0	7
professional	1	0	0	0	1	1	0	0	3
Total	10	10	9	9	10	10	10	10	78

*Q 3

Attained level of
education of father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	1	1	0	0	0	0	
grade school	0	1	3	2	1	1	4	2	14
high school grad	0	1	1	1	2	0	1	0	6
some college	3	3	1	4	3	4	4	5	27
B. S.	3	1	2	0	1	2	0	0	9
graduate work	1	0	2	1	1	2	1	2	10
professional	2	2	0	0	1	1	0	1	7
Total	10	10	9	9	10	10	10	10	78

Q4

Subject's age when
parents divorced

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	10	9	9	10	8	10	8	8	
5 yrs.	0	0	1	0	0	0	0	0	1
9 yrs.	0	0	0	0	0	0	1	0	1
15 yrs.	0	0	0	0	1	0	0	0	1
16 yrs.	0	0	0	0	0	0	0	1	1
18 yrs.	0	0	0	0	1	0	0	0	1
19 yrs.	0	1	0	0	0	0	0	0	1
31 yrs.	0	0	0	0	0	0	0	1	1
Total	0	1	1	0	2	0	2	2	8

Q 5
Was anyone other than
your natural parents
significantly involved
in your childrearing?

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
No	8	8	7	5	7	7	8	5	56
Yes	2	2	3	5	3	3	2	4	24
Total	10	10	10	10	10	10	10	10	80

Q 6
Describe the
relationship of
this person to you

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
N/A	8	8	7	7	7	7	8	6	
Within family	2	1	0	1	1	3	2	2	12
Outside family	0	1	3	2	2	0	0	2	10
Total	2	2	3	3	3	3	2	4	22

*Q 7
Major disciplinarian
during childhood

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
Mother	0	0	1	0	2	0	0	0	3
Father	5	7	5	5	4	8	7	9	50
Mother & father	5	3	2	4	3	2	3	1	23
Other	0	0	2	1	11	0	0	0	4
Total	10	10	10	10	10	10	10	10	80

* Q 8
Compare the amount
of your responsibility
with that of your sib-
lings from 0-12 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
No Response	1	0	2	0	2	2	1	2	9
Less 1	0	0	2	3	1	2	1	0	9
Same 2	6	3	1	5	5	1	3	8	32
More 3	3	7	5	2	2	5	5	0	29
Total	9	10	8	10	8	8	9	8	70

Q 9
Describe briefly

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
N/A	7	3	5	5	7	3	4	10	
Traditional	3	6	3	5	2	5	4	0	28
Nontraditional	0	1	2	0	1	2	2	0	8
Total	3	7	5	5	3	7	6	0	36

* Q 10
Use of physical
punishment by
father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	2	0	0	0	
1	2	3	3	4	1	2	3	2	20
2	5	3	5	3	4	5	5	6	36
3	1	3	2	3	3	3	2	1	18
4	0	0	0	0	0	0	0	1	1
Total	8	9	10	10	8	10	10	10	75

* Q 11
Extent father used with-
drawal of love as punish-
ment, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	2	0	0	0	
1	6	6	7	10	5	9	9	9	61
2	1	2	1	0	3	1	1	1	10
3	1	0	2	0	0	0	0	0	3
4	0	1	0	0	0	0	0	0	1
Total	8	9	10	10	8	10	10	10	75

* Q 12
Extent of taking away
privileges by father,
0-6 yrs.

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	2	0	0	0	
1	4	3	6	4	3	5	4	4	33
2	2	3	0	4	1	3	2	1	16
3	1	3	3	2	2	1	4	5	21
4	1	0	0	0	2	1	0	0	4
5	0	0	1	0	0	0	0	0	1
Total	8	9	10	10	8	10	10	10	75

* Q 13
Extent father used
isolation as pun-
ishment, 0-6
years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	2	0	0	2	0	0	0	
1	6	5	7	8	4	7	10	9	56
2	2	1	0	2	3	0	0	0	8
3	0	2	2	0	1	3	0	1	9
4	0	0	1	0	0	0	0	0	1
5	0	0	0	0	0	0	0	0	0
Total	8	8	10	10	8	10	10	10	74

Q 14
Extent of shaming &
scolding by father,
0-6 years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	2	0	0	0	
1	2	3	6	2	1	3	1	2	20
2	3	4	1	2	2	1	5	1	19
3	2	2	2	5	5	6	3	5	30
4	1	0	0	0	0	0	0	1	2
5	0	0	1	1	0	0	1	1	4
Total	8	9	10	10	8	10	10	10	75

Q 15
Other (specify)

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	10	8	9	9	10	8	8	7	
1	0	1	1	1	0	2	2	3	10
4	0	1	0	0	0	0	0	0	1
Total	0	2	1	1	0	2	2	3	11

* Q 16
Use of physical
punishment by
mother, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	0	1	0	0	
1	1	1	1	1	2	1	1	0	8
2	2	5	4	1	4	2	3	3	24
3	2	3	3	7	2	5	4	7	33
4	3	0	2	0	1	1	2	0	9
5	0	0	0	1	1	0	0	0	2
Total	8	9	10	10	10	9	10	10	76

* Q 17
Extent mother used with-
drawal of love as pun-
ishment, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	1	0	0	0	
1	4	6	8	7	7	8	10	8	58
2	3	0	1	2	1	1	0	2	10
3	1	2	1	1	0	1	0	0	6
4	0	1	0	0	1	0	0	0	2
5	0	0	0	0	0	0	0	0	
Total	8	9	10	10	9	10	10	10	76

Q 18
Extent of taking
away privileges by
mother, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	1	0	0	0	
1	4	2	5	2	4	3	2	2	24
2	1	4	2	4	2	4	3	1	21
3	1	3	1	2	2	2	5	6	22
4	2	0	1	2	0	1	0	1	7
5	0	0	1	0	1	0	0	0	2
Total	8	9	10	10	9	10	10	10	

*Q19
Extent mother used
isolation as punish-
ment, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	0	1	0	0	
1	6	5	8	5	5	4	10	9	52
2	1	1	1	1	2	0	0	0	7
3	0	2	1	4	3	3	0	1	14
4	1	1	0	0	1	0	0	0	3
5	0	0	0	0	0	0	0	0	0
Total	8	9	10	10	10	9	10	10	76

