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Personality and Background Characteristics of Women in Asextypical Occupations

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PERSONALITY AND BACKGROUND CHARACTERISTICS
OF WOMEN IN ASEXTYPICAL OCCUPATIONS

BY
JEANNE PARR LEMKAU

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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IN
PSYCHOLOGY

UNIVERSITY OF RHODE ISLAND

1978

OCCUPATIONALLY ASEXYPICAL WOMEN

ABSTRACT

PERSONALITY AND BACKGROUND CHARACTERISTICS OF WOMEN IN ASEXYTYPICAL OCCUPATIONS

Jeanne Parr Lemkau

To date, no study of occupationally asextypical women has compared a group of women in predominantly male fields to women of equal education in predominantly female fields. The correlates of academic attainment and atypicality of career choice are therefore confounded in the literature. The purpose of the present study was twofold. The first was to determine whether there would be correlates of asextypicality above and beyond those related to academic achievement and to determine the nature of these, in a design comparing asextypical professional women to their equally educated sextypical counterparts. A secondary purpose was to see if Bem's finding of an association between low sex-typing on the Bem Sex Role Inventory and willingness to engage in cross-sex laboratory behavior would generalize to asextypical occupational behavior, and to experiment with the use of situation-specific instructions on the BSRI in the process.

Participants were recruited from a variety of agencies, industries, and other sources in the Rhode Island and eastern Massachusetts area. For inclusion, women were required to be American-born, under 50, employed at least 20 hours weekly in either sextypical or asextypical employment, and to have earned the masters degree in 1974 or earlier. The

166 recruits were each sent a data package which they were to return by mail and which included, (1) the Bem Sex Role Inventory (three instructional sets, "on the job" and "in a social situation" self-descriptions and "your ideal woman"), (2) biographical questionnaire, and (3) the Cattell 16PF, Form A. Eighty-two percent, or 135 women returned the data package.

Both groups were found to be characterized by factors consonant with their high level of education, for example, high parental education, high family stability, adequate SES, white race, and family values consistent with upward mobility and academic success. Relative to women in general, both groups tended to score high on such competency-related traits on the Cattell as intelligence, forthrightness, self-sufficiency, and assertiveness. On the BSRI both groups tended to be highly androgynous, showing almost equal and high endorsement of positive items of both masculine and feminine stereotypes.

In comparison with the sextypical women, the aseptypical women were younger, more likely to be firstborn, to have had working mothers, and to mention males as important influences on their career development. Trends suggesting higher achievement motivation in aseptypical women and greater conventionality among the sextypical women were also noted. On the Cattell, the aseptypical women showed more extreme scores on competency-related traits, though in general, the significant group differences were more related to the role expectations and behaviors appropriate to the respective work involvements of the two groups. On the BSRI, the aseptypical women tended to be androgynous but slightly more sex-reversed than their sextypical counterparts, with significant group differences resulting from slightly lower endorsement of feminine items.

Group differences are discussed in terms of the "enrichment hypothesis" of Almqvist and Angrist. The data suggest that the asextypical women may have more frequently experienced family situations which encouraged the development of broad sex-roles, higher achievement motivation, greater valuing of "male" as well as "female" activities, and greater comfort and self-confidence in engaging in traditionally male achievement areas. In addition, the asextypical women have more frequently been exposed to a cultural environment enriched by feminist ideology.

In terms of the BSRI, the results of the present study support Bem's association between low sex-typing and cross-sex behavior. High academic attainment can be seen as asextypical for women, and both groups tended to be androgynous in their self-descriptions on the BSRI. The women doubly engaged in cross-sex behavior, by virtue of their asextypical career choice, were even less sex-typed. The use of the BSRI with situation-specific instructions was supported, with significant effects of Instructions found for Masculinity, Femininity, and Androgyny scores, raising questions about the more standard use of the BSRI with global self-description instructions.

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In keeping with the spirit of this dissertation, I would like to thank those who have been significant models and sources of support for me during the evolution of this research. First and foremost, I would like to thank my major professor Dr. Bernice Lott. Since our early discussions of competence in women in 1973, Dr. Lott has been a most constant support and incisive critic. The combination of nurturance and competence which she has exemplified will continue to be a model for me as I work with students in years to come.

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To Dr. Annie May Karrer (1893-)

Who nurtured a little girl's curiosity

By teaching her the names of the trees. . .

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CHAPTER I

INTRODUCTION

Few are the women in contemporary American society who pursue serious work in occupations which traditionally have been seen as appropriate for men only; law, carpentry, medicine, or college teaching, for example. And few are the women who pursue the highest academic and professional credentials in even such traditionally female-appropriate occupations as teaching or nursing. A "feminine" woman does not participate, let alone excel, in "man's work". Nor is she expected to function at the highest level of competence in any occupational field, since the dependence, emotionality, and non-assertiveness that comprise the feminine stereotype and ideal (Broverman, Vogel, Broverman, Clarkson, and Rosenkrantz, 1972) work against competent functioning in all but protected environments. Women who are occupationally competent in terms of either high level performance in sextypical work or participation in "male" occupations requiring competency traits are faced with the dilemma succinctly expressed to a woman medical student in the 1920's, "You are not a man, you are not a woman. You are an unsexed thing studying medicine out of morbid curiosity" (Lopate, 1968, p. 26). Though rarely so blatantly stated today, the contradictory pressures on women to be competent, yes, but "feminine" first remain.

The present study focuses on one group of competent and highly achieving women, those who hold the masters degree and pursue asextypical occupations. For the purpose of this investigation, a field is defined as asextypical for women if at least 75% of the participants are male. Occupationally asextypical women are of interest to both the pragmatic

social scientist and to the personality theorist, for they represent both the possibility of moving beyond the barriers of occupational segregation in the United States and of integrating a high level of independence, rationality, and competence with being female.

Occupational Segregation

For the practically oriented social scientist, an examination of occupationally atypical women may shed light on one dimension of the occupational segregation that plagues the United States labor force. Over seventy percent of the working women in the United States are in one of four occupational spheres considered appropriate for women: nursing, teaching, secretarial, and social work (Tangri, 1972). Not only is it the case that just a small proportion of women are involved in asex-typical employment, but there is little evidence that this division of labor along sex lines is declining. After a careful analysis of United States census data, Gross (1968) concluded that there had been no change in occupational segregation from 1900 to 1960, and that sexual segregation in occupations surpassed racial segregation in severity. Although the percentage of women in the work force has climbed dramatically over the past decades, Gross notes that,

the movement of women into the labor market has not meant the disappearance of sexual typing in occupation. Rather, the greatest expansion in female employment has been accomplished through the expansion of fields that were already heavily female, through the emergence of wholly new occupations. . . which are defined as female from the start, and through females taking over previously male occupations (p. 202).

Although some inroads toward integration have been made since Gross' analysis, data from the 1970 census are generally consistent with the trends

he describes. For example, the increased proportion of women professionals is largely accounted for in terms of increased numbers of women in the sextypical fields of teaching, social work, nursing, and health-related fields (U.S. Department of Labor, 1975). The outlook for the future is not promising. In 1972, Koontz, then director of the Women's Bureau of the Department of Labor, noted only very limited changes away from the persistent concentration of women in college majors which would prepare them for sextypical work and continued occupational segregation. As the percentage of women who enter the work force rises each year, so does the urgency of the occupational segregation issue ("Women at Work", 1976).

While the general rule has been for women to work in "appropriate" feminine occupations, the exceptions are noteworthy. There have long been female physicians, lawyers, physicists, etcetera, small as their numbers might have been. Even when social and political pressures have been keen, there have been outstanding rebels, from George Sands to Marie Curie and Margaret Mead. While I do not wish to minimize the role of economic and political factors in creating and maintaining occupational segregation (See Blazall and Reagan, 1976 for review), as a psychologist I believe that family background and socialization factors may be significant in fostering the movement of women against the mainstream of societal expectation. Knowledge of the background and personality factors which facilitate atypical career choice may suggest means of counteracting the occupational segregation status quo.

Androgyny

From a more theoretical perspective, recent conceptualizations of sex role, its measurement, and its relationship to behavior, aptly relate to

a consideration of occupational sextypicality. In the Broverman research, the typical and ideal women were found to be perceived as low on characteristics related to "competence" as well as high on characteristics related to "warmth and expressiveness" relative to men. In sharp contrast to this ideal is the popular image of the career woman as highly competent but only at the expense of warm, nurturant, "feminine" qualities. This either/or approach has been legitimized by a myriad of psychological measures which treat femininity and masculinity as opposite ends of a bipolar dimension.

Recently this traditional manner of measuring masculinity and femininity has been seriously criticized (Bem, 1974; Broverman et al.; Constantinople, 1974). Bem, Martyna, and Watson have argued that to the extent that masculinity and femininity represent complementary clusters of positive traits, it should,

be possible, in principle, for an individual to be both masculine and feminine, both instrumental and expressive, both agentic and communal, depending upon the situational appropriateness of these various modalities; and even for an individual to blend these complementary modalities in a single act, being able, for example, to fire an employee if the circumstances warrant it, but to do so with sensitivity for the human emotion that such an act inevitably produces (1976, p. 1017).

Consistent with this line of reasoning, Bem developed a Sex Role Inventory (BSRI) based on the treatment of masculinity and femininity as two independent unipolar dimensions of traits typically considered more socially desirable for one sex or the other.

The BSRI is an instrument based on a Likert-type scale yielding a Masculinity score, the mean endorsement of items in one's self-description thought to be more socially desirable for men than women, and a

Femininity score, representing the mean endorsement in one's self-description of items thought to be more desirable for women. A third score, the Androgyny score is based on the difference between the Masculinity and Femininity scores, and represents the degree to which one's self-description approaches an equal blend of masculine and feminine characteristics. According to Bem, a woman with a high Femininity score and a low Masculinity score is sex-typed, a woman with a high Masculinity score and a low Femininity score is sex-reversed, and a woman who equally endorses both sets of items is androgynous. More recently Bem has expressed the need to further divide the group of androgynous women. Those who show a low endorsement of the masculine and feminine dimensions have been reclassified as undifferentiated, reserving the androgynous category for those who highly endorse both dimensions (Bem, 1977).

Bem's work subsequent to the development of the BSRI suggests that it is those who are highly sex-typed who are least likely to engage in cross-sex behavior. In one experiment (Bem and Lenney, 1976), sex-typed, sex-reversed, and androgynous women and men were asked to choose which of a pair of masculine, feminine, or neutral tasks they would prefer to perform for pay, in a deception design in which they were told that photographs of people doing things were needed for research at another university. Even when resisting asextypical choices cost them money, the sex-typed individuals were more likely than either androgynous or sex-reversed persons to prefer sex-appropriate activities. Moreover, in a later part of the experiment, when required to engage in cross-sex behavior, sex-typed subjects reported greater psychological distress and more negative feelings about themselves. The androgynous

and sex-reversed persons did not differ in expressing little distress. In brief, it appeared that asextypical behavior was motivationally problematic for sex-typed individuals and that they would actively avoid it as a result.

In her earlier work, Bem demonstrated that androgynous individuals show the greatest flexibility of behavior. In a 1975 study, for example, she showed that androgynous people demonstrated both greater "masculine" independence under conformity pressure and greater "feminine" nurturance in an opportunity to interact with a kitten than either the sex-typed or the sex-reversed individuals, who showed behavioral inhibition in one or both of these situations. It was the highly sex-typed women who showed the greatest behavioral deficits, showing reluctance not only in the independence situation but also in their interactions with the kitten. In a follow-up experiment, Bem, Martyna, and Watson (1976) found that the low nurturance of the sex-typed females in the "kitten" experiment did not extend to interactions with humans, and replicated the earlier finding of greatest behavioral flexibility among the androgynous individuals. The authors concluded that for both men and women sex-typing does appear to restrict ones' functioning in both the instrumental and expressive domains.

Returning to the issue of asextypical occupational behavior, one would expect occupationally atypical women to be high on the "masculine" competency dimension. First, independence, assertiveness, and rationality are essential for adequate job participation in many male-dominated occupations, particularly in the professions. Second, by virtue of being pioneers on traditionally male occupational turf, these women would need

the independence and self-reliance not consonant with the feminine ideal. However, the image of the women in male-dominated occupations as competent only at the expense of "feminine" nurturance and sensitivity did not jibe with my own experience. Nor is such a view consistent with Bem's work relating low sex-typing and cross-sex behavior. Following Bem's line of reasoning, high competence does not imply low nurturance, and her data would lead one to suspect that women in cross-sex occupations might very well be androgynous. One of the expectations of the current study was that a close examination of these women would show that they are not highly sex-typed but that their "masculine" competence is in addition to and not instead of their "feminine" warmth and expressiveness.

Purpose of the Present Study

In American society, academic achievement beyond the high school level is atypical for women as well as men. It has not been demonstrated that there are correlates and determinants of sextypicality of career choice above and beyond those related merely to academic achievement. The available research on the personality and background characteristics of women in male-dominated occupations is inadequate in this regard for two reasons. First, research to date has focused on the characteristics of asextypical women at high levels of education--doctors, lawyers, architects, etcetera, except for a very few studies on women politicians, artists, and business executives. Virtually nothing is known of the characteristics of women carpenters, miners, pilots or other asextypical women at lower education and status levels. Second, when research has compared asextypical women to other groups, education has never been adequately controlled. Thus, all studies to date have left confounded

the issues of high educational achievement and the sextypicality of career choice. For example, Patrick (1973) compared a group of women in professional graduate programs (all male-dominated) with a group of housewives who differed on at least three dimensions, their level of education, their involvement in a career, and the sextypicality of their major role. Other studies have compared occupationally atypical women with: male participants in the same occupations (Bachtold and Werner, 1972); women in the general United States population (Astin, 1969); women of lower educational attainment (O'Leary and Braun, 1972); norms for females on tests (Bachtold and Werner, 1970, 1971, 1972, 1973), or no group at all (Epstein, 1973). In brief, while the available data indicate some variables which may relate to asextypical career choice in women, it would be premature to conclude that there are factors related to asextypicality per se and not merely to high achievement, since the research has focused almost exclusively on highly educated women, and no study has controlled level of education for female comparison groups.

The major purposes of the present study are two. One purpose is to demonstrate that there are background and personality factors which relate to occupational sextypicality above and beyond those related to high academic achievement. The existence of the sextypicality dimension will be demonstrated by a comparison of occupational "rebels" in asextypical fields with occupational "conformists" in sextypical fields, where members of both groups uniformly hold masters degrees. The particular background and personality variables to be considered in the present study have been drawn largely from past research, to be reviewed shortly.

The second major purpose of this study is to assess the relationship of Bem's concepts of sex-typing and androgyny to non-laboratory asextypical behavior. High academic achievement in itself can be considered as cross-sex behavior from both the standpoint of the minority status of women who complete graduate degrees, and the necessity inherent in academic achievement of exercising "unwomanly" independence, assertiveness, and rationality. If Bem's laboratory finding of greater inhibition in cross-sex behavior among sex-typed individuals generalizes, it would be reasonable to expect women receiving masters degrees to be less sex-typed than the general population of women.

Those women who not only achieve academically but pursue degrees and occupations in traditionally male domains are doubly involved in cross-sex behavior. If sex role socialization is a critical mediating force in determining the direction of occupational commitment in women, and if the positive relationship between sex-typing and inhibition of cross-sex behavior in the Bem research holds in regard to occupational behavior, one would expect occupationally asextypical women to be even less sex-typed than the sextypical women.

Review of the Literature

Over thirty studies were found bearing on the characteristics of occupationally asextypical women. Only studies published in the United States with American subjects are included. Because the validity of career orientation in predicting later career participation has been seriously questioned (Harmon, 1967, 1970) the current review excludes studies on career orientation among adolescents and college students. In light of the increasing strength of pressures toward femininity during

the adolescent and college years (Komarovsky, 1946), most recently conceptualized in terms of fear of success (Horner, 1972), it seems reasonable to distinguish between those who arrive at full career participation and those who drop out along the developmental path. The present review thus includes only women presently working in asextypical fields or currently active pursuing doctoral or professional degrees in their chosen asextypical fields.

History of Relevant Literature

Although the psychological literature was systematically searched from 1930 to the present, no relevant research was found published before 1960. Ironically, in 1930, a year lauded as a peak for female involvement in higher education and the professional work force, there were only four citations under "occupations--women" in the Psychological Abstracts, one of these being an article relating female occupations to preferred coital positions (Kassbacher, 1930). Terman and Oden in 1959 showed equal insensitivity to the serious issues of employed women when they wrote "it is debatable whether the fact that a majority of gifted women prefer housewifery to more intellectual pursuits represents a net waste of brain power" (p. 145). Progress has been a long time coming, and in 1963 Mulvey could still accurately note "the complete lack of comprehensive data on psychological and sociological factors and their interaction as they affect career patterns of women" (p.316). With the feminist revival of the 1960s and 70s, the issue of women's career involvements has finally come into its own. The importance of women's occupational choices and achievements in understanding

female development is now reflected in a rapidly expanding body of literature on women who work.