Q 20
Extent of shaming &
scolding by mother,
0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	1	0	0	1	0	0	0	
1	1	1	4	0	0	1	1	0	8
2	1	2	0	1	2	2	3	1	12
3	5	5	3	8	6	5	2	5	39
4	1	1	3	1	0	2	3	3	14
5	1	0	0	0	1	0	1	1	4
Total	9	9	10	10	9	9	10	10	77

*Q 22
Use of physical
demonstrativeness
by father, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	2	1	0	2	0	0	0	
1	0	2	2	1	2	2	2	0	11
2	3	1	3	1	3	3	4	1	19
3	3	3	1	2	1	1	1	2	15
4	1	2	1	2	1	1	1	4	13
5	1	0	2	4	1	3	2	3	15
Total	8	8	9	10	8	10	10	10	73

*Q 23
Use of praise by
father, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	1	0	2	0	0	0	
1	0	2	1	0	1	2	2	0	8
2	0	0	2	2	1	3	2	0	10
3	3	3	3	3	1	1	3	1	18
4	4	2	1	4	2	2	1	7	23
5	1	2	2	1	3	2	2	2	15
Total	8	9	9	10	8	10	10	10	74

*Q 24
Use of money or
allowance as reward
by father, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	2	0	0	0	
1	4	2	6	4	3	8	3	3	35
2	2	3	1	3	3	1	2	1	16
3	0	4	1	2	1	1	2	4	15
4	2	0	0	1	1	0	2	2	8
5	0	0	0	0	0	0	1	0	1
Total	8	9	10	10	8	10	10	10	75

Q 25
No special attention
for good behavior by
father, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	1	1	0	2	0	1	1	
1	3	0	2	0	1	1	0	5	12
2	0	1	0	1	1	2	2	1	8
3	2	4	2	5	2	2	0	1	18
4	1	2	2	4	2	4	4	2	21
5	3	2	3	0	2	1	3	0	14
Total	9	9	9	10	8	10	9	9	73

Q 26
Special privileges
by father, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	6	7	6	7	8	5	5	5	
1	3	1	2	1	2	3	2	3	17
2	0	0	0	0	0	2	0	0	2
3	1	2	1	0	0	0	3	1	8
4	0	0	1	2	0	0	0	1	4
5	0	0	0	0	0	0	0	0	0
Total	4	3	4	3	2	5	5	5	31

*Q 27
Use of physical
demonstrativeness
by mother, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	0	0	0	0	
1	0	1	0	0	1	2	2	0	6
22	1	1	3	0	2	1	1	0	9
3	4	2	3	6	1	3	3	0	22
4	0	4	1	1	2	2	1	7	18
5	3	1	3	3	4	2	3	3	22
Total	8	9	10	10	10	10	10	10	77

*Q 28
Use of verbal praise
by mother, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	1	0	0	0	0	0	0	
1	0	1	0	0	1	1	1	0	4
2	0	1	2	1	1	3	3	0	11
3	2	2	3	3	1	3	1	1	16
4	4	4	3	5	2	1	2	6	27
5	3	1	2	1	5	2	3	3	20
Total	9	9	10	10	10	10	10	10	78

Q 29
Use of money or
allowancy by mother,
0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	0	0	0	0	0	0	
1	5	3	5	5	5	3	3	3	38
2	2	1	2	2	4	3	3	1	17
3	0	5	2	3	1	0	2	4	17
4	1	0	0	0	0	0	1	2	4
5	0	0	0	0	0	0	1	0	1
Total	9	9	10	10	10	10	10	10	77

Q 30
No special attention
for good behavior by
mother, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	1	0	1	0	1	1	
1	3	0	1	0	1	1	0	5	11
2	0	1	2	1	0	2	2	2	10
3	2	4	4	6	4	2	0	1	23
4	0	2	1	3	2	4	4	1	17
5	3	2	1	0	2	1	3	0	12
Total	8	9	9	10	9	10	9	9	73

Q 31
Special privileges
by father, 0-6 years

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	6	7	6	8	8	5	5	5	
1	3	1	2	1	2	3	2	3	17
2	0	0	0	0	0	2	0	0	2
3	1	2	1	0	0	0	3	0	7
4	0	0	1	1	0	0	0	2	4
5	0	0	0	0	0	0	0	0	5
Total	4	3	4	2	2	5	5	5	30

Q 32
Play to win/
father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	0	3	2	1	0	0	0	
1	2	2	1	2	0	2	0	1	10
2	0	1	2	0	3	1	2	0	9
3	2	3	3	3	2	2	3	5	23
4	2	2	1	2	1	2	2	2	14
5	2	2	0	1	3	3	3	2	16
Total	8	10	7	8	9	10	10	10	

*Q 33
Encouragement by
father to "do your
best"

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	0	0	2	0	0	0	0	3
1	0	1	1	0	0	1	0	0	3
2	0	2	0	0	0	0	1	0	3
3	0	2	2	1	2	3	1	0	11
4	2	3	3	1	1	0	3	4	17
5	7	2	4	6	7	6	5	6	43
Total	9	10	10	8	10	10	10	10	77

Q 34
Be pleasant &
obedient/father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	0	1	2	0	0	0	0	
1	0	0	0	0	0	0	0	1	1
2	0	0	1	0	0	0	2	0	3
3	0	6	3	1	0	1	1	1	13
4	3	3	2	1	5	3	0	4	21
5	5	1	3	6	5	6	7	4	37
Total	8	10	9	8	10	10	10	10	75

* Q 35
Encouragement by father
to "look pretty" by
ladylike"

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	0	1	2	1	0	0	0	
1	1	1	1	0	0	0	1	2	6
2	0	2	1	1	1	2	3	0	10
3	5	4	3	2	6	3	1	3	27
4	1	1	1	3	0	2	2	4	14
5	1	2	3	2	2	3	3	1	17
Total	8	10	9	8	9	10	10	10	74

Q 36
Do things for your-
self/father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	1	2	0	0	1	0	
1	0	1	1	0	0	0	0	0	2
2	0	0	0	1	1	0	1	0	3
3	1	2	0	2	1	2	1	3	12
4	6	3	4	3	3	4	2	2	27
5	3	4	4	2	5	4	5	5	32
Total	10	10	9	8	10	10	9	10	76

Q 37
Make very good grades
in school/father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	0	1	2	0	1	0	0	
1	0	0	1	0	1	1	1	0	4
2	0	1	3	1	0	0	2	0	7
3	4	3	2	1	2	2	3	2	19
4	3	2	1	4	3	5	2	3	23
5	2	4	2	2	3	2	2	5	22
Total	9	10	9	8	9	10	10	10	75

Q 38
Make your own
decisions/father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	0	1	2	1	0	0	0	
1	0	0	1	0	1	1	1	0	4
2	0	1	3	1	0	0	2	0	7
3	4	3	2	1	2	2	3	2	19
4	3	2	1	4	3	5	2	3	23
5	2	4	2	2	3	2	2	5	22
Total	9	10	9	8	9	10	10	10	75

Q 39
Behave responsibly/
father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	1	2	0	0	0	0	
1	0	0	1	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0
3	2	1	2	2	1	0	2	0	10
4	1	5	1	1	3	3	2	5	21
5	7	4	5	5	6	7	6	5	45
Total	10	10	9	8	10	10	10	10	77

* Q 40
Encouraged by
father to "stand
up for your beliefs"

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	0	1	2	0	0	0	0	
1	0	0	3	0	0	0	1	1	5
2	1	0	1	1	1	1	0	0	5
3	1	3	0	1	3	2	3	3	16
4	4	6	1	4	1	3	2	2	23
5	2	1	4	2	5	4	4	4	26
Total	6	10	9	8	10	10	10	10	75

Q 41
Be considerate of
others/father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	0	1	2	0	0	0	0	
1	0	0	1	0	0	0	0	0	1
2	0	1	0	0	1	0	1	0	3
3	1	3	1	0	3	1	0	0	9
4	2	3	2	2	2	0	3	2	16
5	6	3	5	6	4	0	6	8	47
Total	9	10	9	8	10	10	10	10	76

* Q 50
Encouragement by
mother to "stand up
for your rights"

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	0	0	0	0	0	0	0	
1	0	0	1	0	0	0	1	1	3
2	1	0	2	1	1	1	0	0	6
3	1	4	2	1	3	2	4	2	19
4	2	3	2	5	2	2	1	4	21
5	4	3	3	3	4	5	4	3	29
Total	8	10	10	10	10	10	10	10	78

* 51 A
encouragement by mother
to "be considerate of
Others"

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	0	0	0	0	0	0	0	
2	0	0	0	0	0	1	0	0	1
3	1	1	1	1	1	1	0	0	6
4	2	7	2	2	3	0	4	2	22
5	6	2	7	7	6	8	6	8	50
Total	9	10	10	10	10	10	10	10	79

* Q 51-B
Amount of affection
& warmth shown by
father

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	0	2	0	0	0	
3	2	4	4	2	3	2	4	2	23
4	4	5	5	3	3	4	4	1	29
5	4	1	1	5	2	4	2	7	26
Total	10	10	10	10	8	10	10	10	78

* 52
Amount of affection
& warmth shown by
father, 7-12 years
of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	2	0	1	0	0	
1	0	0	1	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0
3	3	3	4	2	4	4	4	2	26
4	3	7	5	1	5	1	4	2	28
5	4	0	0	5	1	4	2	6	22
Total	10	10	10	8	10	9	10	10	77

Q 60
Amount of free time
spent alone or pri-
vately, 0-6 years
of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	1	0	0	0	1	0	1	
1	0	0	2	1	0	0	0	0	3
2	4	0	3	3	2	5	5	3	25
3	3	5	3	4	3	2	2	2	26
4	1	4	0	2	3	1	2	2	15
5	1	0	2	0	2	1	1	0	7
Total	9	9	10	10	10	9	10	9	76

Q 61
Amount of responsibility
compared to peers, 0-
12 years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	1	0	0	1	0	1	1	
Less	2	1	1	2	2	2	0	1	11
Same	5	3	5	5	4	3	2	6	33
More	3	5	4	3	3	5	7	2	32
Total	10	9	10	10	9	10	9	9	76

*Q 61_A
Nature of this
responsibility

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
N/A	5	4	6	7	7	5	3	8	
Traditional	1	1	4	2	1	3	4	1	17
Nontraditional	4	5	0	1	2	2	3	1	18
Total	5	6	4	3	3	5	7	2	35

* Q 68_5
Owned a doll &
stuffed animals

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
No	0	5	4	2	1	3	2	1	19
Yes	1	5	6	8	9	7	8	9	61
Total	10	10	10	10	10	10	10	10	80

* Q 68_6
Owned sports equipment

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total	
No	0	5	5	8	6	8	7	9	8	56
Yes	1	5	5	2	4	2	3	1	2	24
Total	10	10	10	10	10	10	10	10	80	

Q 68_7
Science equipment

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
No	8	9	10	10	10	8	9	9	74
Yes	2	1	0	0	0	2	1	1	6
Total	10	10	10	10	10	10	10	10	80

Q 69
0-6 years of age
Parents' marital happiness

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	1	0	0	3	0	0	0	
1	0	1	1	0	0	0	0	0	2
2	0	0	0	0	0	0	0	1	1
3	1	3	1	2	0	0	0	1	8
4	4	4	6	4	7	7	9	4	45
5	5	1	2	4	0	3	1	4	20
Total	10	9	10	10	7	10	10	10	76

Q 70
7-12 years of age
Parents' marital happiness

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	1	2	1	1	0	0	
1	0	1	0	0	1	0	0	0	2
2	0	0	0	2	0	0	0	3	5
3	1	5	1	1	2	2	3	1	16
4	5	4	7	1	6	5	6	3	37
5	4	0	1	4	0	2	1	3	15
Total	10	10	9	8	9	9	10	10	75

* Q 71

13-18 years of age,
parents' marital happiness

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	2	7	2	1	1	0	
very unhappy 1	0	1	0	0	1	0	1	3	6
mostly unhappy 2	0	1	1	0	1	2	2	0	7
sometimes happy 3	1	4	4	2	2	0	0	3	13
mostly happy 4	5	4	4	2	4	5	4	2	30
very happy 5	4	0	2	4	0	2	2	2	16
Total	10	10	8	8	8	9	9	10	72

Q 72

0-6 years of age,
Personal happiness

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	0	1	0	0	0	
1	0	1	0	0	0	0	0	0	1
2	0	1	0	0	1	1	0	0	3
3	2	0	2	0	1	0	0	1	6
4	3	6	4	7	2	5	6	2	35
5	5	2	4	3	5	4	4	7	34
Total	10	10	10	10	9	10	10	10	79

Q 73

7-12 years of age,
personal happiness

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	0	1	0	0	0	
1	0	1	0	0	0	0	0	0	1
2	0	1	1	0	1	1	0	0	4
3	1	1	1	0	1	3	0	2	9
4	6	6	4	7	5	4	8	4	44
5	3	1	4	3	2	2	2	4	21
Total	10	10	10	10	9	10	10	10	79