Empirical literature on the asextypical dimension of womens' career involvements is very recent, with reference to "pioneer" women and those in "male-dominated" fields appearing only in the seventies (Nagely, 1971; Patrick; Standley and Soule, 1974). Relevant studies for the present review began to appear in the 60s in the form of articles on personality and background characteristics of women in various professions and graduate programs. As has been mentioned, relevant psychological literature on non-professional but asextypical women workers is minimal, and the present review is thus restricted to studies of women in asextypical professions and to a few studies of women in politics and business.

Personality Characteristics

What kind of women are involved in so-called "masculine" occupations? Bachtold and Werner have reported data from a series of studies comparing the personality characteristics of various samples of asextypical women with each other and with comparable samples of men. Together they have obtained personality measures on academic PhD psychologists (1970), three generations of women psychologists (1971), female biologists and chemists who appeared in Who's Who (1972), women artists and authors from Who's Who (1973), and women politicians in state legislatures (1974). Most recently Bachtold (1977) has compared all of these groups with each other. The research tool in all of their studies has been the Cattell 16PF which gives scores on 16 relatively independent personality factors represented as bipolar traits.

There are striking similarities among the asextypical women sampled from these divergent occupations. The mean sten scores¹ for all of the groups fell consistently above six on six scales and below five on one, indicating that they differed from "women in general" on these dimensions. Thus across the occupations represented, the atypical women were brighter (B), more dominant (E), adventurous (H), imaginative (M), radical (Q1), resourceful (Q2), and confident (O) than women in general. All groups, with the exception of the politicians for whom sociability is a necessity, were more aloof than the norms.

O'Leary and Braun used the Cattell 16PF to study women PhDs in "masculine" fields, matched PhD men, and women with BA degrees (field unspecified). They found female PhD women to be significantly more emotionally stable, dominant, and resourceful than either the women BAs or the male PhDs. At the .10 probability level they found the PhD women to be more aloof, imaginative, and radical than either of the comparison groups.

A striking pattern emerges in both the Bachtold and Werner series and in the O'Leary and Braun study. In general, occupationally asextypical women seem to be different from women in general on the same characteristics they share with occupationally similar men, that is, the same traits tend to distinguish both men and women in a given occupation from their same sex norms. When Bachtold and Werner compared Cattell profiles of male and female politicians, psychologists, and scientists, they found strong similarities between the male and female profiles in each occupational class. Further confirmation of this trend is available from the

¹Standard score based on 10.

Constantini and Craik study (1972) where the Gough-Heilbrun scales of the Adjective Check List were used to assess personality traits of over 500 female and male politicians from California serving at local, state, and federal levels. Although no significance data are given, females scored highest relative to their sex norms on self-confidence, dominance, and achievement, and lowest on succorance, abasement, and deference. Exactly the same pattern was evident for the male sample relative to their sex norms. The O'Leary and Braun research showed not only that their PhD women were more dominant, stable, and resourceful than other women but that they exceeded male PhDs on these dimensions, suggesting that women in asextypical occupations tend to have even more of the "right" qualities than men in the same fields.

In the studies cited above, there were many dimensions on which the occupationally asextypical women were not found to differ from women in general. For example, the politicians in Constantini and Craik's research scored less than half a standard deviation from the mean for their sex on nurturance, affiliation, and heterosexuality--all positively valued traits related to the "warmth and expressive" feminine cluster discussed by the Brovermans. On aggression, these women were similarly close to the norm. Taken as a whole, the groups studied by Bachtold and Werner did not differ consistently from women in general on the following scale dimensions: Affected by feelings versus emotionally stable, Sober versus happy-go-lucky, Expedient versus conscientious, Tough versus tender-minded, Trusting versus suspicious, Forthright versus shrewd, or Impulsive versus controlled. Nor did O'Leary and Braun find these scales

to distinguish women PhDs from BAs with the exception of showing the PhDs to be more emotionally stable.

Helson's study of female PhD mathematicians sheds further light on the personality characteristics of asextypical women (1971). She gave her 44 subjects a number of personality measures in an attempt to differentiate those judged most creative by experts in their specialty fields from those of average creativity. On the California Personality Inventory, the mathematicians as a whole peaked on Psychological Mindedness and Achievement by Independence, scoring low on Social Poise and Assurance. When Q sorts were done by psychologist-observers after an assessment weekend, the descriptions most frequently given for the women in general included "Genuinely values intellectual and cognitive matters; Appears to have a high degree of intellectual capacity; Values own independence and autonomy; Is a genuinely dependable and responsible person; and Prides self on being objective and rational."

By her comparison of the most creative participants to the others, Helson's study sheds light on personality correlates of exceptionality within an already highly select group of competent women. On the CPI, the particularly creative women showed even greater Flexibility, and Achievement by Independence than the rest. Observers described the highly creative women as even more unconventional, intellectual, narcissistic, and original than the rest, with a flavor of what Helson describes as "rebellious independence."

In contrast to the above-mentioned studies, Patrick failed to find personality differences beyond the chance level on the Edwards Personality Preference Schedule when she compared professional and homemaker samples.

Both groups, drawn from graduates of elite colleges showed high need for Achievement and need for Autonomy, and low need for Deference. However, the role of their autonomy and achievement needs did appear to differentiate the groups. To a TAT stimulus, professionals were significantly more likely to write stories where achievement needs were based on the desire for competence and independence while the homemakers wrote stories where approval and conformity seemed to motivate achievement.

Do occupationally atypical women experience more stress or show more signs of neurosis than other women, by virtue of their deviance from normative female occupational behavior? There are only limited data relevant to this question. In the study of politicians, Constantini and Craik found "counseling readiness" to be the fourth highest score for women but the third lowest for men. A high counseling readiness score represents an individual "worried about herself and ambivalent about her status" (Gough and Heilbrun quoted in Constantini and Craik, p. 225). Since the pattern evidenced by both men and women politicians is characterized by competency traits congruent with the male ideal but in conflict with traditional femininity, this counseling readiness difference may reflect the greater role strain and conflict experienced by these women.

Standley and Soule present data which confirm a "role strain" hypothesis. Over half of the female architects, lawyers, physicians, and psychologists in their study reported that they had experienced more emotional problems than the average women and that they had experienced difficulty coping with them. The psychologists reported least emotional difficulty while the architects the most, suggesting that the more asex-typical the occupation, the greater the stress for the female participants.

Helson administered the MMPI to the mathematician participants and found that the mean scores for both high and average creative groups were all within normal limits, though the creative group scored higher on seven of the eight scales. Helson suggests that the elevated profiles may reflect greater personality complexity and less defensiveness among the creative subjects. While they may have more psychological difficulties than the comparison women, Helson notes that their MMPI profiles reflect high ego strength as well, suggesting substantial coping skills to deal with the stress inherent in not only participating but excelling in "cross-sex" fields. The finding of O'Leary and Braun that both women and men PhDs scored higher than comparison BA women on the Mach V scale of "machiavellianism or ability to manipulate the environment" supports the notion that those women who attain the PhD have unusual coping capacities.

In summary, the available literature suggests that women who participate in traditionally male occupational domains tend to score high on competency traits typically expected and desired of men but not women in our culture, traits of independence, dominance, resourcefulness, etcetera. These women tend to score low on the more "ladylike" characteristics of deference, succorance, and sociability. However, with the exception of the lower sociability of occupationally asextypical women, higher scoring on competency traits does not seem to imply low scoring on the more positive traditionally "feminine" traits. On the contrary, the data suggest that these women are not different from women in general in such traits as sensitivity, heterosexuality, and emotionality. Thus, the picture which emerges would support the claim of Bem (1974) and

Constantinople that masculinity and femininity are not fairly represented as one bipolar dimension, but that it is possible for individuals to exhibit an androgynous mixture of both competence and nurturance, blending the positive dimensions of both "masculine" and "feminine" ideals.

Data in regard to the emotional healthiness of these women are scant and ambiguous. On the one hand, with more of the "right" qualities for a given occupation than the men in the same fields, and with good ego strength and self-confidence, these women appear to have adequate coping skills for their difficult positions. On the other hand, many report stress or produce personality profiles indicative of same. It appears that those who do report stress or whose personality profiles suggest higher stress tend to be those who either excel in their chosen field or participate in the extremely male-dominated ones, consistent with a "role-strain" point of view.

Background Variables

Sibling status. Numerous researchers have noted the preponderance of first-borns among high achievers. PhD and professional women represent a unique body of achievers since their occupational status puts them at odds with "femininity" in the eyes of others.

Sutton-Smith and Rosenberg (1970) note that the national percentages of birth order positions in any given year fluctuate widely, from a peak of 43% first-borns in 1942 to a low of around 27% in the 1960's. Which-ever year one uses for comparison, the data on occupationally asextypical women confirm that for this group of high achievers too, there is a greater than average number of first-borns.

Of the over 1000 PhD respondents to Astin's survey, 47% were first or only born. She notes the above average likelihood of being either firstborn or fourth or later in her sample. In Standley and Soule's study of professionals, 57% were firstborn and 75% were firstborn females in their families. Only a single study reporting birth order data failed to support this trend. Patrick found 45% of her professionals to be firstborn but 56% of her comparison housewife sample, perhaps an artifact of the restriction in range of her samples, both drawn from graduates of highly elite colleges. The rate of firstborns was high for both samples relative to the general population, a finding consistent with the relationship between being firstborn and high academic achievement.

Two studies suggest that women in atypical occupations are likely not only to be firstborns, but to have unusually few brothers. Less than a third of Helson's mathematicians had brothers. The more creative women were more frequently firstborn and had fewer brothers than the others (though the small sample precluded statistically significant differences). Only three of ten highly creative women had brothers, and even the exceptions were noteworthy; one had no father but a single older brother, another had a single brother ten years younger.

The most remarkable data in regard to birth order come from Hennig's study of women business executives (1974). Sampling 25% of the 100 women in the United States who were presidents or vice-presidents of major American businesses, she found that not a single one had a brother and all were firstborn!

In summary, women who attain the goals of PhD, professional status, or high achievement in asextypical fields are more likely to be first-born than would be expected in the general population. Having no siblings or female rather than male siblings may increase the trend toward female occupational competence, at least in some fields.

Foreign origin. Country of origin appears to relate to female participation in asextypical work. Though the pattern of the relationship varies with the occupation in question, there is a strong positive relationship between foreign background and high intellectual achievement among the women studied. Astin reports that 15% of her PhD women were foreign born. Of the American born, 27% had foreign born mothers and 33% had foreign born fathers, as compared to 14% foreign birth in the comparable age group in the general population. Helson reports that 41% of her PhD mathematicians were born abroad, and those ranked more creative were even more likely to have been foreign born than the others ($p < .10$).

Epstein (1968) interviewed 54 women lawyers and found that 46% had foreign born fathers and 43% had foreign born mothers. Such high ethnicity may be an artifact of her New York sample. Over half of her sample was Jewish, and, in light of the strong intellectual tradition of Judaism, this, rather than the foreign origin, may be the more salient factor. In a later study, Epstein (1973) interviewed a sample of black New York professional women. She found one-third of her sample to be of West Indian background, though this may reflect a sample bias.

On the negative side, Patrick found no difference in foreign origin between professional and housewife samples--20% of the former and 28% of

the latter had at least one parent who was born abroad. These data were affected, however, by the fact that foreign citizens were excluded from her samples.

In contrast to the generally positive relationship between foreign origin and PhD or professional status, two studies suggest a negative relationship between ethnic background and participation in business administration and politics. Constantini and Craik found that 50% of the 546 respondents in their survey of politicians were "old American stock", at least third generation American born. Women politicians had longer American heritage and were less likely to be non-Protestant than comparable male politicians, suggesting again that women are not qualitatively different, but rather have more of the "required" characteristics than men in comparable positions. Hennig reports that all of her women business executives were white and American born.

To sum up, there appears to be a relationship, albeit an inconsistent one between foreign origin and occupational status. Foreign origin appears to correlate positively with PhD and professional status and negatively for women politicians and business executives. Baseline data on ethnicity of the specific geographic and socio-economic populations from which the research samples have been drawn would facilitate an understanding of these data.

Parental education, employment and socio-economic class

Asextypical women in occupational areas requiring graduate education or professional degrees generally come from families with higher than average education, occupational status, and education. In Astin's study, 18% of the mothers and 31% of the fathers had at least one college degree,

well above the educational level for the comparable group of the general population. Similarly, Patrick found that over half of her professional sample but only one-fourth of her housewife sample had mothers with a BA degree. Of the fathers, 59% of the professional sample but only 31% of the comparison group had graduate or professional degrees. In a study by Hutchins noted by Lopate, close to 35% of female medical students had mothers with at least a BA. The level of paternal education was higher for female as compared to male medical students, a trend also noted by Astin for PhDs and Constantini and Craik for politicians.

In general, the high parental education is reflected in the parents' occupation roles. Patrick, for example, found that 28% of the fathers of her professional women were themselves professionals, although daughter's career choice only infrequently corresponded to the paternal career. Another 40% of the fathers held business or managerial positions. A similar pattern held for mothers who worked, 70% of whom were in the professions, business, or management.

Other studies confirm the trend of high status parental employment. Over half of the fathers of Standley and Soule's professional women were themselves professionals. Epstein found that 19% of her women lawyers had professional fathers while 50% had fathers in business management. One hundred percent of the business executives studied by Hennig had fathers in business. An impressive 76% of Helson's PhD mathematicians had professional fathers. Though half of the mothers of her total sample were at least as well educated as their fathers, there was a significant tendency for the creative women to have better educated

fathers than mothers and professionally employed fathers, as compared to PhDs of average creativity.

Many of the studies show a trend of high maternal employment in the families of asextypical women. Ginzberg (1966) found three-quarters of the mothers of a sample of women receiving graduate degrees in medicine at Columbia worked outside the home. The professional women in Patrick's study were significantly more likely to have had working mothers while growing up--a rate of 47% employment as compared to 26% for the housewife sample. Epstein found a high level of maternal employment among her black professional sample--27 of the 31 women interviewed (87%) had mothers who had worked since marriage. Though this percentage may not be significantly high for a black New York sample, it is noteworthy that these mothers were very well employed, too--five-sixths had jobs of higher status than their husbands.

Maternal employment may relate to persistence in an asextypical career. Lopate, for example, notes that medical school drop-outs have significantly lower maternal employment than those women who complete medical training. Astin found maternal employment significantly related to actual participation in the work force after completion of the PhD.

The trends toward a high rate of maternal employment and high parental occupational status break down in studies of asextypical women in fields of politics and business where high educational achievement is not prerequisite. Bach (1971) found that 86% of her politicians had mothers who were housewives with no outside employment. Their fathers did not tend to be professionals; the modal occupation was farming and over fifty percent of the fathers were in farming and management. In

Hennig's study, very few mothers of business executives were formally employed, though they tended to be very highly educated and were frequently heavily involved in the family business.

A finer analysis of maternal employment data, including type of employment and the motivations for and the specific nature of the women's home and work responsibilities might further elucidate the relationship between maternal employment and occupational asexypicality. Patrick, for example, found that professional women were more likely to cite "major career interest" as a factor in their mother's employment as compared to more practical, extrinsic reasons for maternal employment offered by the homemaker women. While half of the homemaker sample expressed resentment at having an absent mother, none of the professional women did so. Epstein found that all of those in her lawyer sample who stated an opinion said that their mothers enjoyed their work. Epstein's study suggests the importance of looking at the nature of both the mother's home and work involvements. Of the 67% of mothers who were employed at any point the daughters could recall, a high 20% were professionally employed. But those not employed were not necessarily "just housewives." Over a third of the lawyers recalled their mothers being very active in organizations outside the home.

Summarizing the data on parental education and employment, it is clear that occupationally asexypical women tend to have highly educated and well-employed fathers, and mothers who are highly educated and who tend to be employed outside the home. In the Epstein study, mothers tended to be better educated and employed at higher status jobs than their husbands. The women studied tend to report that if their mothers worked,

they enjoyed their work and had major interest in a career. There is some indication that many of those mothers who were not employed outside the home were very active in organizations outside the home and/or worked informally in family businesses. The fact that this pattern does not apply to all of the women studied in any asextypical group, and that it clearly does not describe women politicians and business women suggests no simple relationships.

One would expect data on socio-economic class to reflect the high education and employment of these families. The studies cited confirm that, in general, these are privileged families of at least the upwardly mobile middle class.

Parental values. All of the studies reporting data on parental values indicate strong emphasis on achievement generally, and on education specifically, hardly surprising in light of the high educational and occupational status of these families. Seventy percent of the 294 women politicians in Bach's survey reported that one or both parents encouraged them toward educational goals, whereas only 23% reported receiving encouragement in the more explicitly feminine direction of marriage and family. Encouragement was toward educational achievement rather than to a specific career--less than 14% reported being specifically encouraged to enter politics. In the Hutchins study cited by Lopate, 75% of the female medical students felt their parents had been a "major influence" on their career choice. For the females in both of these studies, overt encouragement toward their specific careers might have been superfluous--over 53% of Bach's politicians had one parent or relative in public office and 25% had two. Similarly, Lopate reports an even higher

incidence of physicians among the parents of female than male medical students and the rate for both was high relative to the general population.