* Q 74

13-16 years of age,
personal happiness

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	0	1	0	0	0	
very unhappy 1	0	1	0	0	0	1	0	0	2
mostly unhappy 2	0	1	1	0	1	1	0	0	4
sometimes happy 3	1	2	1	0	4	3	5	2	18
mostly happy 4	9	6	5	9	1	4	3	6	43
very happy 5	0	0	3	1	3	1	2	2	12
Total	10	10	10	10	9	10	10	10	79

* Q 75
Your physical maturity
relative to your peers

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	0	1	0	0	0	
Early	1	2	3	1	2	1	4	4	16
Average	8	6	6	7	4	7	5	6	49
Late	1	2	1	2	3	2	1	0	12
Total	10	10	10	10	9	10	10	10	79

* Q 76
Beginning of dating
relative to peers

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	0	1	0	0	0	
earlier	0	0	1	1	1	0	1	1	5
same	2	5	6	5	4	5	5	5	37
later	8	5	3	4	4	5	4	4	37
Total	10	10	10	10	9	10	10	10	79

* Q 77
Social status of
family during first
grade of school for
subject

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
upper middle	3	3	2	1	2	2	1	1	15
middle	5	2	3	4	4	2	2	5	27
lower middle	2	3	1	3	2	5	5	4	25
upper lower	0	1	1	2	1	1	2	0	8
lower	0	1	3	0	1	0	0	0	5
Total	10	10	10	10	10	10	10	10	60

* Q 78
Family social status
at 8th grade of Ss

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	3	0	0	0	0	0	
upper middle	2	3	1	1	2	2	2	2	15
middle	7	3	2	4	4	2	3	6	31
lower middle	1	2	2	4	3	5	4	2	23
upper lower	0	1	1	1	0	1	1	0	5
lower	0	1	1	0	1	0	0	0	3
Total	10	10	7	10	10	10	10	10	77

Q 79
Did mother work,
0-6 years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	1	1	1	1	0	0	
Yes	0	2	0	1	3	0	0	4	10
No	10	8	9	8	6	9	10	6	66
Total	10	10	9	9	9	9	10	10	76

* Q 80
Did mother work,
7-12 years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	1	1	1	1	0	0	
Yes	0	2	2	3	4	3	4	4	22
No	10	8	8	7	6	7	6	6	54
Total	10	10	9	9	9	9	10	10	80

* Q 81
Did mother work,
13-18 years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	1	1	1	1	0	0	
Yes	3	7	2	6	3	3	6	6	36
No	7	3	8	4	7	7	4	4	40
Total	10	10	9	9	9	9	10	10	76

Q 82
No. years mother
worked, 0-6 years
of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	10	8	10	9	7	10	10	6	
1	0	0	0	0	1	0	0	1	2
2	0	1	0	0	0	0	0	0	1
5	0	0	0	0	0	0	0	1	1
6	0	1	0	1	2	0	0	2	6
Total	0	2	0	1	3	0	0	4	10

Q 83
No. years mother
worked, 7-12 years
of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	10	8	10	8	6	7	8	6	
1	0	0	0	1	0	0	0	0	1
2	0	0	0	0	2	1	0	0	3
3	0	0	0	0	1	0	2	0	3
4	0	0	0	0	0	1	0	0	1
5	0	0	0	0	0	0	0	1	1
6	0	2	0	1	1	1	0	3	8
Total	0	2	0	2	4	3	2	4	17

Q 84
No. years mother
worked, 13-18
years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	8	3	9	4	7	7	7	4	
0	0	0	0	1	0	0	0	0	1
1	0	0	1	0	0	0	0	0	1
2	1	4	0	2	0	2	0	0	9
3	0	0	0	2	0	0	0	0	2
4	1	0	0	0	1	0	1	1	4
5	0	1	0	0	0	1	2	2	6
6	0	2	0	1	2	0	0	3	8
Total	2	7	1	6	3	3	3	6	31

Q 85
Type of employment
of mother, 0-6
years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	10	8	9	9	6	10	10	6	
Laborer	0	1	1	1	1	0	0	4	8
Skilled labor	0	1	0	0	0	0	0	0	1
Self-employed (farm, crafts)	0	0	0	0	1	0	0	0	1
Managers	0	0	0	0	1	0	0	0	1
Professional	0	0	0	0	1	0	0	0	1
Total	0	2	1	1	4	0	0	4	12

Q 86
Type of employment of
mother, 7-12 years
of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	10	8	8	8	5	7	8	6	
laborer	0	1	0	0	0	0	0	0	1
Skilled labor	0	1	2	2	2	2	1	4	14
Self-employed	0	0	0	0	1	0	1	0	2
Manager	0	0	0	0	1	1	0	0	2
Professional	0	0	0	0	1	0	0	0	1
Total	0	2	2	2	5	3	2	4	20

Q 87
Type of employment
of mother, 13-18
years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	7	3	8	4	6	7	7	4	
Laborer	1	2	1	1	1	0	0	0	7
Skilled labor	1	4	1	4	1	2	1	6	20
Self-employed	0	1	0	0	1	0	2	0	4
Management	1	0	0	0	0	1	0	0	2
Professional	0	0	0	0	1	0	0	0	1
Total	3	7	2	6	4	3	3	6	34

Q 88
Was father gainfully
employed, 0-6 years
of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	0	1	0	0	0	
Yes	9	9	9	9	9	9	10	10	74
No	1	1	1	1	0	1	0	0	5
Total	10	10	10	10	9	10	10	10	79

Q 89
Was father gainfully
employed, 7-12
years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	1	1	3	0	0	1	0	
Yes	8	9	7	6	10	9	9	10	68
NO	1	0	2	1	0	1	0	0	5
Total	9	9	9	7	10	10	9	10	73

Q 90
Was father gainfully
employed, 13-18
years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	1	2	3	0	2	2	0	
Yes	8	9	6	6	10	7	8	10	64
No	1	0	2	1	0	1	0	0	5
Total	9	9	8	7	10	8	8	10	69

Q 91
No. years father worked,
0-6 years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	6	3	1	3	2	0	
1	0	1	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	1	1
4	0	0	0	0	0	2	0	0	2
5	0	0	1	0	0	0	0	0	1
6	8	8	3	7	9	5	8	9	57
Total	8	9	4	7	9	7	8	9	62