Epstein reports that among her black New York professional families, the middle class values of hard work and education were strong. She notes the prevalence of the work ethic within the West Indian culture from which many of her subjects came. Her subjects received strong family support for their careers--not a single woman reported family opposition to the decision to pursue graduate work. An example of the achievement values and support typical of these families is a case reported of a woman who expressed interest in becoming a nurse but whose mother talked her into becoming a physician instead!

Standley and Soule found strong support for work in the families of their professional women. Not only were the mothers highly employed, but the fathers strongly supported and valued the work done by their wives, and both parents seemed to be deeply involved in their daughter's achievements. Sixty-six percent of the women felt their parents had emphasized achievement over social values as they were growing up, whereas only 17% felt that social values received greater emphasis. Hennig similarly characterized the parents of her business executives as having placed high value on their daughters' achievements.

Patrick found that her professional women were more likely than her housewives to report that both of their parents expected them to do well and to obtain advanced degrees. When asked the "best reason" for parental influence on their career plans, the modal response for both parents referred to encouragement of ambition and achievement. Of further

interest is the finding that the fathers of the professionals were significantly more likely to be perceived by their daughters as having expected them to achieve in "innovative" careers.

To summarize, the parents of occupationally asextypical females place value on achievement, education, and hard work, a value background consonant with high achievement motivation regardless of one's sex or field of endeavor. Asextypical women as children generally had parents who not only espoused such values, but who offered at least one, and often two, models of educational and occupational achievement, conveying by word and example that achievement related activities and high competence were appropriate for their daughters as well as for their sons.

Childhood. Although the data on the childhood experience of occupationally asextypical women are retrospective in nature, subject to the biases of hindsight and self-report, they nonetheless suggest noteworthy trends. Many of the women studied recall having been singled out in some way by their parents. Epstein's black professional women reported growing up with a sense of being "special." Seventy-two percent of the professional women in Standley and Soule's study reported that their parents had been proudest of them of all their siblings. Fathers emerged as particularly important -- 60% of the women reported being father's favorite child, as compared to 34% who considered themselves to be mother's favorite. Their special status as youngsters evolved into special adult status in their families. Only a third of the brothers and sisters of these women were professionally committed as adults.

Identification. Do asextypical women tend to identify more with their mothers or their fathers? The data do not suggest that either

parent is the critical one, but rather that both are important. The approaches to parental identification tend to be methodologically of two types, parental preference or parental similarity measures (Patrick).

Looking at parental preference, Epstein found that her women lawyers felt closer to their mothers than their fathers. Among women politicians stating a preference for one parent, Bach found more favored mothers, but an even larger number (36%) reported equal closeness with both parents. The women business executives studied by Hennig characteristically reported warm relations with "two full and complete parents" and an atypically close relationship with a warm, supportive, and sharing father.

Using the Ringness Parental Identification Scale, a parental preference measure, Patrick found that both her professional and housewife groups reported strong identifications with both parents with a slight preference for fathers in both groups. She found support for neither greater father identification among professionals nor greater mother identification among housewives. Furthermore, she failed to find support for the prediction that the professionals would be more likely to identify with the more achievement-motivated parent and the homemakers with the success-avoidant parent.

Turning to measures of similarity, Epstein reports that 32% of the lawyers in her study felt they took after their mothers, whereas 24% felt they took after their fathers and 19% stated both. In Helson's study, identification was judged by an interviewer, apparently on the basis of perceived similarity of the woman to her description of her parents. She found a tendency for her subjects to be judged as having identified

with the more dominant parent, which, in the case of the more creative women, was significantly more likely to have been the father.

In support of the importance of both parents is the unusual family stability suggested by the studies. Hennig's business executives recalled the strong and stable marital relationship of their parents. Ninety-five percent of Patrick's professionals came from intact families as compared to 87% of the homemakers. "Most" of Epstein's black professional women came from intact families.

Androgynous individuation. Occupationally asextypical women tend to recall being asextypical children. Passive, dependent, helpless little girls they were not! The PhDs researched by O'Leary and Braun recalled bluffing their way through difficult situations, changing roles for different occasions and engaging in rebellious, non-conforming behaviors significantly more than either comparison women BAs or male PhDs, showing what may be seen as childhood precursors of adult independence and flexibility. The women and men PhDs in their study recalled being allowed to cross the street alone, go steady, and make dates without consulting their parents earlier than the women BAs. Standley and Soule report that 54% of their professional women preferred "boyish activities", tree climbing, sports, etcetera compared to 36% who reported sextypical preference. Parental tolerance for, if not encouragement of, androgynous exploration is clearly implied.

Hennig's business executives recalled that although their mothers and father performed in sextypical housekeeper and breadwinner roles, they were supportive and reinforcing to each other, and encouraged their children to freely explore both sex roles rather than rejecting either.

Her participants report that they were unaware of sex-related taboos until starting school. When they encountered sex-related restrictions, the parental response was to seek change in the school while supporting the child. Hennig thought that the strong family support for androgynous development had resulted in high self-esteem and positive feelings about achievement.

Other studies have shown mixed results. Kriger (1972) found that career women recalled their parents as having been more permissive than comparison homemakers, although no differences were found between women in "masculine" and "feminine" occupations. Patrick found no difference between her homemaker women and professionals in the degree to which they recalled having been permitted autonomy by their parents, once the effects of parental religion were partialled out.

In sum, though the data are mixed, tentative trends emerge. Many women recalled having been singled out as "special" as they were growing up. Whether this was the cause or result of their exceptionality is impossible to discern from the data, though at least these parents appear to have responded positively to the strengths of their children. In terms of parental identification, certain studies support greater closeness with or similarity to mothers while others stress the importance of the father-daughter bond. A recurrent theme, however, is the importance of both parents, and family stability in the background of women in asextypical careers. Androgynous exploration beginning in childhood appears to have been tolerated if not actively encouraged in the families of most of the women studied.

In reviewing the research literature on the background and personality characteristics of occupationally asextypical women, certain themes recur; opportunity--to explore and develop independently, to witness a wide variety of male and female models, to receive higher education, family encouragement and support for androgynous development, "special" status conferred either explicitly through parental expectation or implicitly through a child's sibling situation or ethnic status, and finally, the theme of women having more of the "right" qualities both in terms of background and personality than men for a particular occupation. Whether the patterns emerging in this review are related to the asextypicality of a woman's career choice, or merely to factors that facilitate high academic achievement is one of the major questions addressed in the present investigation.

Hypotheses and Predictions

The central proposition of the present study is that occupational asexypicality in women has personality and background correlates above and beyond those related to high academic achievement. This proposition was derived from the empirical research on background and personality variables reviewed above, from the relationship between sex-typing and asexypical behavior suggested by the Bem research, and from my belief that to be a pioneer in a traditionally male occupation requires even higher levels of competency characteristics than those necessary for academic achievement. Women pursuing asexypical careers are expected to come from families differing in sibling constellation, foreign background, and maternal employment, to recall different patterns of people and experiences as influencing their career development, and to show more competency related characteristics and greater deviance from prevalent stereotypes of "femininity" than equally well-educated women in sextypical occupations. A design comparing occupationally asexypical women with equally high educated women in sextypical employment is used to test this general hypothesis. The following specific predictions will be tested:

1. Occupationally asexypical women will differ from equally educated sextypical women on the following background variables:
 - a. More likely to be first or only born;
 - b. Have fewer brothers;
 - c. Have a greater number of parents and/or grandparents born abroad; and
 - d. Be more likely to have had a working mother.

2. a. Occupationally asextypical women will differ from sex-typical women in overall personality, as represented by the Cattell 16PF taken as a whole.
- b. Occupationally asextypical women will score significantly higher than occupationally sextypical women on Cattell scales conceptually related to "competence", specifically on the following factors:
 - E submissive/dominant
 - H shy/adventurous
 - M conventional/imaginative
 - Q1 conservative/radical
 - Q2 group dependent/resourceful
 - O confident/insecure (asextypical women would score lower)
3. Occupationally asextypical women will differ from sextypical women in their responses to an open-ended essay on early influences on their career development
 - a. By reporting different patterns of parental and other models,
 - b. By more frequently reporting specific abilities and preferences in determining career choice,
 - c. By more frequently reporting barriers that were overcome in the course of moving toward a career, and
 - d. By less frequently mentioning "practical" considerations as influencing career development.
4. Occupationally asextypical women will describe their "ideal woman" as less sex-typed (feminine) than the sextypical women.

5. Occupationally asextypical women will describe themselves as less sex-typed both
 - a. "on the job", and
 - b. "in a social situation with other men and women".
6. Both occupationally sextypical and asextypical women will describe themselves as more masculine in the job situation and more feminine in the social situation.

CHAPTER 2

METHOD

In this chapter, the participants and measurements used in the present investigation are described, as well as the procedures followed both in the recruitment of women and the administration of measuring instruments.

Participants

Selection criteria. Women were included in the study who held masters degrees and were currently involved in either sextypical or asex-typical employment. A sextypical occupation was defined as one with over 75% female participation, while an asextypical occupation was defined as one with over 75% male participation, according to 1970 census data. Occupational categories which qualified as sextypical and asextypical are presented in Tables 1 and 2 respectively. Occupational categories for which the masters degree would represent a clear overqualification (e.g. secretaries and Avon saleswomen) were not included.

One of the qualifications for inclusion was that a woman fall clearly into either the asextypical or sextypical category. Occasionally an individual would be functioning simultaneously within two classifications, for example, in the case of a nurse who was also a university professor. In such cases, when one category met the criterion for inclusion, but the second did not, the case would be included in the first category. Thus, since a nurse is sextypical while the category "college and university teachers of health specialties" is neither sextypical or asex-typical, she would qualify for inclusion in the sextypical group. If, however, she was also a university dean, she would be excluded from the

sample since "college school administrators" would qualify for the contradictory asextypical group.

Table 1

Selected^a Sextypical Occupations for Women (over 75% female)^b

Occupational Category	Percent Female in United States	Number Female Participants in US 1970
Home management advisors	97%	5,390
Dieticians	92%	37,186
College and university teachers home economics	92%	3,956
Librarians	81%	98,892
Registered nurses	97%	813,816
Teachers elementary school	84%	1,197,807
Teachers prekindergarten and kindergarten	98%	122,792

^aOnly those occupations for which a masters level education is relevant are included in this list.

^bSOURCE: U. S. Bureau of the Census, 1970 Census, Subject Reports, Occupational Characteristics, Table 38, pp. 582-591.

Table 2

Selected^a Asextypical Occupations for Women (less than 25% female)^b

Occupational Category	Percent Female in United States	Number Female Participants in US 1970
Accountants	25%	179,845
Architects	4%	2,090
Computer specialists	19%	50,254
Engineers	2%	20,077
<u>Life and physical scientists</u>		
Agricultural	8%	1,074
Atmospheric and space	10%	602
Chemists	12%	12,894
Geologists	3%	704
Marine	5%	156
Physicists and astronomers	4%	979
Operations and systems researchers and analysts	9%	6,966
Pharmacists	12%	13,150
<u>Social scientists</u>		
Economists	11%	7,562
Urban and regional planners	10%	922
Bank officers and financial managers	17%	54,629
Officials and administrators, public administration	19%	44,661
School administrators, college	23%	8,696

Table 2 (Continued)

Occupational Category	Percent Female in United States	Number Female Participants in US 1970
Managers and administrators, salaried	10%	264,955
Managers and administrators, self-employed	16%	140,782
<u>College and university teachers</u>		
Agriculture	5%	235
Atmosphere, earth, marine, and space	1%	544
Biology	22%	4,353
Chemistry	12%	1,761
Physics	4%	615
Engineering	6%	998
Mathematics	18%	4,641
Economics	9%	842
History	17%	2,959
Sociology	24%	1,661
Theology	16%	792

^aOnly those occupations for which a masters level education is relevant are included in this list.

^bSOURCE: U. S. Bureau of the Census, 1970 Census, Subject Reports, Occupational Characteristics, Table 38, pp. 582-591.

A masters degree was selected as the educational criterion to assure an approximately equivalent and high commitment to achievement among the women in both categories. The doctorate was not chosen because achievement at such a high level is by itself extremely atypical regardless of the field, and because a number of investigators have already focused on such women (Astin, Bachtold and Werner, Helson, O'Leary and Braun). A masters degree equivalence was accepted for three fields: a bachelors degree in pharmacy or architecture was acceptable since this degree represents five years of study and there is an additional credential for professional practice and licensure in these fields; and in accounting, women were accepted for the study if they had either a masters and/or were certified in Massachusetts or Rhode Island, states which require further experience of persons without masters degrees in order to qualify to take certification board exams. Women were excluded from the study if they already held the highest degree possible in their field. Thus, PhDs, MDs and JDs were excluded. Women presently working toward such degrees and those holding more than one masters degree were included, however, as long as they met all other requirements.

There were several additional requirements for inclusion. First, a woman had to be presently employed in her asextypical or sextypical field at least twenty hours weekly. Second, she had to have been awarded a masters degree or equivalent in 1974 or earlier. Third, she had to have been born in the United States, a requirement intended to eliminate confounding by the foreign born versus native American variable. Finally, inclusion was limited to women under fifty, an age arbitrarily chosen to cut down heterogeneity in the data

resulting from wide age differences among subjects.

To summarize, all women were required to meet the criteria below before they were invited to participate in the study:

- (1) Present employment at least 20 hours weekly in either a;
- (2) Sextypical or aseptypical field;
- (3) Having been awarded a masters degree (or acceptable equivalent) in 1974 or earlier;
- (4) Presently fifty years of age or less; and
- (5) Born in the United States.

Revised Sampling Procedure

The original plan was to begin with lists of masters degree recipients at a major university, contacting such people by phone and requesting the participation of all those meeting the criteria stated above. This plan was abandoned, however, when it became clear that considerable time and red tape would be necessary to gain access to alumnae lists, if this were even possible. Factors such as the new federal legislation relating to confidentiality, the geographic dispersal of alums, and the likelihood that many women had changed names through marriage, suggested this approach be dropped in favor of a more efficient plan.

Lists of schools, hospitals, corporations, and agencies in the Rhode Island and greater Boston area were compiled which were thought to be likely employers of highly educated sextypical and aseptypical women. The lists generated were extensive and frequently revised, utilizing a variety of sources, including, but not limited to, the following:

- (1) State and national professional and business organizations;

- (2) The yellow pages;
- (3) College and university catalogues;
- (4) TV and radio;
- (5) Personnel directors of various organizations;
- (6) Participants' suggestions of other agencies and/or personal contacts; and
- (7) Friends and friends of friends with contacts in various agencies.

I personally contacted each participant. In many cases, agencies were scouted in person and participants were recruited face to face. The majority of participants were contacted by phone only, however. Where the name of a specific individual was available, she was contacted directly. In other cases, I spoke to the director of personnel or a secretary, and asked, for example, to speak to "one of your woman accountants". Once a potential participant had been located in this manner, I explained to her that I was doing research on "personality and background characteristics of women who work and who have masters degrees", Specifying my desire to include women in a variety of occupations. If a woman met all criteria for inclusion, she was asked if she would be willing to complete materials that would be sent to her in the mail. I discussed with each woman: (1) the nature of the materials she would be asked to complete and the approximate amount of time this would entail (about two hours); (2) the anonymity of her responses; and (3) my intention of sharing results with all participants. In the few cases where a woman wanted more specific information on the research hypotheses, she was reassured that she was not being deceived but that the more specific

foci, hypotheses, etcetera could be disclosed only after the data were collected.

A number of "rules" were followed in order to minimize variance attributable to a "grapevine effect" in sampling, and to increase the likelihood that the resulting samples would be broadly representative of sextypically and asexotypically employed masters level women in the greater Boston and Rhode Island area. Every effort was made, (1) to include women in as wide a variety of qualifying occupational categories as possible; (2) to sample within each occupational category from a variety of specific settings and work roles; and (3) to use a variety of sources in locating participants for each occupation until an adequate number of subjects for each category was reached. To avoid overloading either sample with members of a particular occupation, a limit of ten participants per occupation was set for the asextypical sample, while a limit of twenty-five per occupation was set for the sextypical sample, since the latter contains far fewer occupational categories. Table 3 summarizes the occupational categories represented in the final samples, the number of organizations from which participants were drawn, and the number of returns for each occupational group. A more detailed breakdown of the organizations represented and their locations is given in Appendix B, Table 1.

As a final safeguard, every effort was made to recruit all qualified women in a particular occupation in either an agency as a whole, or in a clearly defined sub-division in the cases of large organizations. Participating women were routinely asked to review with me other members of the organization who might qualify for my study, as a way of insuring

a thorough saturation of eligible women. In all cases, at least two individuals at each agency where subjects were located were consulted in this regard.

Two issues arose once the process of recruitment was underway. First, several women were located who were in occupational classifications not represented by the breakdowns in the census data, but which appeared to represent discrete occupational categories which were either sextypical or aseptypical. Second, several women were located who could not fairly be put into one or even two classifications represented in the census data, but who represented multiple classifications in the aseptypical direction. In both of these cases, the women were asked to participate, adding a total of ten women to the total recruits; one high school principal and six speech pathologists representing categories not broken down in the census data, and three multiply classified aseptypical women. The decision to include these women was based on a desire to balance rigid adherence to the categories in the census data with the consideration for maximizing sample size and obtaining heterogeneity.

Table 3

Number of Agencies from which Participants were Recruited and Number of Returns for Each Occupational Classification

Occupation	Number of Agencies	Number of Returns
<u>Aseptypical</u>		
Accountants	6	6
Architects	5	6

Table 3 (Continued)

Occupation	Number of Agencies	Number of Returns
Marine scientists	2	3
Geographer	1	1
Pharmacists	4	6
Planners	3	5
Chemists	5	7
Engineers	6	8
Computer scientists	3	3
Managers	4	3
School administrators	2	2
Sociology teachers	2	2
Physicist	1	0
Mathematicians	2	4
Financiers	2	2
Economist	1	3
Marketers	4	1
Miscellaneous	<u>3</u>	<u>2</u>
Total	54	64
<u>Sextypical</u>		
Home economists	8	18
Teachers	8	12
Librarians	8	18

Table 3 (Continued)

Occupation	Number of Agencies	Number of Returns
Nurses	6	19
Speech pathologists	<u>3</u>	<u>4</u>
Total	33	71

Instruments

All participants were requested to complete a package of tests and questionnaires delivered to them with a stamped envelope for their return. The package (see Appendix A) included the following materials in the order listed below:

- (1) Cover letter with postcard to be signed and returned separately from the data package:
- (2) Bem Sex Role Inventory with three different instructional sets, presented in counterbalanced order across participants:
 - (a) "Ideal woman" instructional set--"Think of what kind of woman you would most like to be. Please put next to each adjective below the number which best describes what your IDEAL WOMAN would be like".
 - (b) Self-description in masculine-salient situation--"Think of how you normally behave ON THE JOB. Please put next to each adjective in the list below the number which best describes how you are at your place of

employment. Remember, you are to describe yourself as closely as possible to the way you actually are at work."

- (c) Self-description in feminine-salient situation--"Think of how you normally behave IN A SOCIAL SITUATION WITH OTHER MEN AND WOMEN. Please put next to each adjective in the list below the number which best describes how you are in a social situation. Remember, you are to describe yourself as closely as possible to the way you actually are with other people in a social gathering."

(3) Biographical Questionnaire

(4) Cattell 16PF Form A (answer sheet and test booklet)

BSRI. The Bem Sex Role Inventory was chosen for use in this study both to test the relevance of Bem's concept of androgyny to asextypical occupational behavior, and to experiment with extending the use of the instrument to elicit role-specific behavioral descriptions. It was felt that a social situation instructional set would elicit greater endorsement of feminine items, and that a job situation instructional set would elicit greater endorsement of masculine items.

Data are accumulating in support of the reliability and validity of the BSRI. Bem (1974) reports good internal consistency, with the lowest coefficient alpha calculated for either normative sample for Masculine, Feminine, and Androgyny difference scores being .80. In terms of test-retest reliability, the product-moment correlations between these scores at first administration and at four weeks were .90 or better for a

Stanford normative sample. Bem also reports empirical as well as logical independence of the Masculinity and Femininity scales, with the highest correlation between the scales for either sex being $-.14$ for two normative samples. In terms of construct validity, Gaudreau's factor analytic study of the BSRI (1977) supports its two major constructs, the Masculinity and Femininity scales, and demonstrates that to a great extent, the masculine and feminine items load highly on their appropriate factors. Further data bearing on the validity of her conceptualization have already been discussed.

Biographical Questionnaire. The questionnaire was designed both to gather data relevant to specific predictions derived from the review of the literature, and to provide data tangential to the present investigation for possible future analysis. Questions dealing with demographic factors relevant to predictions are included in the questionnaire, along with an open-ended essay question designed to elicit information on background factors consciously recalled by the participants as relevant to their particular career choice.

Cattell 16PF. As a measure of personality characteristics, the Cattell 16PF, Form A was chosen for several reasons. First, this instrument and form were utilized by Bachtold and Werner in their series of investigations on asexotypical women, thus allowing a direct comparison of the results of this study with theirs. ~~Secondly, the scales of~~ the Cattell tap traits of independence, self-confidence, adventurousness which relate neatly to the "competency cluster" of masculine traits in the Broverman work and the Masculinity scale of the BSRI. Finally, the Cattell has been demonstrated to be a valid and reliable instrument in

studies where occupation has been a critical variable. The interested reader is referred to the 16PF Handbook (Cattell, Eber, and Tatsuoka, 1970) for a detailed discussion of the reliability and validity of the 16PF with occupational criteria.

Analysis of data

The data were analyzed using the computer facilities of The University of Florida, and the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975). All programs utilized were SPSS with the single exception of the repeated measures ANOVA performed on the BSRI data, for which a program was drawn from the Computer Program Library of The University of Florida. The specific statistical procedures used are presented with the results.

CHAPTER 3

RESULTS

In this chapter, differences between those who completed the data package and those who failed to do so will be summarized, and the data obtained on the 135 final participants will be presented. The findings will be organized in four sections: (1) data relevant to a description of respondents and non-respondents, (2) biographical questionnaire data on demographic and family background factors, (3) Cattell 16PF personality data, and (4) Bem Sex Role Inventory data and data on the sex-typing of household and family responsibilities.

Respondents and Non-respondents

Usable data packages were received from 135 of the 166 recruits, for a total response rate of 81.33%. As can be seen in Table 4, of the final participants, 71 were in sextypical and 64 in aseptypical occupations. About 72% of the sextypical respondents were from Rhode Island, a function of the ease with which I was able to locate these women in my home state. The majority of the aseptypical respondents, on the other hand, were from Massachusetts, reflecting the greater prevalence of these women in the Boston area, probably due to the greater employment opportunities due to its size and the nature of its industries.

Overall, the sextypical women were about as likely to return the data packages as the aseptypical women (83.6% and 80.0% return rates respectively). When the return rate is broken down by location, it is clear that unusually high returns from sextypicals in Massachusetts (95.2%) and aseptypicals from Rhode Island (93.1%) were

responsible for boosting the overall return rate. The percentage of respondents by location is given in Table 5.

Table 4

Asextypical and Sextypical Participants by Geographic Region

Participants	Rhode Island	Massachusetts	Total
Asextypical	27 (42.2%)	37 (57.8%)	64 (100%)
Sextypical	51 (71.8%)	20 (28.2%)	71 (100%)

Table 5

Percentage of Recruits from Rhode Island and Massachusetts Returning Completed Data Packages

Participants	Rhode Island	Massachusetts	Total
Asextypical	93.1%	72.5%	80.0%
Sextypical	79.7%	95.2%	83.6%
Samples Combined	83.9%	79.2%	81.3%

Aside from their location, the only data available on the characteristics of the non-respondents are their occupational classifications. The final participants represent five sextypical and 17 atypical occupational categories. A summary of the percentage of recruits in each occupational classification who followed through in completing and returning the research materials is given in Appendix B, Table 2. No particular pattern of response is apparent.

When the asextypical and sextypical groups from Massachusetts and Rhode Island were compared on age, year in which the masters degree was awarded, and socio-economic class of their parental home (t tests and chi square as appropriate), no significant differences were found as a function of location. Data from both locations were pooled in all analyses of the asextypical/sextypical dichotomy.

Demographic and Family Background Data

Current Status of Participants

Age. The average age of the asextypical sample was 31 years and nine months ($\bar{X}=31.78$, $SD=4.86$) as compared to 36 years and ten months for the sextypical sample ($\bar{X}=36.86$, $SD=7.80$). This age difference is statistically significant ($t=4.48$, $df=133$, $p < .001$)¹. Of note is the bimodal distribution of the sextypical sample. As can be seen in Table 6, about 27% of the sextypical group as compared to less than 2% of the asextypical group was 45 or older. Due to the uneven distribution of this older group across the two samples, data on a number of variables were analyzed twice, with the second analysis restricted to participants under 45 years of age.

¹All statistics are based on two-tailed probabilities unless otherwise specified.

Table 6

Age Distribution of Asextypical and Sextypical Samples

Participants	32 or less	33 to 38	39 to 44	45 to 50
Asextypical ^a	43	12	8	1
Sextypical ^b	31	15	6	19

a
n=64

b
n=71

Race and national origin. All participants were American born, consistent with inclusion requirements. All but one participant (sextypical) was white.

Employment status. One of the criteria for inclusion was that women be employed at least 20 hours weekly in their sextypical or asextypical field. This was confirmed in the initial contact before the questionnaire materials were given out. In fact, as can be seen in Table 7, the women in both samples tended to work substantially more than the minimum requirement, with 81.7% of the sextypical and 92.1% of the asextypical women working thirty hours weekly or more. While the asextypical women more frequently reported working more than forty hours weekly, a chi square on the median split, i.e. those working more than forty hours versus the rest, did not reach statistical significance.

Table 7

Average Number of Hours Devoted Weekly to Current Occupation

Participants	10-20 Hours	20-30	30-40	40+
Asextypical ^a	4.8%	3.2%	28.6%	63.5%
Sextypical ^b	7.0%	11.3%	32.4%	49.3%

^an=63^bn=71

The requirements that participants be employed at least 20 hours weekly, and that they received their masters degree in 1974 or earlier were meant to ensure a minimum amount of experience in and commitment to their chosen field. The asextypical women tended to have worked a shorter amount of time. As evident in Table 8, the median amount of time in a given occupation was five to ten years for the sextypical sample and one to five for the atypical group. A chi square on the median split, i.e. those having worked five years or less versus the rest, was not statistically significant.

Table 8
Number of Years in a Given Occupation

Participants	One year or less	1-5	5-10	10-15	15+
Asextypical ^a	6.3%	45.3%	29.7%	17.2%	1.6%
Sextypical ^b	8.5%	29.6%	31.0%	16.9%	14.1%

^an=64

^bn=71

Several sources of error resulting from inadequacies in the questionnaire are relevant to these employment data, as well as to other data to be reviewed. First, the intervals on some of the multiple choice questions were ambiguously defined. For example, a woman working 30 hours weekly could check either the 20-30 hour or the 30-40 hour category. Second, some open-ended questions were not sufficiently clear. For example, when asked to report how many years one had been employed in the occupation they had given in an earlier question, some responded in terms of a specific job, while others responded in terms of the general occupational class. In the analysis of the data, the assumption was made that such errors were distributed randomly across the asextypical and sextypical samples.

Educational status. All participants were required to have been awarded the masters degree in 1974 or earlier, or to have attained equivalent status by that time. All met this criterion. Specific data are

available on 132 women, showing that the average sextypical woman had held the masters or equivalent six years and 11 months ($\bar{X}=6.93$, $SD=4.67$) as compared to eight years and seven months for the average sextypical woman ($\bar{X}=8.56$, $SD=5.87$), a difference which did not reach statistical significance and was largely the result of the earlier receipt of masters degrees by the women 45 or older. The average age at which the masters degree was received was 25 for the aseptypical women ($\bar{X}=24.98$, $SD=3.15$) and 28 years and four months for the sextypical women ($\bar{X}=28.3$, $SD=5.80$). A t test failed to find this difference statistically significant.

While all women were expected to hold the masters degree or acceptable equivalent, women were excluded from participation if they held a PhD, DDS, MD, or JD. None of the women in either sample held any of these degrees. However, the aseptypical women more frequently held a second masters degree, had dropped out of a PhD program, or had taken coursework beyond the masters degree or its equivalent. When the two samples were split between those having minimal academic requirements for inclusion and those having additional academic coursework or credentials, a chi square analysis revealed no significant differences. However, when the participants 45 or over were excluded, the same chi square analysis showed the aseptypical women to be significantly more likely to have more than the minimum. Almost half (46.0%) of the aseptypical as compared to less than a quarter (24.0%) of the sextypical women under 45 had more than the minimum requirement. A summary of the educational status of both groups is provided in Appendix B, Table 3.

Income. How do the atypical and sextypical samples compare in terms of income? Of women employed 30 to 40 hours weekly, 55.6% of the aseptypical women as compared to only 21.7% of the sextypical women earned

over \$17,000. This pay discrepancy was even more severe for those working 40 hours weekly or more, with 66.67% of the asextypical women earning over \$17,000 as compared to only 20.6% of the sextypical women. While the trend for atypical women to receive higher pay is evident no matter what level of weekly involvement is examined chi square analysis on the median split indicated that the difference was significant only for those working 40 hours weekly or more ($\chi^2=16.96$, $df=3$, $p<.001$). Income data on women employed 30 to 40 hours, and those working more than 40 hours weekly are presented in Tables 9 and 10.

The trend for higher income among asextypical women is particularly noteworthy in light of the greater work experience of the sextypical group. Even women in valued "male" fields are underpaid relative to men of equal education in the same fields (Bird, 1971); the even lower pay for equally educated and more experienced workers in sextypical fields suggests a "prestige gradient", with men in male-dominated fields defining the top and women in female fields the bottom on the salary scales.

Table 9

Annual Income of Women Employed Thirty to Forty Hours Weekly

Participants	\$5000 -9000	\$9000 -13000	\$13000 -17000	Over \$17000
Asextypical ^a	0.0%	11.1%	33.3%	55.6%
Sextypical ^b	13.0%	30.4%	34.8%	21.7%

^a_{n=18}

^b_{n=23}

Table 10
Annual Income Reported by Women Employed At Least Forty
Hours Weekly

Participants	\$9000-13000	\$13000-17000	Over \$17000
Asextypical ^a	5.0%	28.2%	66.7%
Sextypical ^b	20.6%	58.8%	20.6%

^a_{n=39}

^b_{n=34}

Religion. Respondents were asked to give their present religion as well as the religion in which they were raised. These data are presented in Tables 11 and 12. As is evident in Table 11, the most frequent family religious background for both groups was Protestant with Catholics close behind and Jews third. A chi square on the distribution of participants across religious categories revealed no significant differences. The only notable difference between the samples, in terms of family religion, was the lower percentage of Protestants in the asextypical group, the difference being made up by women reporting "none" or "other" religious background.

There were no significant differences between the two samples with respect to their present religion (χ^2 on Protestant versus other). The movement of women away from the religion of their parental home is evident by comparing Table 11 and 12 or by examining Table 13 which shows

the percentage change in each religious category. The percentage of women in the Jewish category shows remarkably little change, whereas the Catholic and Protestant categories were largely absorbed by the "no present religion" group. Whereas 4.7% of the asextypical and 1.4% of the sextypical women reported no religion in the parental home, a substantial 45.3% of the asextypical and 33.3% of the sextypical women reported no present religion. The lower percentage of sextypical women reporting no present religion is largely accounted for by the older participants since 95% of those 45 or older expressed a religious preference. Chi square analysis on those currently reporting a religious preference and those not showed no significant difference.

Table 11
Family Religion

Participants	Protestant	Jewish	Catholic	Other	None
Asextypical ^a	39.1%	15.6%	35.9%	4.7%	4.7%
Sextypical ^b	49.3%	13.0%	36.2%	0.0%	1.4%

^a_{n=64}

^b_{n=69}

Table 12
Present Religion

Participants	Protestant	Jewish	Catholic	Other	None
Asextypical ^a	14.1%	14.1%	20.3%	6.3%	45.3%
Sextypical ^b	27.5%	11.6%	24.6%	2.9%	33.3%

a
n=64

b
n=69

Table 13
Percentage Attrition from Religion of Parental Home for
Three Religious Categories

Participants	Protestant	Jewish	Catholic
Asextypical	64.0%	10.0%	43.5%
Sextypical	44.1%	11.1%	32.0%

Marital and family status. Current marital status is given in Table 14. Of the asextypical women, 65.6% were either presently married or had been married at some point in the past, as compared to 59.2% of the sextypical women. The lower marriage rate among the 45 or older segment of the sextypical group largely accounts for this difference. Looking at just those women under 45, 66.7% of the asextypical as compared to 71.2% of the sextypical women fell in the ever-married group. Close to half of the women in both samples were married at the time of the study. A substantial 85.4% of the asextypical and 86.0% of the sextypical women who had ever married reported having completed college before their first marriage.

Table 14
Current Marital Status

Participants	Single	Married	Widowed	Divorced or Separated	Remarried	Living with Someone or in Commune ^c
Asextypical ^a	23.4%	46.9%	0.0%	12.5%	3.1%	14.1%
Sextypical ^b	33.8%	45.1%	1.4%	8.4%	5.6%	5.6%

^a
n=64

^b
n=71

^c
Only one asextypical participant lived in a commune.