Q 92
No. years father
worked, 7-12 years
of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	2	1	7	3	0	3	2	0	
1	0	0	0	1	0	1	0	0	2
2	0	0	0	0	1	0	0	0	1
3	0	1	0	0	0	0	0	0	1
5	1	0	0	0	1	1	2	2	7
6	7	8	3	6	8	5	6	8	51
Total	8	9	3	7	10	7	8	10	62

Q 93
No. years father
worked, 13-18 years
of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	3	0	7	4	0	4	2	0	
1	0	1	0	0	0	0	0	0	1
3	0	0	0	1	0	0	0	0	1
4	0	0	0	0	0	2	0	0	2
5	1	1	0	0	2	1	2	3	10
6	6	8	3	5	8	3	6	7	46
Total	7	10	3	6	10	6	8	10	60

*Q 94
Type of employment
of father, 0-6
years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	1	1	3	1	0	2	0	
Laborer	0	0	1	1	1	0	2	0	5
Skilled labor	2	2	3	1	2	3	2	8	23
Self-employed	4	2	3	3	3	2	3	2	22
Manager	2	2	1	2	3	3	1	0	14
Professional	2	3	1	0	0	2	0	0	8
Total	10	9	9	7	9	10	8	10	72

*Q 95
Type of employment
of father, 7-12
years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	1	3	4	1	0	2	0	
Laborer	0	0	1	0	1	0	2	0	5
Skilled labor	1	1	1	1	2	3	2	8	19
Self-employed	4	2	4	3	2	3	3	2	23
Management	3	3	1	2	3	2	1	0	15
Professional	2	3	0	0	1	2	0	0	8
Total	10	9	7	6	9	10	8	10	69

*Q 96
Type of employment
of father, 13-18
years of age

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	1	4	4	1	1	2	0	
Laborer	0	0	1	0	1	0	1	0	3
Skilled labor	1	1	0	1	2	2	2	5	14
Self-employed	4	2	4	3	2	2	4	3	24
Management	3	3	1	2	3	3	1	2	18
Professional	2	3	0	0	1	2	0	0	8
Total	10	9	6	6	9	9	8	10	67

*Q 97
Discuss advantages/
disadvantages to being
a girl

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	2	1	2	1	0	4	1	
Advantages	2	0	3	3	1	1	0	1	11
Disadvantages	3	5	3	3	4	4	2	1	25
Neither	5	1	2	2	2	3	2	5	22
Advantages & disadvantages	0	2	1	0	2	2	2	2	11
Total	10	8	9	8	9	10	6	9	69

Q 98 A

Did your family move during each of the following years of your life?

		Medicine				Law				Total	
		1	2	3	4	1	2	3	4		
1 year	No	0	8	7	7	9	10	8	9	8	66
	Yes	1	2	3	3	1	0	2	1	2	14
2 years	No	0	8	7	7	9	10	8	9	8	66
	Yes	1	2	3	3	1	0	2	1	2	14
3 years	No	0	9	7	9	8	10	8	10	8	69
	Yes	1	1	3	1	2	0	2	0	2	11
4 years	No	0	9	10	7	10	9	8	9	8	70
	Yes	1	1	0	3	0	1	2	1	2	10
5 years	No	0	10	6	8	8	10	8	10	9	69
	Yes	1	0	4	2	2	0	2	0	1	11
6 years	No	0	10	7	5	8	8	8	9	9	64
	Yes	1	0	3	5	2	2	2	1	1	16
7 years	No	0	10	8	10	7	10	7	10	10	72
	Yes	1	0	2	0	3	0	3	0	0	8
8 years	No	0	10	9	8	10	8	6	9	9	69
	Yes	1	0	1	2	0	2	4	1	1	11
9 years	No	0	9	8	9	10	9	9	9	8	71
	Yes	1	1	2	1	0	1	1	1	2	9
10 years	No	0	10	6	8	8	9	8	10	9	68
	Yes	1	0	4	2	2	1	2	0	1	12
11 years	No	0	9	9	10	9	10	9	9	10	75
	Yes	1	1	1	0	1	0	1	1	0	5

12 years	No	0	9	7	7	8	10	9	7	8	65
	Yes	1	1	3	3	2	0	1	3	2	15
13 years	No	0	8	9	6	7	9	10	8	10	67
	Yes	1	2	1	4	3	1	0	2	0	13
14 years	No	0	10	9	10	8	9	8	10	10	74
	Yes	1	0	1	0	2	1	2	0	0	6
15 years	No	0	10	10	9	9	9	10	10	8	75
	Yes	1	0	0	1	1	1	0	0	2	5
16 years	No	0	10	9	9	9	8	9	9	7	70
	Yes	1	0	1	1	1	2	1	1	3	10
17 years	No	0	10	10	9	8	10	10	8	10	75
	Yes	1	0	0	1	2	0	0	2	0	5
18 years	No	0	10	10	9	9	10	10	9	10	77
	Yes	1	0	0	1	1	0	0	1	0	3

Q 98 B
Identify the type setting in which you lived during each year of your life using these symbols: M=metropolitan; R=rural; S=small town.

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
Age & Setting									
1 year no response	0	3	3	3	0	3	4	3	.
M	4	2	0	2	4	2	2	2	18
R	3	3	4	4	2	2	3	3	24
S	3	2	3	1	4	3	1	2	19
2 years no response	0	2	3	2	1	2	4	3	.
M	5	3	1	3	4	1	2	2	21
R	3	3	3	4	1	2	3	2	21
S	2	2	3	1	4	5	1	3	21
3 years no response	0	2	3	3	1	2	3	4	.
M	4	2	1	2	5	1	2	1	18
R	3	3	4	4	1	2	3	3	23
S	3	3	2	1	3	5	2	2	21
4 years no response	0	5	3	3	0	2	2	3	.
M	4	1	1	2	5	1	3	1	18
R	3	3	5	4	2	2	4	1	24
S	3	1	1	1	3	5	1	5	20

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
Age & Setting									
5 years no response	0	4	3	2	1	2	3	4	.
M	4	2	1	2	5	1	3	1	19
R	3	2	5	4	1	3	3	2	23
S	3	2	1	2	3	4	1	3	19
6 years no response	0	3	2	3	0	2	2	4	.
M	4	2	2	2	5	1	3	1	20
R	3	2	4	4	2	3	4	1	23
S	3	3	2	1	3	4	1	4	21
7 years no response	0	4	3	2	1	2	3	5	.
M	4	1	2	2	5	2	3	1	20
R	3	1	3	4	1	2	3	1	18
S	3	4	2	2	3	4	1	3	22
8 years no response	0	4	2	3	0	1	3	4	.
M	4	1	2	2	5	1	3	1	19
R	3	1	4	4	1	1	3	1	18
S	3	4	2	1	4	7	1	4	26
9 years no response	0	4	3	3	0	3	2	3	.
M	4	0	2	2	5	2	3	1	19
R	3	2	4	4	1	1	4	1	20
S	3	4	1	1	4	4	1	5	23
10 years no response	0	2	2	2	2	3	3	4	.
M	4	2	2	2	4	1	3	1	19
R	3	2	4	4	1	1	3	1	19
S	3	4	2	2	3	5	1	4	24
11 years no response	0	4	3	4	2	3	3	5	.
M	4	1	2	1	4	2	3	1	18
R	4	2	3	3	1	1	3	1	18
S	2	3	2	2	3	4	1	3	20
12 years no response	0	3	2	3	1	4	0	4	.
M	4	1	2	1	5	2	3	2	20
R	4	2	3	4	1	1	6	1	22
S	2	4	3	2	3	3	1	3	21
13 years no response	0	4	2	2	1	4	2	5	.
M	5	1	3	1	6	2	3	1	22
R	3	2	4	5	1	1	2	1	19
S	2	3	1	2	2	3	3	3	19

Q 99_2
No. of children
in Ss family

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
1	1	0	1	0	1	2	0	2	7
2	3	4	3	3	3	1	3	1	21
3	0	2	0	1	1	1	1	4	10
4	5	4	1	3	1	4	3	1	22
5	0	0	1	0	1	0	1	1	4
6	0	0	1	1	1	1	0	1	5
7	0	0	0	0	0	0	1	0	1
8	1	0	0	1	0	1	1	0	4
9 or more	0	0	3	1	1	0	0	0	5
Total	10	10	10	10	10	10	10	10	80

*Q 99_3
Attained educational
level of subject

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	0	0	0	0	0	0	1	0	
grade school	0	0	1	0	0	0	0	0	1
some high school	0	0	0	0	0	0	0	0	0
high school grad	0	0	2	2	0	0	3	2	9
some college	0	0	5	5	0	0	6	6	22
B. S.	0	0	2	2	0	0	0	2	6
graduate work	0	0	0	1	0	0	0	0	1
professional	10	10	0	0	10	10	0	0	40
Total	10	10	10	10	10	10	10	10	80

*Q 99_4
Ss level of education
compared to siblings

Category	M1	M2	M3	M4	L1	L2	L3	L4	Total
no response	1	0	0	0	0	0	1	0	
More	6	6	2	2	6	5	2	2	31
Same	2	4	2	2	3	3	3	3	22
Less	0	0	5	6	0	0	4	3	18
N/A	1	0	1	0	1	2	0	2	7
Total	9	10	10	10	10	10	9	10	78

Interview Data for High Success Subjects

1. Parent exerting most influence on subject's development:
 - A. Medicine
 1. Mother - 2
 2. Father - 2
 3. Mother and father equally - 6
 - B. Law
 1. Mother - 5
 2. Father - 2
 3. Mother and father equally - 3
2. Types of things done with each parent:
 - A. Medicine
 1. Mother - All subjects described their relationship with mother as traditional in regard to activities which consisted primarily of "girl things."
 2. Father - Eight of the ten described their father as very actively involved in their childrearing. Seven of the ten reported that they experienced a great deal of one-to-one interaction with their father that was instrumental, rather than affective, in nature, and which focused on doing things with support for achievement efforts.
 - B. Law
 1. Mother - Three of the mothers' of lawyers, as working women, provided nontraditional role models for their daughters, and highly encouraged their daughter's

achievement efforts. Relationships with mother were otherwise described as typical mother-daughter relationships.

2. Father - Five subjects from intact homes reported a close, interactive relationship with a father who encouraged the development of competence of and achievement and, to some extent, nontraditionally feminine behavior.
3. Individuals other than parents who were highly influential.
 - A. Medicine - For medicine, no subject suggested that the influence of any other individual approximated that of her parents'.
 - B. Law - Three subjects in the field of law cited individuals other than parents as primary motivators in their development. These were subjects whose families had experienced greater stress than those of other subjects. The individuals cited were two grandfathers and an older brother.
4. When did you decide to become a physician/lawyer?
 - A. Medicine - Seven of 10 decided to become a physician during the public school years. Three decided while in college and majoring in science.
 - B. Law - Three of the 10 decided to become a lawyer during the public school years. Three made this decision in college, and four had completed a bachelor's degree when they decided to go to law school.

5. Describe what your family life was like when you were growing up; the nature of your parents' relationship to one another and to you.

A. Medicine - All 10 physicians reported that they grew up in very stable, emotionally close home environments. Most reported that their parents' marital relationship was happier than the average, that their relationship with both parents was quite positive, and that they had experienced very happy childhoods.

B. Law - Subjects in this field were from less consistently stable home environments. The family life of five of the lawyers paralleled that of all ten physicians. Five of the lawyers, however, reported that, during their childhoods, their family had experienced trauma through death, divorce, poverty or disease.

APPENDIX D

STATISTICAL ANALYSIS

TABLE IV
 SUMMARY TABLES OF ANALYSES OF VARIANCE
 FOR STANDARDIZED MEASURES

Source	df	ms	F	p
<u>By Category by Field</u>				
10	7	.161	.26	.96
11	7	.431	1.25	.29
13	7	.699	1.20	.32
16	7	.425	.48	.85
17	7	.547	.98	.45
19	7	1.449	1.81	.10
22	7	2.030	1.08	.38
23	7	1.747	1.12	.36
27	7	1.399	.90	.51
28	7	1.725	1.31	.26
33	7	2.330	2.21	.04
35	7	.466	.30	.95
40	7	.556	.37	.92
43	7	1.837	1.80	.10
45	7	1.559	1.06	.40
50	7	.539	.40	.90
51a	7	.392	.80	.59
51b	7	.915	1.51	.18
53	7	.738	1.25	.29
54	7	.564	1.21	.31

TABLE IV (Continued)