Of the 42 atypical women who had ever married, one third had at least one child, as compared to two-thirds of the ever-married sextypical women. A chi square showed this difference to be significant ($\chi^2=10.72$, $df=1$, $p < .01$). Married asextypical women were thus less likely to have had children than the ever-married sextypical women. Since most of the women over 45 were single, this difference in child-bearing does not appear to represent the greater age of the sextypical women. Women in both samples were twice as likely as not to report taking some time out of employment for child-rearing.

Income of spouses or living partners. A total of 74 women reported the salary of their spouse or "partner". The median and modal income category for partners of women in both the asextypical and sextypical samples was over \$17,000. Slightly more sextypical women had spouses with incomes in this high bracket, consistent with their greater age. It is clear that both sets of women have "married well" from a financial point of view, and the combined family incomes for these women would put the majority well above the median for families with two members employed (U.S. Bureau of the Census, 1973). The data on partner's income are presented in Appendix B, Table 4.

Background of Family of Origin

Family stability. The participants were sorted into those who experienced the death of a parent or parental divorce or separation before the age of 18, and those who reported no such disruption in family life. Eighty-three percent of the asextypical women and 89% of the sextypical sample reported no disruptions, suggesting high family stability for both samples. Group differences were not significant.

Foreign background. Many women in both samples had parents and/or grandparents who were born abroad, as is evident in Table 15. The modal number foreign born parents or grandparents was none for both groups, however. A one-tailed t test revealed no significant difference between the two samples, suggesting that foreign background does not differentiate asextypical and sextypical samples in the present study ($t=1.54$, $df=133$, n.s.).

Table 15
Number of Parents and Grandparents Foreign Born

Participants	None	One	Two	Three	Four	Five	Six
Asextypical ^a	40.6%	15.6%	14.1%	7.8%	14.1%	3.1%	4.7%
Sextypical ^b	32.4%	9.9%	11.3%	14.1%	25.4%	1.4%	5.6%

^a $n=64$

^b $n=71$

Socio-economic status. The modal and median response of both asextypical and sextypical groups, when asked to select a descriptor of the SES of their family of origin, was "average". The reported SES of both groups tended to fall normally around the average, as illustrated in Appendix B, Table 5. It is impossible to discern the degree of accuracy of this gross measure of socio-economic class without more specific information on parental employment and income than was available from the questionnaires.

Sibling status. Data on the birth order positions of asextypical and sextypical women are presented in Table 16. Only child status was only slightly more frequent among asextypical women. When one looks at firstborn status, however, a full 56.3% of the asextypicals but only 38.0% of the sextypicals were only or eldest children, a difference which is statistically significant ($\chi^2=3.79$, $df=1$, $p=.0516$). The 45 or older subgroup of the sextypical sample did not differ from the sample as a whole on this variable--37.0% were firstborn. Looking at those who were firstborn females, 78.1% of the asextypical and 63.4% of the sextypical women fell here, a difference which was not significant. In brief, whereas the only statistically significant difference is for firstborn status, the asextypical women report being more frequently the only child or the eldest female child.

Table 16
Birth Order Positions

Participants	Only Child	Firstborn ^c	Firstborn Female ^d
Asextypical ^a	9.4%	56.3%	78.1%
Sextypical ^b	7.0%	38.0%	63.4%

^a_{n=64}

^b_{n=71}

^cOnly children included

^dOnly and eldest children included

It was predicted that asextypical women would have fewer brothers than the sextypical women. Because of faulty questionnaire construction, the exact number of brothers was not available, and it was necessary to focus on the presence or absence of male siblings rather than on the specific number. Data on the sex of siblings are presented in Table 17. Contrary to expectation, it was the asextypical women who were more likely to have brothers. The sextypical women more frequently came from families where there were no male siblings ($\chi^2=4.20$, $df=1$, $p<.05$).

Table 17
Sex of Siblings

Participants	No Siblings	All Female	All Male	Male+Female Sibs
Asextypical ^a	9.4%	26.6%	35.9%	28.1%
Sextypical ^b	7.0%	46.5%	23.9%	22.5%

a
n=64

b
n=71

Parental education. Data on parental education of the asextypical and sextypical samples are presented in Appendix B, Tables 6 and 7. Fifty percent of the asextypical women had fathers who had finished college as compared to 39.4% of sextypical women. A similar

trend was evident in terms of maternal education: 46.9% of the mothers of atypical women finished college but only 35.2% of the mothers of sextypical women. These differences were not totally accounted for by the lower education of the parents of the 45 and older sextypical women, although parental education was lower for this subgroup (31.5% of fathers and mothers in this subgroup finished college). While a greater proportion of the parents of atypical women had at least some higher education, separate chi square analyses of those having some college as compared to the rest showed no significant differences between the groups for either fathers or mothers. More noteworthy is the very high level of education generally acquired by parents of both samples.

Maternal employment. Participants were asked whether their mothers had worked subsequent to their marriage, and if so, during what years of their own lives. Relevant data are presented in Table 18.

Table 18

Maternal Employment During Each of Four Time Periods

Time Period	Asextypical ^a	Sextypical ^b
Before your birth	62.9%	31.9%
Birth to six	28.6%	18.6%
Seven to twelve	42.9%	40.0%
Thirteen to eighteen	60.7%	48.5%

^a
n=64

^bn=71

A substantial 78.1% of the asextypical and 52.1% of the sextypical women reported that their mothers had worked since marriage, a difference which was statistically significant ($\chi^2=8.84$, $df=1$, $p < .01$). Chi square analysis on maternal employment for just women under 45 was also significant ($\chi^2=7.38$, $df=1$, $p < .01$). When broken down by time period, the only significant difference between groups was for the years prior to the participant's birth--62.9% of the asextypical as compared to 31.9% of the sextypical women reported that their mothers were employed during this period ($\chi^2=12.63$, $df=1$, $p < .001$). The trend at all ages, however, was for more of the mothers of asextypical women to have been employed.

Type of maternal employment was assessed by classifying mothers in one of three categories, according to their major involvement during the participant's childhood and youth. Women employed only part-time and during no more than one of the time intervals assessed were classified as primarily homemakers, as were those from whom no employment was reported. Women employed more than this minimum were classified as non-professionals or as professionals, if they held MDs, PhDs, DDSs or JDs which they used in appropriate employment. These data are presented in Appendix B, Table 8. Although more precise information would have been preferable, the design of the questionnaire was inadequate to allow greater specificity. The type of maternal employment did not differentiate the two groups. While the only mothers falling in the professional category were in the asextypical sample, the difference in maternal professional employment was not significant.

Paternal employment. Fathers were divided into two groups, parallel to the two classifications for employed mothers described above. Of

Those fathers who were present in the home during childhood, 8.5% of the sextypical and 19.4% of the asextypical sample were professionally employed, utilizing the most advanced degree in their field. A chi square analysis did not show this difference to be statistically significant ($\chi^2=3.25$, $df=1$, $p < .10$). Relevant data are presented in Appendix B, Table 9.

Essays: Self-perceived Influences on Career Development

As part of the questionnaire, each woman was asked to write a brief essay on what she perceived to have been the important people, experiences, and influences on her career development. Sixty-one asextypical and 68 sextypical women responded to this question.

Each essay was read by three female judges naive as to the nature of the research. These judges were all college graduates between the ages of 25 and 30 who were requested to follow standardized instructions for making judgements as presented in Appendix C. Each essay was judged by the three judges on the presence or absence of each of fifteen categories. The inter-judge agreement was high; there was total agreement among the three judges on 86.61% of the judgements required, an agreement very much higher than would be expected by chance ($\chi^2=10.38$, $df=1$, $p < .0001$). The percentage of total judge agreement (all three judging a particular essay in the same direction on a given category) for each category is given in Table 19.

Each participant was classified as expressing a given category if at least two judges rated the essay as positive on that dimension. The percentages of essays from each group judged as mentioning each of the categories are given in Table 19. Two categories were dropped from the

final analysis due to the low inter-judge agreement for the particular category. These deleted categories were "Mention of Practical Considerations", and "Mention of Specific Skills or Preferences".

Chi square analyses on the remaining categories showed significant differences between the groups on five categories. Overall, women were more frequently mentioned by the sextypical women and men by the asex-typical women. The asextypical women more frequently mentioned the positive influence of their fathers, boyfriends, male teachers or advisors, while the sextypical women more frequently mentioned the positive effects of a female relative or of a female teacher or advisor.

Table 19

Percentage of Essays Judged as Including Each of Fifteen Experiential Categories (N=129)

Category	Asextypical ^a	Sextypical ^b	χ^2	%Total Judge Agreement
Positive Influence of Mother	44.3%	48.5%	0.24	90%
Negative Influence Mother	13.1%	10.3%	0.25	88%
Positive Influence Father	57.4%	29.4%	10.28 ^{***}	91%
Negative Influence Father	8.2%	5.9%	0.27	91%
Positive Influence Husband	18.0%	7.4%	3.38 [*]	95%
Positive Influence Boyfriend	9.8%	1.5%	4.38 ^{**}	94%
Positive Influence Male Relative	9.8%	4.4%	1.46	95%
Positive Influence Female Relative	9.8%	25.0%	5.05 ^{**}	95%
Positive Influence Male Teacher	37.7%	11.8%	8.16 ^{***}	90%
Positive Influence Female Teacher	26.2%	44.1%	4.48 ^{**}	86%

Table 19 (Continued)

Category	Asextypical ^a	Sextypical ^b	χ^2	% Total Judge Agreement
Positive Influence Male Friend	13.1%	7.4%	1.18	90%
Positive Influence Female Friend	21.3%	29.4%	1.11	85%
Mention Practical Considerations	26.2%	30.9%	-- ^c	60%
Mention Specific Skills	9.8%	10.3%	-- ^c	58%
Mention Barriers Overcome	4.9%	4.4%	0.02	91%

a

n=61

b

n=69

cc

Deleted from chi square analysis due to low judge agreement.

*p < .10

**p < .05

***p < .01

The statements of a number of women are presented to illuminate the variability in the essay data in regard to the major group differences. In terms of the more prevalent mention of male models by the asextypical women, fathers were more frequently mentioned by this group as having been proud or having provided encouragement and/or assistance for their academic pursuits, even when these might have involved "unfeminine" activities. For example,

My father, who never really got an education. . .put a great deal of emphasis on achieving excellent grades in school.

Or more specifically,

Math was one of my favorite subjects in high school. My father, although not a scientist, delighted in my academic success in this field.

My father showed special interest and guided me in my science projects in high school. He is a chemist and is probably the one person to have influenced me most in my choice of a career.

Other women mention the more general encouragement toward androgynous exploration which other families might have considered taboo. For example,

The major influence on my career was my father. He always encouraged me, saying I could do anything I set my mind to. I seldom, if ever, heard words like "girls can't do that".

Another woman writes,

Father expected me to participate in activities generally thought of as "male-oriented", mowing the lawn, delivering papers, playing baseball with the guys. He expected me to do well in math, science, etc. and taught competitive behavior.

Often, the specific skills and trappings of a father's occupation seem to have played a role. An architect, still considering entering law writes,

My father was a lawyer and family dinner often consisted of discussions where arguments had to be sound and documented. Chief participants were usually my father, my oldest brother, and myself. From earliest memories I was interested in political and human rights and would argue points with my family.

An engineer writes,

My father and stepfather were engineers and the house was full of science and engineering books.

Husbands and boyfriends were more frequently mentioned by asextypical than sextypical women as sources of positive influence, usually as sources of encouragement and emotional support. A computer scientist writes,

My husband encouraged me to attempt what I wanted to do when I was doubtful I could do it. He believes in me and is willing to let me grow.

An architect noted her husband's supportive colleagueship.

My husband, also a landscape architect, has been a continuing source of strength. We work well together and complement each other's professional strengths and weaknesses. He is my greatest career asset.

Male teachers were frequently mentioned by the atypical women as imparters of information. Two such examples follow:

The chairman of the civil engineering department of the college I applied to talked me into engineering instead of biology as a method of saving the environment.

My decision to go into public accounting was due to the influence of my college advisor who. . .took an interest in me. He did everything possible to direct me and expose me to all information available about the field.

With some teachers, it appears that competency got a boost from "feminine" romantic interests, as in the case of the pharmacist who writes,

I had a crush on my 7th grade math/science teacher, but I was lousy in math so had to excell in science part so he would notice me.

Even the "feminine" helping role may come into play.

In high school we got a new chemistry teacher who was very confused so I helped him out by cleaning up after labs, making stock solutions, etc.

Female influences. In contrast to the asextypical women, the sex-typical women more frequently mention non-parental female relatives and female teachers as having positively influenced their career development. The heterogeneity expressed in the positive references to such women is also impressive.

Cousins and grandmothers were frequently mentioned. A librarian writes,

My grandmother was a librarian in a small town where I grew up--a much respected person--I enjoyed helping her and eventually "substituting" for her as a young child.

A nurse noted a,

cousin, eight years older than I who is a nurse--she was also a neighbor and I spent a great deal of time with her.

Several sextypical women mentioned the unmet aspirations of other women as influential. A nurse writes,

Throughout my childhood (I) heard an aunt talk of how she wanted to be a nurse and couldn't as (she) could not raise money in the family.

Other women noted either the limited options represented by available models or the narrowing of options they experienced in relation to significant others. For example, one woman writes,

There was a strong push to go into teaching as being appropriate for a woman. My mother and her sisters were teachers. Myself and one sister are presently teachers.

Another sextypical woman writes,

My guidance counselor literally gave me the choice of being a teacher or a nurse. My sister was a teacher so I decided to be a nurse.

Even apparent serendipity was mentioned;

A female occupational nurse who walked to work each day passed my house. I can remember when she helped me after getting caught while trying to climb a picket fence.

Summary of Questionnaire Findings

The main features of the questionnaire data will be summarized briefly below. First, data on similarities and differences between the samples that are not directly related to specific predictions will be described. Subsequently, data relevant to each prediction will be summarized.

General Findings

The overall return rate was 81.33%, with asextypical and sextypical participants about equally likely to complete and return the data package. The average age of the asextypical respondent was 31 years and nine months, significantly younger than the average sextypical respondent who was 36 years and ten months old. This age difference was largely accounted for by a large cluster of sextypical women in the 45 to 50 age range. All but one participant were white.

In terms of employment and education variables, over 80% of each sample reported working 30 hours weekly or more. The median number of years employed in their current occupation was five to ten for the samples combined. At the time of the study, the average participant had held the masters degree or equivalent seven years and ten months, and had earned the degree at the average age of 26 years and nine months. Less than half of each sample reported coursework, an additional masters degree or other qualification above and beyond the minimum for inclusion, although the asextypical women under 45 were significantly more likely than their sextypical age peers to have more than the minimum educational requirement. Although overall there were trends for the asextypical women to work more hours weekly, to have been employed for a

fewer number of years and to have held the masters degree a shorter time, none of these trends reached statistical significance.

A pay discrepancy favoring the asextypical women was found between those members of each sample working the same number of hours each week. While this trend was consistent at all levels of hours employed, the difference was significant only for those working 40 hours weekly or more.

Looking at marital and family status, about two-thirds of each sample were currently married or had been married at one time, and about half of each sample was married at the time of the study. Those women who had married tended to marry late; 85% of each sample reporting their first marriage after graduation from college. Among those of both samples who had ever married, it was the sextypical women who were more likely to have children. This difference was significant.

Of those women reporting the income of either their husband or current living partner, the median and modal response for both groups was in the "over \$17,000" category, indicating that members of both samples had "married well", with the sextypical women more frequently marrying men of higher status than themselves in terms of this most salient factor (Safilios-Rothschild, 1976).

Turning to family background variables, less than 20% of each sample reported parental divorce or separation, or the death of a parent prior to age 18. The reported SES of both groups tended to be "average", although the means for assessing this was imprecise. No significant differences were found on either family religion or current religion. Over 75% of each sample reported either Protestant or Catholic family background.

Parents of both samples tended to be more highly educated than the general population, with over half of the mothers and fathers having at least some college education. There was a nonsignificant trend for the mothers and fathers of asextypical women to be more highly educated than their sextypical counterparts.

Neither type of paternal or maternal employment significantly differentiated the two groups, although fathers of asextypical women were more frequently professionally employed (19.4% as compared to 8.5% of the fathers of sextypical women). The very few women who had mothers who were professionally employed were in the asextypical sample.

Findings Relevant to Predictions

Several specific predictions were made prior to data collection, which are relevant to the findings which have been reviewed:

(1) It was predicted that asextypical women would more frequently be firstborn when compared to an equally educated sextypical sample. This was confirmed for this sample--56.3% of asextypical as compared to 38.0% of the sextypical women were firstborn ($\chi^2=3.79$, $df=1$, $p<.05$).

(2) It was predicted that asextypical women would have fewer brothers than sextypical women. Although the data gathered were inadequate to compare the number of brothers, when asextypical and sextypical samples were compared in terms of the presence or absence of brothers, it was the asextypical women who more frequently had brothers, contrary to prediction. Of the asextypical women, 64.1% had brothers as compared to 46.5% of the sextypical women ($\chi^2=4.20$, $df=1$, $p<.05$).

(3) It was predicted that asextypical women would have greater numbers of foreign-born parents and grandparents. This was not confirmed.

(4) It was predicted that maternal employment would be higher among the asextypical than the sextypical women, a prediction which was generally confirmed. A significantly greater proportion of the asextypical women reported that their mothers had been employed subsequent to marriage ($\chi^2=8.84$, $df=1$, $p<.01$). Although a trend favoring greater employment among the mothers of asextypical women was evident from before the participants' birth through age 18, significant differences were found only for the time interval before the participant's birth ($\chi^2=12.63$, $df=1$, $p<.001$).

(5) It was predicted that occupationally atypical women would, on an open-ended essay on early influences on career development, differ from sextypical women (a) by reporting different patterns of models, (b) by more frequently reporting specific abilities and preferences in determining career choice, (c) by more frequently reporting barriers overcome in the course of moving toward a career, and (d) by less frequently mentioning "practical" considerations as influencing career development. Chi square analysis confirmed that the asextypical women more frequently mention males as important, specifically, the positive influence of their fathers, boyfriends, and male teachers, while the sextypical women more frequently mention females as important, specifically, the positive effects of female relatives and teachers. The two categories related to mention of practical considerations or specific abilities were dropped from analysis due to low agreement among the judges. Finally, less than five percent of either sample was judged as having mentioned barriers overcome, with no significant differences between the asextypical and sextypical samples.

Cattell 16PF Personality Data

Each of the 125 participants completed the Cattell 16PF, Form A. The mean scale scores and the standard deviations for each group are presented in Table 20. Mean group profiles are displayed graphically in Figure 1.

The SPSS direct method discriminant analysis was used, yielding D for the function of 2.06, significant beyond the .001 level. The discriminant function correctly classified 71.85% of the cases. On the basis of this analysis, it can be concluded that the asextypical and sextypical samples can be differentiated on the basis of their Cattell 16PF personality profiles, thus confirming one of the major hypotheses of the study.

A greater understanding of the group differences is gained by focusing on the contributions of each of the scales to the discrimination. The standardized weights and the relative contributions of each of the 16 scales are presented in Table 20. Four of the 16 scales contributed over 70% of the discriminating power of the function. The greater tough-minded realism (I) of the asextypical women accounted for 36.23% of the variance accounted for by the function. The other three most contributory scales were E, F, and H. As can be seen in Table 20, the asextypical women were more assertive (E), and more impulsive and happy-go-lucky (F), but not quite as venturesome and socially bold (H) as the sextypical women. Another 21.7% of the variance was attributable to group differences on A, B, and L. Thus the asextypical women tend to be more reserved (A), brighter (B), and suspicious (L) than their sextypical counterparts.

Table 20

Means and Standard Deviations on Cattell 16PF (Stens)^a

Scale	^b		^c
	Asextypical	Sextypical	
A Reserved/outgoing	4.09 (SD=1.81)	4.97 (SD=2.27)	
B Dull/Bright	8.00 (SD=1.52)	7.48 (SD=1.66)	
C Affected by feelings/ Emotionally stable	5.53 (SD=2.17)	5.83 (SD=1.97)	
E Humble/Assertive	7.22 (SD=1.91)	6.55 (SD=1.75)	
F Sober/Happy-go-lucky	5.80 (SD=2.03)	5.38 (SD=2.08)	
G Expedient/Conscientious	5.42 (SD=2.08)	5.24 (SD=1.87)	
H Shy/ Venturesome	5.94 (SD=2.09)	6.35 (SD=2.06)	
I Tough/Tender-minded	4.47 (SD=1.74)	5.76 (SD=1.78)	
L Trusting/Suspicious	6.64 (SD=1.92)	5.86 (SD=1.78)	
M Practical/Imaginative	6.20 (SD=1.90)	6.35 (SD=1.86)	
N Forthright/Shrewd	4.34 (SD=1.90)	4.75 (SD=2.28)	
O Self-assured/Apprehensive	5.02 (SD=1.95)	5.20 (SD=2.05)	
Q1 Conservative/Experiment- ing	6.80 (SD=1.98)	6.70 (SD=1.92)	
Q2 Group dependent/Self- sufficient	7.17 (SD=1.81)	6.83 (SD=1.72)	
Q3 Undisciplined self-conflict/ Controlled	5.53 (SD=1.83)	5.58 (SD=1.82)	
Q4 Relaxed/Tense	6.10 (SD=1.97)	5.77 (SD=2.15)	

^a Standard scores based on 10 (Norms for "women in general around 5.5)^b n=64^c n=71

Figure 1

Mean Cattell 16PF Profiles for Asextypical and Sextypical

Groups Compared to Norms for "Women in General"

_____ Asextypical (N=64)

- - - - Sextypical (N=71)

Table 21
Summary of Contributions of Sixteen Scales of Cattell 16PF
to Discriminant Function

Scale	Mean Difference (d vector)	Standardized Weight	Percent Contribution to Discrimination
A	.868	.2239	9.54%
B	-.5211	-.2493	6.31%
C	.2997	.3186	4.63%
E	-.6695	-.3583	11.64%
F	-.4166	-.6404	12.95%
G	-.1825	-.1067	0.95%
H	.4146	.5062	10.19%
I	1.2918	.5779	36.23%
L	-.7814	-.1542	5.85%
M	.149	-.0758	-0.55%
N	.4027	-.0464	-0.91%
O	.1816	.2116	1.87%
Q1	-.0927	.1786	-0.80%
Q2	-.3409	-.1528	2.53%
Q3	.0462	-.2733	-0.61%
Q4	-.3192	-.0125	0.19%

Specific directional predictions were made in regard to six of the 16 scales. These are reviewed briefly below:

- E- It was predicted and confirmed that the asextypical group would be more assertive as a whole than the sextypical group. Group differences were in the predicted direction and this submissive/dominance dimension accounted for 11.64% of the variance of the two-group discriminant space.
- H- It was predicted that the asextypical group would be more adventurous than the sextypical group. Contrary to prediction, it was the sextypical women who tended to be more adventurous, with the differences on this scale accounting for over 10% of the discriminating power of the function.
- M- It was predicted that the asextypical group would be more imaginative than the sextypical group. No differences were found on this dimension, thus failing to confirm this prediction.
- O- It was predicted that the asextypical women would be more self-confident than their sextypical counterparts. Though the differences found were in the predicted direction, they were too small to have any significance. Thus, this prediction was not supported.
- Q1- It was predicted that the asextypical group would be more experimenting than the sextypical group. However, no differences were found on this dimension.
- Q2- It was predicted that the asextypical group would be more self-sufficient than the sextypical group. Though the

differences on this dimension were in the predicted direction, they were too small to support his prediction.

Overall, the pattern of differences between the samples does not conform to that which was predicted. Of the six scales about which specific predictions were made, only one, the Assertive/dominance scale (E) was among the top four scales contributing to the significant discriminant function. Two of the remaining top four scales were not encompassed in any prediction, i.e. the Tough versus tender-minded dimension (I), and the Sober versus happy-go-lucky dimension (F). The last of the top four discriminators was included in the prediction but the difference found was in the direction opposite to that which was predicted, with the sextypical group being to more adventurous (H).

The most noteworthy feature of the Cattell 16PF data is the marked congruence of the mean profiles of asextypical and sextypical samples as they vary systematically from the "women in general" represented by the norms, on traits which relate conceptually to the Broverman "competency cluster". The combined samples deviate from the norms on many of just those competency-related scales that were predicted to differentiate the two groups, i.e. they were more assertive (E), experimenting (Q1), and self-sufficient (Q2) than the norms. They also showed greater degrees of intelligence (B) and forthrightness (N) than the norms, traits which can also be seen as indicative of greater competence. While these five scales most sharply differentiate the groups combined from the norms, they are responsible for less than one-fourth of the discriminating power of the function separating the two groups for each other.

In brief, the overall pattern of differences between groups is not well described in terms of differences on a competency dimension, though

a "competency profile" well characterizes both groups relative to the "women in general" represented by the norms. The differences between sextypical and aseptypical women are more aptly described in terms of the role expectations and job demands of sextypical and aseptypical employment, as shall be discussed.

Sex Role

Data relevant to sex roles were obtained from two sources: (1) the Bem Sex Role Inventory, under two situation-specific instructional sets and "ideal woman" instructions; and (2) questionnaire data on the allotment of traditionally masculine and feminine household and family responsibilities.

Bem Sex Role Inventory

General considerations. One hundred and thirty-four women completed the BSRI sheets (one BSRI from an asextypical participant was discarded due to missing pages). Masculinity, Femininity, and Androgyny scores were derived for each woman under each of the three different instructional sets. The Masculinity score is the mean rating of the 20 masculine items while the femininity score is the mean rating of the 20 feminine items. The Androgyny score was derived according to Bem's earliest method (1974), by subtracting F-M.

Bem has recently revised her initial scoring system to provide for what she believes is an important distinction between those who score high on both M and F (androgynous) and those who score low on both M and F (undifferentiated). No such distinction was made in the present study for several reasons. First, low M and F scores were exceedingly rare in both groups. Less than 1% of the 804 Masculinity and Femininity scores of the 134 participants under the three BSRI instructions were less than 3 (with a possible range from 1 to 7), and in no cases were both M and F scores for a single individual under a given instructional set under 3. Secondly, Bem's revised scoring method uses median M and F scores for a given group as cut-offs for establishing androgynous

versus undifferentiated individuals, a procedure which would have led to an artificially inflated group of "undifferentiated" individuals, since both groups tended to be high M and F.

Bem has demonstrated empirical as well as logical independence of the Masculinity and Femininity scores (1974). This independence of scales has been further verified by Gaudreau (1977). For the current study, independence was verified by calculating Pearson correlations on these scales for each of the three instructional sets. The largest correlation between M and F scores was .09, indicating that for my samples, these scales are indeed independent.

Femininity and Masculinity Scores. The mean F and M scores on the BSRI for the asextypical and sextypical samples are given in Table 22. Summary tables for the repeated measures ANOVA on F and M scores are given in Tables 23 and 24 respectively. Looking at these data, a number of interesting trends emerge. First, for both groups, self-descriptions tended to be more feminine under the social situation instructional set than under the job situation instructions ($p < .05$ for instructions main effect). Conversely, self-descriptions tended to be more masculine under the job instructions than the social instructions ($p < .01$).^{*} These complementary differences lend confirmation to the supposition that social situations are femininity-salient while job situations are masculinity-salient. The use of the BSRI with different instructional sets to elicit self-perceived differences in behavior across situations is supported.

^{*}The significance of the differences in M and F scores as a function of instructional set were uniformly confirmed with the Neuman-Keuls test.

Table 22
Mean Femininity and Masculinity Scores on BSRI under Three
Instructional Sets

Participants	Social Situation		Job Situation		Ideal Woman	
	F	M	F	M	F	M
Asextypical ^a	4.78	4.79	4.33	5.13	4.94	5.56
Sextypical ^b	4.89	4.64	4.71	5.07	5.06	5.47

^a_{n=63} ^b_{n=71}

Table 23
Repeated Measures ANOVA of Femininity Scores on BSRI under Three
Instructional Sets (N=134)

Source	Sum of Squares	df	Mean Square	F
Groups	4.21	1	4.21	6.19 [*]
<u>Ss</u> within groups	89.80	132	.68	
Instructions	16.24	2	8.12	85.70 ^{**}
Groups x Instructions	1.54	2	.77	8.13 ^{**}
<u>Ss</u> within groups x Instructions	25.01	264	.09	
Total	136.8	401		

^{*}p< .05 ^{**}p<.01

Table 24

Repeated Measures ANOVA of Masculinity Scores on BSRI under Three
Instructional Sets (N=134)

Source	Sum of Squares	df	Mean Square	F
Groups	1.00	1	1.00	.74
Ss within groups	178.52	132	1.35	
Instructions	42.51	2	21.25	98.88**
Groups x Instructions	.14	2	.07	.32
<u>Ss</u> within groups x Instructions	56.74	264	.21	
Total	278.91	401		

**
p<.01

Second, both asextypical and sextypical groups heavily endorsed both masculine and feminine items in their self-descriptions in both situations. These BSRI data indicate that both groups see themselves as nurturant, sensitive, and expressive, in addition to having the more "masculine" competency traits. The mean scores for the "ideal woman" instructions show that both groups value traits associated with both traditional "masculinity" and "femininity".

Finally, turning to differences between the two samples, and considering just the Femininity scores, sextypical women describe themselves as more feminine in both job and social situations than asextypical women, and they describe their ideal as more feminine (main effect

for groups significant, $p < .05$). On the other hand, when just Masculinity scores are considered, the asextypical women describe themselves as more masculine in both situations and their ideal, but these differences are not significant. In brief, it appears that the asextypical women see themselves as less "feminine" but not necessarily more "masculine" than the sextypical women.

Sex-typing: Androgyny scores. The Androgyny scores lean in the negative-valence, masculine direction for both groups under all instructional sets with only one exception--sextypical women in a social situation describe themselves in a slightly feminine-typed direction (See Table 25). Although both groups tended to endorse feminine items more highly than masculine ones, this tendency was even stronger for the asextypical group. For each instructional set, the asextypical sample was less sex-typed (i.e. more sex-reversed) than the sextypical sample. ANOVA confirmed that the main effect for groups was significant ($p < .05$).

Table 25

Mean Androgyny Scores (F-M) on BSRI under Three Instructional Sets (N=134)

Participants	Social Situation	Job Situation	Ideal Woman
Asextypical ^a	-.01	-.81	-.62
Sextypical ^b	.2521	-.37	-.41

^a_{n=63}

^b_{n=71}

Table 26
Repeated Measures ANOVA of Androgyny Scores (F-M) on BSRI under
Three Instructional Sets

Source	Sum of Squares	df	Mean Square	F
Groups	9.29	1	9.29	4.67 [*]
<u>Ss</u> within groups	262.64	132	1.99	
Instructions	40.38	2	20.19	61.28 ^{**}
Groups x Instructions	.97	2	.49	1.48
<u>Ss</u> within groups x Instructions	86.99	264	.33	
Total	400.27	401		

^{*} p < .05

^{**} p < .01

The main effect for instructions was also significant ($p < .01$) in terms of the Androgyny scores. Both groups tended to rate themselves less in the masculine direction (i.e. more sex-typed) in the social than in the job situation. For both groups, their ideal behavior was reported to be closer to their job than to their social behavior.

Several predictions were made in regard to the BSRI. It was predicted that asextypical women would describe themselves as less sex-typed than the sextypical women on all three BSRI measures, "on the job", "in a social situation with other men and women", and "ideal woman". Finally, it was predicted that both groups would describe themselves

as more masculine in the job situation and more feminine in the social situation, lending validity to the use of situation-specific instructions when administering the BSRI. All of the predictions were confirmed.

Allotment of "Masculine" and "Feminine" Responsibilities at Home.

Do the differences in sex-typing as measured by the BSRI have correlates other than the sextypicality of one's occupation? Data on the allotment of traditionally masculine or feminine household responsibilities provided by most of the women living in coupled or family situations are relevant to this question. Participants were asked to note who took the major responsibility for a number of traditionally feminine and masculine tasks. The results are presented in Table 27. For each of the tasks a 2 x 2 chi square was done, comparing the frequency that the participant reported herself to hold major responsibility versus the frequency that any other response was offered. As can be seen from the table, significant chi squares were obtained on four of the six "feminine" tasks, indicating that the asextypical women were significantly less likely to take major responsibility for most of the "feminine" tasks. No significant differences were found between the samples with respect to the "masculine" tasks.

In brief, the trends evident from these analyses mirror the BSRI finding where the groups differed on Femininity but not Masculinity scores, i.e. the asextypical women perform less of the traditionally female home responsibilities than the sextypical women, whereas the groups do not appear to consistently differ in the degree to which they take responsibility for tasks traditionally in the male domain. The

Table 27

Percentage of Respondents Who Take Major Responsibility for
Traditionally Feminine and Masculine Home Responsibilities

Responsibility	Asextypical	Sextypical	χ^2
"Feminine"			
Food shopping	51.3%	73.0%	3.99*
Food preparation	64.1%	75.7%	.09
Cleaning up after meals	26.3%	54.1%	6.01*
Washing clothes	51.3%	75.7%	4.86*
Sweeping and vacuuming	33.3%	64.9%	7.56**
Child care non-work hours	21.4%	50.0%	3.02
"Masculine"			
Taking out garbage	15.4%	22.2%	.03
Small household Repairs	13.2%	19.4%	.03
Mowing the lawn	17.9%	9.1%	2.16

*
p < .05

**p < .01

net effect of this is that the asextypical women lean toward a more androgynous blend of household responsibilities whereas the sextypical women follow a more sex-typed pattern. Since only 3 of the participants 45 or older were currently married and reported data relevant to this question, the group differences do not appear to be a function of age.