Source	df	ms	F	p
56	7	.384	.43	.88
71	7	2.470	1.93	.08
74	7	.977	1.33	.25
<u>By Field</u>				
10	1	.480	.84	.36
11	1	.701	2.01	.16
13	1	.193	.34	.56
16	1	.001	.00	.97
17	1	1.517	2.80	.10
19	1	.350	.40	.53
22	1	.059	.03	.86
23	1	.0009	.00	.98
27	1	.025	.02	.90
28	1	.019	.01	.91
33	1	.904	.77	.38
35	1	.005	.00	.95
40	1	.857	.61	.44
43	1	1.086	.99	.32
45	1	.148	.10	.75
50	1	.021	.02	.90
51a	1	.378	.78	.40
51b	1	.330	.52	.47
53	1	.191	.31	.58

TABLE IV (Continued)

Source	df	ms	F	p
54	1	.050	.10	.75
56	1	.013	.01	.90
71	1	5.013	3.72	.06
74	1	.495	.65	.42
<u>By Typicalness of Occupation</u>				
10	1	.21	.37	.54
11	1	.53	1.50	.23
13	1	1.19	2.12	.15
16	1	.54	.64	.42
17	1	1.74	3.22	.08
19	1	4.43	5.45	.02
22	1	3.46	1.86	.18
23	1	.03	.02	.89
27	1	1.15	.74	.39
28	1	.10	.07	.79
33	1	.68	.57	.45
35	1	.22	.15	.70
40	1	1.13	2.39	.13
43	1	1.46	1.34	.25
45	1	.28	.19	.67
50	1	1.47	1.17	.28
51a	1	1.13	2.39	.13
51b	1	.11	.17	.68

TABLE IV (Continued)

Source	df	ms	F	p
53	1	.47	.74	.39
54	1	.45	.95	.33
56	1	1.01	1.20	.27
71	1	.0005	.00	.98
74	1	3.34	4.63	.035
<u>By Typicalness of Occupation</u>				
<u>and Career Field</u>				
10	3	.253	.44	.73
11	3	.430	1.23	.31
13	3	.889	1.60	.20
16	3	.197	.23	.88
17	3	1.128	2.12	.11
19	3	2.483	3.13	.03
22	3	1.171	.61	.61
23	3	.372	.23	.88
27	3	.561	.35	.79
28	3	.400	.29	.84
33	3	.529	.44	.73
35	3	.828	.55	.65
40	3	.688	.48	.70
43	3	1.030	.94	.43
45	3	2.786	1.95	.13
50	3	.499	.39	.77

TABLE IV (Continued)

Source	df	ms	F	p
51a	3	.522	1.08	.36
51b	3	.147	.22	.88
53	3	.265	.43	.74
54	3	.316	.66	.58
56	3	.445	.52	.68
71	3	2.262	1.66	.18
74	3	1.299	1.77	.16
<u>By Category</u>				
10	3	.105	.18	.91
11	3	.394	1.12	.35
13	3	.557	.97	.41
16	3	.404	.47	.71
17	3	.654	1.19	.32
19	3	2.045	2.52	.06
22	3	4.186	2.34	.08
23	3	3.005	1.98	.12
27	3	2.511	1.67	.18
28	3	3.112	2.42	.07
33	3	4.349	4.17	.009
35	3	.130	.09	.96
40	3	.672	.47	.71
43	3	2.078	1.97	.12
45	3	.594	.39	.76

TABLE IV (Continued)

Source	df	ms	F	p
50	3	.899	.70	.56
51a	3	.578	1.21	.31
51b	3	1.480	2.46	.07
53	3	1.221	2.12	.10
54	3	.583	1.24	.30
56	3	.545	.63	.60
71	3	.416	.29	.83
74	3	2.026	2.88	.04

TABLE V
 CHI-SQUARE RESULTS FOR ANALYZED
 QUESTIONNAIRE ITEMS

Source	df	χ^2	p	Source	df	χ^2	p
<u>Analysis by Field</u>							
1F	1	.00	1.00	65-5	1	.70	.79
3M	2	1.80	.41	66-1	1	3.23	.07
3F	2	1.88	.39	66-2	1	2.45	.12
7	2	2.09	.35	66-5	1	.80	.37
8	1	.66	.42	66-6	1	.00	1.00
57-1	1	4.11	.04	67-1	1	1.40	.24
57-6	1	1.53	.22	67-5	1	.45	.50
58-3	1	2.49	.11	67-6	1	.67	.41
58-6	1	2.88	.09	68-2	1	.46	.50
59-4	1	2.22	.14	68-3	1	.91	.34
61A	1	.25	.62	68-5	1	1.73	.19
62-2	1	.21	.64	68-6	1	3.81	.05
62-6	1	.88	.35	75	2	1.39	.50
62-7	1	.46	.50	76	2	.46	.80
63-1	1	.23	.63	77	1	.80	.37
63-2	1	.21	.65	78	4	1.61	.81
63-3	1	1.15	.28	80	1	4.09	.04
63-5	1	1.84	.17	81	1	.00	1.00
63-7	1	.58	.45	94	1	1.00	.32
64-7	1	2.45	.18	95	1	1.53	.22
65-3	1	.00	1.00	96	1	.23	.63

TABLE V (Continued)

Source	df	χ^2	p	Source	df	χ^2	p
97	2	4.10	.13	99-3	2	.46	.79
99-1	1	.46	.50	99-4	2	.98	.61
<u>Analysis by Typicalness of Occupation</u>							
1F	1	.80	.37	65-3	1	.82	.37
3M	2	11.18	.004	65-5	1	3.38	.07
3F	2	7.09	.03	66-1	1	3.23	.07
7	2	.75	.69	66-2	1	1.25	.26
8	1	1.47	.23	66-5	1	3.20	.07
57-1	1	1.27	.26	66-6	1	3.81	.05
57-6	1	.55	.46	67-1	1	4.53	.03
58-3	1	.46	.50	67-5	1	2.46	.12
58-6	1	.72	.40	67-6	1	.67	.41
59-4	1	5.00	.03	68-2	1	1.27	.26
61A	1	4.80	.03	68-3	1	.91	.34
62-2	1	10.45	.001	68-5	1	5.59	.02
62-6	1	1.98	.16	68-6	1	2.14	.14
62-7	1	4.11	.04	75	1	1.69	.19
63-1	1	.91	.34	76	2	3.79	.15
63-2	1	1.88	.17	77	1	.80	.37
63-3	1	.29	.59	78	1	.26	.61
63-5	1	.21	.65	80	1	1.02	.31
63-7	1	1.61	.20	81	1	.84	.36
64-7	1	.45	.50	94	2	9.25	.009

TABLE V (Continued)