Summary of Personality and Sex Role Findings Relevant to Predictions

Several predictions were made in regard to the personality and sex role data which have been presented. These are reviewed below.

(1) It was predicted that asextypical women would differ from sextypical women in overall personality, as represented by the Cattell 16PF taken as a whole. This prediction was confirmed in a discriminant analysis which yielded a D of 2.06 ($p < .001$). Thus Cattell 16PF personality profiles significantly differentiated the two samples.

(2) It was predicted that the asextypical women would score significantly more extreme scores on six scales found to characterize asextypical women studied by Bachtold and Werner and conceptually related to competence: Submissive/dominant (E), Shy/adventurous (H), Conventional/imaginative (M), Conservative/radical (Q1), Group dependent/resourceful (Q2), Confident/insecure (O). This pattern of differences was not found; the only substantial difference in the predicted direction was for the Submissive/dominant dimension (E). While these scales did not sharply differentiate the two groups from each other, they did tend to differentiate both groups from the "women in general" represented by the norms.

(3) It was predicted that the occupationally asextypical women would describe their "ideal woman" on the BSRI as less sex-typed than the sextypical women. The group differences on Androgyny scores were in the predicted direction and a repeated measures ANOVA indicated a main effect for groups. While the differences were as predicted, neither group described their ideal as highly sex-typed, i.e. both groups described a highly androgynous ideal.

(4) Occupationally asextypical women were predicted to describe themselves as less sex-typed than sextypical women both "on the job" and "in a social situation with other men and women". Again, these predictions were confirmed, with main effects for both groups and instructions for Androgyny scores. In general, self-descriptions under both instructions were highly androgynous rather than sex-typed for both groups.

(5) Finally, it was predicted that both groups would describe themselves as more masculine in the job situation and more feminine in the social situation. This was confirmed. ANOVA results indicated a significant main effect for instructions on Masculinity, Femininity and Androgyny scores. The assumption that these two situations are salient for different sex roles is supported as is the use of the BSRI for eliciting situation-specific differences in self-descriptions.

Chapter 4

DISCUSSION

The data suggest that no one prototypic family background or personality profile relates to either occupational asextypicality or to high academic attainment in women. On the contrary, the findings are richly heterogeneous, and indicate that a variety of family, cultural, and personality constellations may converge to determine a woman's commitment to a particular asextypical career. The data from the present study shed light on some of the factors contributing to high educational achievement, and more importantly, to asextypical career choice among women. This discussion focuses first on some of the trends differentiating both groups of high educated women from women in general, and, in more depth, on the trends that differentiate the occupationally asextypical women from those employed in more traditionally female occupations.

Just as quantification usually fails to adequately portray the complexity of the people represented, so also, a discussion of group trends does not do justice to the individual variability within groups. While I regret the richness lost in such simplification, the present discussion is generally restricted to group trends.

Recruitment: Encounter with the Unexpected

My "clinical impressions" from my interactions with the participants suggested that the personalities of sextypical and asextypical professional women in my study were more similar than distinct. I had expected women to resist participation in my study since I was an

unknown student and participation involved paper-and-pencil personality measures and at least two hours of time. To my surprise, I was enthusiastically received. Women contacted seemed challenged by my desire to study employed women. They cooperated by sending me names of other women and agencies, writing lengthy responses and editorial comments on the questionnaires, and contacting me with questions and/or criticisms of the project. Most important, they completed and returned the materials at a rate second in the literature reviewed only to that of Astin's PhD subjects. In light of the heavy job and family demands of most of the women, and the time and thought required to participate, the level of cooperation was extraordinary. While my persistence no doubt contributed, the personal characteristics of the women themselves I believe played a major role. A commitment to research spurred by their own memories of graduate school, and/or an appreciative response to the recognition implied by the invitation to participate in the present research may have contributed to this result.

While warmly received, I did not get the impression of mere passive cooperation, as one might expect of stereotypically feminine women concerned primarily with meeting the needs of others. Rather, the women appeared to take themselves as well as my invitation most seriously, not hesitating to ask me to clarify points of the procedure or issues of confidentiality. Several were direct in asking feedback at the completion of the study, mentioning disappointment at not having received results from previous studies in which they had engaged. The unanticipated assertive involvement with the investigation extended beyond the final recruits to include many professional women encountered along the way.

More surprising than the inquisitive, enthusiastic, warm, and assertive qualities of the women I encountered was the fact that my impressions were uniform for members of both samples, negating my own stereotypic expectations. The nurses were no more passive and docile than the engineers were dominant and aloof. The more contacts I made, the more I became impressed with the androgynous mixture of warmth and assertiveness shared by these women. As I experienced the dissipation of some of my own stereotypes, the similarities among these high achieving, career-oriented women became more salient than the differences.

Correlates of Academic Achievement: Similarities between
Asextypical and Sextypical Samples

Cattell 16PF

The personality profile data corroborate the impressions gained from personal contact with the participants. A "competency" profile was typical of both asextypical and sextypical women, and while the atypical women obtained more extreme scores on such traits as intelligence, assertiveness, imaginativeness, forthrightness, self-sufficiency and experimenting qualities, these differences were small, and both groups differed markedly from the norms for "women in general" on these competency-related scales.

In 1977, Bachtold drew the following conclusion in regard to the accumulated data from the Bachtold and Werner series,

essential personality elements for women's attainment as a psychologist, scientist, artist, writer, or politician appear to require behavior that shows good mental capacity, and in opposition to traditional sex-role expectations, such traits as assertiveness and low reactivity to threat, together with an inclination to experiment with problems (1977, p. 77).

The present study would suggest that "women's attainment" in such sex-typical fields as nursing and library science is governed by similar personality necessities, and that the core of competency traits as measured by the Cattell relate mainly to high academic attainment, and only secondarily to the sextypicality of one's chosen field.

BSRI

While the Cattell data indicate that both groups are high on such competence factors as assertiveness, self-sufficiency, and intelligence relative to women in general, they do not speak as clearly to the traditionally feminine "warmth and expressiveness" traits as do the BSRI data. On the BSRI, there are strong similarities between the groups which go beyond the Cattell data in allowing a separate evaluation of how the groups describe themselves on independent masculinity and femininity dimensions.

Both groups, under all instructional sets, tended to respond in a high androgynous manner, i.e. showing relatively equal and high endorsement of both Masculine and Feminine items. Both groups see themselves as exhibiting high levels of both "masculinity" and "femininity" in both job and social situations. The data clearly do not suggest that either group of women is more competent or "masculine" than sensitive, nurturant, or "feminine". Neither do they, any more than the Cattell data, suggest that competency traits are restricted to women in asextypical occupations.

According to their descriptions of their "ideal woman", both asextypical and sextypical women strongly value and presumably strive for characteristics associated with both sex roles. This finding is

consistent with Hawley's study (1969). She found career women to have a more flexible and androgynous feminine ideal than less career-oriented women. It appears that members of both groups strive for an integration of characteristics which are at odds with stereotypic feminine role behavior in this culture.

Demographic and Family Background Factors

It is hardly surprising that the asextypical and sextypical samples are similar on characteristics typical of individuals with high academic attainment in the United States. For example, both groups tend to have better educated parents and come from more upwardly mobile families than is typical of the general population (U.S. Bureau of the Census, 1973). Members of both samples tended to come from highly stable families with minimal disruption of family life via death, parental divorce or separation. Both groups were white with resulting easier access to educational and employment opportunities than would be the case for minority Americans. Women in both groups frequently reported parental encouragement toward academic and career goals, and very little negative influence of either parent in regard to their aspirations. Members of both groups tended toward fairly continuous schooling. This, the fact that most women completed college before marrying for the first time, and the lower marriage rate relative to the general population are all consistent with trends for high educated American women (U.S. Bureau of the Census).

Thus, the data indicate that both asextypical and sextypical women in the present samples came from families which can be seen as enriched in terms of factors contributing to academic attainment more typically

valued for men. But what about more traditionally feminine involvements? Most of the women in both groups have been involved in those most traditionally feminine roles of wife and/or mother, suggesting in actual behavior that they are not "traitors" to such commitments. The late age at first marriage, the low marriage rate, and low childbearing vis à vis the general population (U.S. Bureau of the Census) most likely result from the different priorities and time limitations of women who experience a broad range of options and commitments, and who work within an occupational structure ill-designed to accommodate both career and family commitments. The wide variety of family and work responsibilities handled by most of the women, and the obvious pleasure they find in their work, apparent from personal contact and from autobiographical essays, do not conform to the image of women engaging in high occupational achievement as neurotic "masculine protest".

Before summarizing the similarities between these two groups, a comment on an unexpected similarity is in order. Contrary to prediction, the two samples do not differ on the number of parents and grandparents born abroad. The literature reviewed indicated a trend for more frequent foreign background among occupationally atypical women in fields requiring advanced degrees. However none of the studies which found this factor had excluded foreign born women from participation. Thus, the failure to find such a relationship in the current study is probably an artifact of the experimental design which excluded women not born in the United States from participation rather than a disconfirmation of any relationship between foreign background and asextypical occupation among women.

Summary

In brief, the asextypical and sextypical women in the present study were similar on factors which are generally associated with academic attainment. The performance of both groups on the Cattell tends to substantiate the picture of high "masculine" competence in both groups. However, the BSRI data indicate that both groups see themselves as having unusually broad repertoires, flexibly encompassing the positive dimensions of both sex roles. The demographic and family background data indicate that both groups have been "enriched" in factors which facilitate high academic attainment.

Asextypical Development: Enriched or Deviant?

A consideration of several perspectives for conceptualizing sex-typicality of career choice will enlighten the discussion of group differences found in the current study. The most important viewpoint to be presented is that of Almquist and Angrist, for it provides a rubric under which a variety of other conceptualizations may be understood.

In 1970 Almquist and Angrist made an important distinction between "deviance" and "enrichment" hypotheses in a study of the backgrounds of college women planning to enter sextypical or asextypical occupations. The deviance hypothesis suggests that,

the strongly career oriented girl who chooses a masculine occupation is the product of social learning experiences which set her apart from her more conventional age-mates, experiences which lead her to develop a masculine image of herself and her adult role (pp. 242, 243).

According to this view, the unconventional chooser has had difficulties in relation to parents and peers which result in an "unfeminine" dis-

interest in marriage and children and a pathological striving after "masculine" goals.

The authors proposed an alternative point of view which has the positive virtue of emphasizing the availability of varied role models rather than unhealthy deviations from normal personality development. According to this viewpoint, atypical career choice is seen as one healthy outcome of enriching life experiences. From this perspective,

the unconventional chooser is not so much a renegade as she is the product of enriching experiences which lead to a less stereotyped and broader conception of the female role (p. 243).

According to the enrichment hypothesis, it takes unusual family circumstances to foster the androgynous individuation which may manifest itself in atypical occupational choice.

Almquist and Angrist studied the family and personal background correlates of both atypicality and career salience, i.e. the degree to which work is anticipated as an important role in the adult woman's life. The authors found high career salience to be strongly correlated with atypical career choice. In general, their results support the enrichment hypothesis, emphasizing the role of experiences which foster independence, broad sex-roles, and general competence as related to both atypicality and career salience. Compared to sextypical choosers and women of low career salience, atypically-oriented and career salient women tended to have more highly educated and working mothers, to have been exposed to a wider variety of occupational role models, and to have had a greater variety of work experiences before finishing college, all factors which can be seen as either expressions of

already blossoming androgyny or as contributing to broad sex roles where competency traits are well-integrated with feminine identity.

Achievement Motivation

A number of researchers have presented perspectives consistent with the enrichment hypothesis, detailing some of the ways "enriched" family background and social factors may impact on occupational choice. Many assume higher achievement motivation to underly asextypical choice. In a provocative article, Laws (1976) applied Rotter's social learning theory to the problem, and focuses on the motivational aspects of achievement. She notes that achievement behaviors are a function of one's aspirations, based on the expectancy that one is likely to succeed, and on the value one places on the goals to which one aspires. Following this analysis she examines elements in the social and occupational structure which would contribute to a low expectancy of success and ambivalent valuing of male-identified goals by women. Consistent with this model, factors which increase either a woman's expectancy of success or her valuing of "male" goals would tend to increase the likelihood of her aspiring to and achieving in asextypical domains.

Expectancy. Recent research by Burlin speaks to the expectancy dimension of the model described (1976). She found a significant difference between the "real" and "ideal" career aspirations of adolescent women. Asextypical occupations were more frequently mentioned as "ideal" than "real" choices, whereas sextypical occupations were more frequently chosen in terms of their actual plans. The author concludes,

the desire to pursue a broader range of occupations is present in the young women; however, personal and social forces appear to have limited their belief that in real life these occupations could actually be pursued (p. 128).

On a more general level, Lenney's review (1977) indicates that the sex-linkage of a specific task affects the self-confidence of women, who tend to expect themselves to perform less adequately on male-identified tasks.

Value. In terms of the valuing element of the equation, the research of Horner and others on "fear of success" has demonstrated prevalent ambivalence among women in regard to achievement in male domains. Stein and Bailey (1973) in reviewing the literature on achievement motivation in women conclude that women set higher value on performing well in sex-appropriate achievement areas, and that their attainment values in a given sphere predict their subsequent effort and performance.

Applicability of the Model. Several studies tend to validate the use of the social-learning model for a consideration of asextypical career choice. Kriger (1972) sees occupational choices as falling along a continuum from no employment to total work commitment, with women in sextypical fields being more psychologically similar to unemployed women than their asextypical counterparts. She suggests that women in asextypical fields are characterized by higher achievement motivation, a greater willingness to take risks, and less fear of failure than either of the comparison groups. Her results confirmed both higher nAch among the asextypical group and more restrictive childrearing among the homemaker group. In terms of achievement motivation she concludes,

The decision concerning occupational field and level is secondary to the initial decision to enter a career, and is primarily dependent on a girl's level of achievement motivation. Thus, girls with a high need to achieve will tend to enter occupations where competition and demands are high and general acceptance of women is low, i.e. male-dominated occupations;

girls with relatively low levels of nAch will enter occupations in which women have been traditionally accepted, where competition is low; and where conditions are such that they allow the successful combination of a career and homemaker role (p. 430).

Angrist and Almquist's finding of a strong association between career-salience and atypical choice is consistent with the view of asex-typical women as having higher achievement motivation. As Stein and Bailey conclude in their review, "high achievement motivation is characteristic of women who manifest 'masculine' interests by choosing a field of endeavor that departs from traditional feminine pursuits" (p. 352).

Role Conflict. A slightly different perspective that does not necessarily conflict with that which has been outlined, suggests that asex-typical and sextypical women may differ, not so much in terms of their achievement needs as much as in the comfort with which they can express these needs in occupational roles. Choice of a "feminine" occupation may represent a compromise, allowing the expression of achievement needs with less conflict with cultural sex role demands than would be the case with an asextypical choice. Sextypical career choice would both reduce internally generated conflict and minimize externally imposed negative feedback (Stein and Bailey). Consistent with this point of view, Nagely found that "pioneer" working women less frequently projected conflict onto a neutral female stimulus in a projective situation, and more frequently expressed satisfaction and success as a working woman than "traditional" working women. She concluded that "pioneers" had less difficulty integrating their roles as homemaker and worker.

The present study. Trends from the current investigation are suggestive of both higher achievement needs and/or less conflict about

expressing these needs in asextypical domains among the occupationally asextypical women. The atypical women tended to work more hours each week, and were more likely to either hold a second masters degree, be pursuing another advanced degree or at least to have completed coursework beyond the masters or equivalent.

Unpredicted group differences in marital and family status are consistent with the view of sextypical women as having a narrower, more conventional view of their options than members of the asextypical group and with their being less comfortable expressing the achievement needs in "male" domains. The presence of a heavy proportion of single women in the ranks of the 45 or older sextypical group raises the possibility that more of the older sextypical women saw marriage and career in conflicting terms.

Among the ever-married women, the sextypicals were significantly more likely to have children. While having fewer children may put the asextypical women in the minority position from a statistical point of view, it need not imply deviance in the sense of personality maladjustment. On the contrary, asextypical women may be more willing to take the risk of expressing their high competence in achievement areas clearly defined as "male", whereas more sextypical women may be more inhibited, and may well bear children by default, feeling that she must in this way conform to expectations for "feminine" behavior.

The sextypical women were also more likely to take major responsibility for child-care and other traditionally feminine home responsibilities. While it might be argued that "deviant" upbringing has lead them to give up the joys of the feminine role, food preparation and housework

are hardly intrinsically rewarding when added to full work commitments. In brief, the sextypical women more frequently appear to fit the "super-woman" mold, performing all of the functions of the traditional wife/mother role in addition to a career, a means of resolving conflicts between expressing achievement and competence incongruent with traditional "femininity" (Stein and Bailey).

Correlates of Asextypical Career Choice: Differences between Asextypical and Sextypical Samples

While there is a clear tendency for both groups to be similarly "enriched" on dimensions which distinguish them from less educated women, differences between the groups are the central focus of the present investigation. Not all of the expected distinguishing features of occupationally asextypical women washed out when the asextypical group was compared to an equally educated sextypical sample. Keeping in mind some of the explanations for atypical choice which have been presented, the major findings in regard to group differences will be discussed.