Source	df	χ^2	p	Source	df	χ^2	p
95	2	13.86	.001	99-1	1	4.11	.04
96	2	11.39	.003	99-3	2	56.17	.0001
97	2	2.46	.29	99-4	3	25.58	.0001
<u>Analysis by Typicalness of Occupation</u>							
<u>and Career Field</u>							
1F	3	2.61	.46	63-7	3	5.36	.15
3M	6	16.14	.01	64-7	3	2.95	.40
3F	6	10.98	.09	65-3	3	3.48	.32
7	6	4.90	.56	65-5	3	3.52	.32
8	3	9.96	.02	66-1	3	8.49	.04
57-1	3	1.37	.71	66-2	3	3.75	.29
57-6	3	3.60	.31	66-5	3	5.82	.12
58-3	3	3.40	.33	66-6	3	3.81	.28
58-6	3	3.60	.31	67-1	3	5.98	.11
59-4	3	7.78	.05	67-5	3	2.97	.40
61A	3	6.90	.08	67-6	3	5.00	.17
62-2	3	10.88	.01	68-2	3	6.25	.10
62-6	3	2.20	.53	68-3	3	2.96	.40
62-7	3	7.06	.07	68-5	3	7.94	.05
63-1	3	2.05	.56	68-6	3	6.19	.10
63-2	3	2.92	.40	75	3	2.66	.45
63-3	3	.86	.84	76	6	5.29	.51
63-5	3	3.89	.27	77	3	2.61	.46

TABLE V (Continued)

Source	df	χ^2	p	Source	df	χ^2	p
78	3	4.09	.25	96	6	14.09	.03
80	3	4.99	.17	97	6	2.83	.83
81	3	3.59	.31	99-1	3	6.65	.08
94	6	11.41	.08	99-3	6	58.19	.0001
95	6	16.54	.01	99-4	6	25.45	.0003
<u>Analysis by Category Irrespective of Field</u>							
1F	3	4.21	.24	63-5	3	.61	.89
3M	6	17.46	.008	63-7	3	3.29	.35
3F	6	10.09	.12	64-7	3	6.95	.07
7	6	6.36	.38	65-3	3	5.93	.11
8	3	14.68	.002	65-5	3	6.83	.08
57-1	3	2.99	.39	66-1	3	7.27	.06
57-6	3	3.60	.31	66-2	3	3.75	.29
58-3	3	1.79	.62	66-5	3	6.83	.08
58-6	3	7.93	.05	66-6	3	4.76	.19
59-4	3	5.56	.14	67-1	3	7.32	.06
61A	3	5.27	.15	67-5	3	2.97	.40
62-2	3	11.31	.01	67-6	3	9.79	.02
62-6	3	2.20	.53	68-2	3	6.65	.08
62-7	3	5.03	.17	68-3	3	4.79	.18
63-1	3	3.88	.28	68-5	3	6.28	.10
63-2	3	2.08	.55	68-6	3	3.33	.34
63-3	3	5.45	.14	75	3	1.70	.64

TABLE V (Continued)

Source	df	χ^2	p	Source	df	χ^2	p
76	6	5.39	.50	95	6	16.26	.01
77	3	4.21	.24	96	6	14.73	.02
78	3	4.09	.25	97	6	3.86	.70
80	3	1.28	.73	99-1	3	5.44	.14
81	3	4.22	.24	99-3	6	58.19	.0001
94	6	13.21	.04	99-4	6	25.86	.0002

TABLE VI

SIGNIFICANT F VALUES FROM ANALYSIS OF VARIANCE
FOR SELECTED QUESTIONNAIRE ITEMS

STATISTICAL ANALYSIS SYSTEM								12:11	FRIDAY, NOVEMBER 9, 1979	2
ANALYSIS OF VARIANCE PROCEDURE										
DEPENDENT VARIABLE: VERBAL										
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.			
MODEL	7	4637.68750000	576.81250000	9.61	0.0001	0.483070	12.1587			
ERROR	72	4720.70000000	60.00972222			STD DEV	VERBAL MEAN			
CORRECTED TOTAL	79	8358.38750000			7.74659423	63.71250000				
SOURCE	DF	ANOVA SS	F VALUE	PR > F						
CLASS	3	3591.93750000	19.95	0.0001						
FIELD	1	30.01250000	0.50	0.4817						
CLASS*FIELD	3	415.73750000	2.31	0.0823						

TABLE VI (Continued)

STATISTICAL ANALYSIS SYSTEM 12:11 FRIDAY, NOVEMBER 9, 1979 3							
ANALYSIS OF VARIANCE PROCEDURE							
DEPENDENT VARIABLE: SPATIAL							
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	7	277.80000000	125.40000000	2.76	0.0130	0.212707	19.0838
ERROR	72	3249.00000000	45.12500000				
CORRECTED TOTAL	79	4126.80000000			6.71751442		35.20000000
SOURCE	DF	ANCOVA SS	F VALUE	PR > F			
CLASS	3	680.70000000	5.03	0.0033			
FIELD	1	96.80000000	2.15	0.1474			
CLASS*FIELD	3	100.30000000	0.74	0.5343			

TABLE VI (Continued)

STATISTICAL ANALYSIS SYSTEM							
11:53 WEDNESDAY, JUNE 20, 1979 7							
ANALYSIS OF VARIANCE PROCEDURE							
DEPENDENT VARIABLE: ACHN							
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	7	201.20000000	28.74285714	2.34	0.0324	0.185643	64.2420
ERROR	72	882.60000000	12.25633333				
CORRECTED TOTAL	79	1083.80000000			3.50119027		5.45000000
					STD DEV		ACHN MEAN
SOURCE	DF	ANCOVA SS	F VALUE	PR > F			
FIELD	1	57.80000000	4.72	0.0332			
CLASS	3	44.30000000	2.29	0.0840			
FIELD*CLASS	3	59.10000000	1.61	0.1538			

TABLE VI (Continued)

STATISTICAL ANALYSIS SYSTEM 11:53 WEDNESDAY, JUNE 20, 1979 7
 ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ACHN

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	7	201.2000000	28.74285714	2.34	0.0324	0.185643	64.2420
ERROR	72	882.6000000	12.25833333				
CORRECTED TOTAL	79	1083.8000000			3.50119027		5.45000000

SOURCE	DF	ANCOVA SS	F VALUE	PR > F
FIELD	1	57.80000000	4.72	0.0332
CLASS	3	64.30000000	2.29	0.0840
FIELD*CLASS	3	59.10000000	1.61	0.1938

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