Cattell 16PF

The discriminant analysis successfully differentiated the two samples on the Cattell. While both groups scored high on scales related to competence, the asextypical group tended to exceed the sextypical group on these traits. Though the differences were generally small, with heavy overlap of the distributions, the results suggest that while such achievement-facilitating traits may be essential to succeed in any profession, they may be particularly critical for entry into atypical fields.

The major group differences on the Cattell are more consistent with the different role expectations and requirements of sextypical and asex-typical employment than with greater "competence" among the asextypical women. The four scales which contributed most to the discrimination were I, F, E, and H, in that order, followed by A, B, and L. The asex-typical women were most sharply differentiated from the sextypical women by their low scoring on I, the tough versus tender-minded dimension. According to Cattell, Eber, and Tatsuoka, low scorers on I tend to expect little ("rejects illusions"), take responsibility, and be hard to the point of cynicism as compared to "women in general" (p. 93). Bachtold points out that it may be only the "tough-minded" woman who survives graduate school and enters professions where females are at a disadvantage.

The more aloof (A) individual, also more likely to be asextypical, tends to be more socially reserved, precise, distrustful, and preferring to work with objects and ideas rather than people. In contrast, the higher H individual, more typically sextypical, prefers to work with people, and is more genial and socially bold. The pattern of differences on these two scales goes along with the fact that women in sextypical fields more frequently have heavy contact with people relative to women in asextypical employment.

The usual asextypical woman was higher on L, the Trusting/suspicious dimension. The high L person tends to be more on guard to external threat, and to use projection as a major defense, i.e. perceiving anxiety-producing stimuli as coming from the environment rather than as internally produced. Such a perspective may be realistic and adaptive

in professional environments where subtle and not-so-subtle forms of discrimination abound.

The two factors, B and E, intelligence and assertiveness are higher among the asextypical women. As was pointed out in the earlier literature review, women in atypical occupations tend to have even more of the "right" traits than men in comparable occupations. Unusual degrees of these traits may facilitate overcoming obstacles to education and employment in atypical fields. In terms of assertiveness (E), Cattell et al have noted that "among occupations, it is most associated with those requiring boldness and courage" (p. 86).¹

In terms of the most salient differences between the samples on the Cattell, Bachtold's summary of her research is equally well-suited to my own, "Each group of women is set apart by those personality characteristics which appear to be adaptive to their professional life styles and role expectation" (pp. 77, 78).

BSRI

The use of the BSRI in the present study was intended, not only to elicit group differences, but to experiment with the use of situation-specific instructions. Another intent was to assess whether the finding of an association between low sex-typing and willingness to engage in

¹Differences in F are not particularly noteworthy in terms of the sex-typicality dimension, since older persons typically score lower and the sextypical group had a higher proportion of older women. When the data were broken down by age, this decrease in F as a function of age was confirmed for this sample.

the even more extremely asextypical behavior of participation in male-dominated fields describe themselves as at even greater variance with the sex-linked feminine role.

The similarly high endorsement of both masculine and feminine items by both samples has been discussed. Both groups showed high endorsement of the masculine dimension, parallel to their similar "competency" profiles on the Cattell. While the atypical women showed heavier endorsement of masculine items under all instructional sets, group differences were not great enough to give a significant main effect. This is congruent with the Cattell data, where the more extreme scores on competency-related scales by the asextypical women were not large enough to be the most noteworthy differences.

Group differences on the BSRI resulted from differential endorsement of feminine rather than masculine items. While both groups strongly endorsed feminine items, asextypical women did so to a significantly lesser degree, resulting in mean Androgyny scores which were significantly less sex-typed, i.e. more in the sex-reversed direction, for the asextypical sample.

The fact that both groups were highly androgynous both in their self-descriptions across the two situations and in their descriptions of their "ideal woman" does not rule out the possibility that the sex-typical women may be subject to greater role conflict. Whereas the job and social situation instructions may tend to elicit more masculine or feminine descriptors respectively, neither setting would be clearly perceived as "inappropriate" for either sex. The groups may differ in the degree to which they can comfortably engage in roles when they

are more explicitly defined as male-appropriate, as would be the case with such roles as being an engineer or pharmacist, for example. The asextypical women may be more willing to express their competency-related traits in any occupational sphere.

Demographic and Family Background Factors

There is little evidence from the demographic and family background data that asextypical women represent the warping of achievement drives toward peculiarly "masculine" goals. Rather, the atypical women appear to have even more of those family background and personality factors related to the development of competency and achievement than even the sextypical group. For example, the parents of asextypical women tended to be even better educated, the fathers and mothers more frequently professionally employed, the mothers more frequently in the work force, than those of the sextypical group.

The major predicted group differences emerging from the questionnaire were three, (1) the importance of different types of models in the development of asextypical career choice, as mentioned in autobiographical essays, (2) the higher rate of maternal employment, and (3) the greater frequency of firstborn status among the asextypical women. All of these differences were predicted on the basis of the literature review, and can be seen as contributing to a more enriched environment for the asextypical women. The asextypical women more frequently experienced situations which would lead them to value endeavors "unfeminine" according to cultural definition, to expect themselves to be able to engage effectively in a wide range of activities, and to be more comfortable engaging in "deviant" activities than their sextypical counterparts. Before discussing these major findings and their impli-

cations on this enrichment point of view, differences in age which were not predicted will be discussed.

Age. Whereas the asextypical women tended to be more uniformly young, more than a quarter of the sextypical group was between 45 and 50 years of age. Most likely this group differences reflects the fact that the sextypical occupations have been open to women for many years, while the social climate has only recently become more favorable for women entering atypical fields. Discriminatory admissions policies for graduate programs in "male" fields have only recently been mitigated by Affirmative Action policies.

The younger age of the asextypical women has interesting implications. The asextypical women more frequently went through college and graduate school during the 60s and 70s when exposure to the ideology of feminism could hardly have been avoided. Aside from the direct exposure of the media, many of the asextypical women encountered faculty and friends who actively encouraged and/or persuaded them toward "masculine" academic and employment endeavors. The sextypical women were those whose educational maturation more frequently occurred during the 1950s era of the "feminine mystique" when homemaking was encouraged over career and working women were "homogenized" into a few narrow paths.

Following the social-learning model, the changing sociocultural milieu can be seen as affecting both a woman's expectancy of being able to achieve and the value she places on a traditionally male occupation. To the extent that society has become less punitive toward role-innovators and has changed so as to increase the confidence of women that

indeed they can realize their "ideal" occupational aspirations, the members of the asextypical sample have more frequently benefited from such enrichment.

In light of the age discrepancy between the two groups, combined with their shared "competency profiles" on the Cattell, high androgyny on the BSRI, and background facilitating high achievement, it seems likely that many of the sextypical women might have gone into asextypical fields had the opportunities been open to them and had they been encouraged to explore them during their high school and college years.¹

Male influences. One of the predictions confirmed in this study by the information obtained from the autobiographical essays was that different models were salient for sextypical and asextypical women. The probability that these data were affected by biases inherent in the retrospective method is clear. Asextypical women, for example, may more frequently mention men because of their present consciousness of working in "male" fields. Nevertheless, if one takes the essay data at face value, it appears that the sextypical women more frequently experienced the positive influence of women -- non-parental female relatives and teachers, models outside the nuclear family; whereas the asextypical

¹A comparison of personality and sex role attributes of the older sextypical women compared to the younger members of each group would be enlightening. If indeed the older sextypical women were more similar to young asextypical women, one would expect to find greater discrepancies on the BSRI and Cattell in comparing sextypical and asextypical women in the same (younger) age cohort.

women more frequently mention the positive influence of men -- their fathers, male teachers, boyfriends and husbands, in general, people with whom they are more intimately involved.

As a perusal of the essay data indicates, the "positive influence" of male models is highly variable. There are several possible explanations for the differential role of males in the two groups. First, the factor of exposure may be important. While both groups share a strong orientation toward competence and achievement, the sextypical women had fewer models of either work or professional involvement close to home. The aseptypical women more frequently reported greater involvements with their fathers and more frequently had professional fathers and/or working mothers. Thus they more frequently had access to information regarding at least one professional career. By default, the sextypical women may have needed to go beyond the nuclear family for role models appropriate to their high achievement needs, and these, by virtue of the occupational structure, would be more likely to be occupationally sextypical. Also by default, the sextypical women may have had to rely more heavily on books and the media which would generally tend to narrow rather than broaden their occupational horizons. (Women on Words and Images, 1972; Hoffman, 1977).

Greater involvement with a supportive father might contribute to an earlier experimentation with aseptypical role activities. Aseptypical women report, for example, working with science projects, erector sets, and math problems with fathers' support at an early age. These early experiences allow a young girl to assess the "goodness of fit" between her own skills and proclivities and those appropriate to aseptypical

fields. A girl raised in such a situation would be more likely to value male activities and to feel confident in her abilities to competently engage in them, in comparison to her sextypical counterpart.

Finally, strong support from father, male teachers, husbands, and boyfriends may provide women with the assurance that they can be highly competent and achievement-oriented in "masculine" endeavors without jeopardizing more heterosexual goals. Early experiences with a supportive father may "inoculate" these women against later pressures to be sex-appropriate, and predispose them to seek males sympathetic and unthreatened by their androgyny.

The trend for aseptypical women to have more important male models tends to be substantiated by several less subjective sources of data than the essays. The fathers of aseptypical women tended to be more frequently professionally employed. About one-fifth of the aseptypical women as compared to less than a tenth of the sextypical group had fathers employed in the professions. While a minority of even the aseptypical sample had professional fathers, references to fathers' professional roles were sufficiently frequent in the essays to suggest that, when present, a professional father is an important influence.

The importance of male influences is further suggested by the finding, contrary to prediction, that the aseptypical women were significantly more likely than the sextypical women to have brothers. The prediction that they would have fewer was based on weak empirical ground, specifically on the results of two studies. Helson found few of the PhD mathematicians in her study to have brothers, and an insignificant trend for the more creative ones to have fewer brothers than

the less creative ones.¹ In the Hennig study of women business executives, none of the women had brothers, but the tendency for the first-born to inherit the family business was probably the more important factor. In this investigation, the presence of male siblings correlates positively with asextypical career choice. This may merely reflect sample bias. On the other hand, brothers may orient themselves to "masculine" endeavors and serve as significant models and/or sources of encouragement, or have a more subtle influence by evoking sibling rivalry and eliciting the achievement values and behaviors of their parents.

Maternal employment. The typical mother of the asextypical woman was likely to have been employed prior to the advent of children, and more frequently went back to work as family responsibilities lessened. With the higher professionalism among asextypical fathers, it seems doubtful that the mothers of asextypical women would be more motivated to return to work for financial reasons only. Rather, it seems that they valued employment and were thus more likely to model both actual participation in the work force and values consonant with career achievement for women. Several women make mention of the role of their mother's employment. For example,

Mother, who worked from the time I was 8 was the greatest influence on my decision on career. I always had her as a role model for wanting a career rather than being a "Mommy".

My mother has always worked. This influenced me to expect a career. As early as 6 years of age, I remember helping mother when she worked at home.

¹Of the four mathematicians in the present study, three had brothers.

An economist writes,

My mother was a university professor (fine arts) and as a widow was self-sufficient, so it was always a given to be self-sufficient and to aspire to a professional career.

The current finding of higher maternal employment among asextypical women is consistent with the literature reviewed earlier, and suggests that maternal employment is not merely a determinant of academic achievement or participation in the work force. This factor may affect the atypicality of career choice in several ways. Vogel, Broverman, Broverman, Clarkson, and Rosenkrantz (1970) note that maternal employment status may be a crucial factor in determining the degree to which parental sex roles are differentiated by the young child. According to this line of thinking, when a mother is employed, there is not a clearly modeled association between work and the masculine role. And the division of labor within the home is likely to be affected (Weil, 1961).¹ Thus a child whose parents both work outside the home will experience less parental sex role differentiation and will consequently develop broader conceptualizations of both masculine and feminine roles. Numerous studies support his notion. Hartley (1960) found that elementary school children with working mothers saw more similarity between the activities of men and women. King, McIntyre, and Axelson (1968) found that 9th graders with working mothers perceived women's careers as less

¹Data from the current study, however, suggests that the division of labor may be differentially affected as a function of the sextypicality of a woman's occupational role.

threatening to the marital relationship. Of those with employed mothers, the more father participated in household tasks, the more accepting their children were of maternal employment. Altman and Grossman (1977) in a study of college age women, found that daughters of working mothers had broader sex role concepts and more frequently planned to work than their peers whose mothers had not worked outside the home. In her review of the literature on the effects of maternal employment, Hoffman writes,

the data indicate that maternal employment is associated with less traditional sex role concepts, more approval of maternal employment, and a higher evaluation of female competence . . . There is some support for the idea that daughters of working mothers are more independent because of modeling their more independent mothers. Evidence also suggests that the daughters of working mothers have higher achievement aspirations. (p. 300)

Having a mother who is or has been competently involved in the work world appears to contribute not only to an acceptance of work as congruent with the female role, but also to the perception of even "men's work" as appropriate for women. And the early expectation of career fostered by the presence of a working mother may be particularly important for asextypical fields where early preparation in math and the sciences is often facilitative.

Sibling status. The high prevalence of firstborn children among high achievers is well documented (Rosenberg and Sutton-Smith; Matarazzo, 1972). In the current study, occupationally asextypical women were even more frequently firstborn than equally highly educated sextypical women. Sibling status may contribute to asextypical career choice indirectly by fostering high levels of achievement motivation and/or intelligence.

How might sibling status contribute to the development of competency and achievement behaviors? In a culture where most parents want the first child to be male (Hoffman, 1977), when the first child is female, parental needs for an achieving child may overcome more sex-typed attitudes. The experience of playing alone, with minimal sibling pressure and competition may give youngsters a head start in the development of autonomy, initiative, and confidence in their ability to function well on their own, the precursors of the "rebellious independence" characteristic of adult asextypical women.

Another possible contribution of birth order is in terms of the development of greater intelligence among firstborn children. Exceptional intelligence may facilitate access to or pursuit of male professions, and appears to be more common among firstborn children (Zajonc, 1975; Matarazzo). While factors related to firstborn status would be likely to foster high achievement generally, to the extent that women in asextypical fields need even higher levels of independence, self-confidence, and intelligence to move against the societal grain, one would expect firstborn status to be more prevalent in this group, as is the trend.

Summary. While both the asextypical and sextypical samples share many of the characteristics of the highly educated population from which they were drawn, the pattern of differences between the two groups suggests that indeed, there is an asextypicality dimension above and beyond a dimension representing high academic achievement and participation in the work force. The pattern of differences is consistent with the "enrichment" hypothesis proposed by Almquist and Angrist. Relative to

their sextypical counterparts, the asextypical women have more frequently been exposed to professionally employed fathers, employed mothers and more highly educated mothers and fathers. In addition they are more frequently firstborn and as a group tend to be younger than the sextypical women. These differences have been discussed in terms of the greater exposure of the asextypical women to a cultural environment "enriched" by the impact of feminist ideology during their college and graduate school years. The role of firstborn status and working mothers in the development of the unusual independence facilitating occupational innovation was also mentioned, as well as the impact of persons in the immediate social environment who modeled and/or encouraged an integration of competence with being female. While the sextypical women shared many factors contributing to academic achievement, both family background and essay data suggest that they less frequently had salient professional models in their families, that they were more frequently influenced by women outside the nuclear family, and perhaps by default by media portrayals of "appropriate" feminine occupational behavior, and that they tend to be more conventional than the women in the asextypical sample.

Chapter V

CONCLUSION

The major purposes of the present investigation are: to demonstrate that there are correlates of asextypical career choice above and beyond those related to high academic achievement, and to assess the relationship of sex-typing on the BSRI to non-laboratory cross-sex behavior, experimenting with the use of situation-specific instructions on the BSRI in the process.

Data from the present investigation indicate that the sextypicality of one's career is an important dimension which goes beyond mere academic attainment. In support of this contention, major differences were found distinguishing occupationally asextypical women from equally highly educated sextypical women. Several demographic and family background variables significantly differentiated the two groups. On the whole, asextypical women tended to be younger, consistent with the enriching impact of the feminist movement. As predicted, the asextypical women were more frequently firstborn, more frequently had mothers who were or had been employed, and tended to mention men, especially fathers, as having positively influenced their career development.

The asextypical women were significantly different from their sextypical counterparts on the Cattell 16PF and on the BSRI. Although both groups tended to have "competency" profiles on the Cattell, with the atypical women showing the more extreme scores, the major group differences are more accurately conceptualized, not in terms of competency-related traits, but in terms of the different role expectations and behaviors appropriate to asextypical and sextypical employment.

On the BSRI, the sextypical group tended to endorse feminine items significantly more than the aseptypical group, with resulting main effects for groups on Femininity and Androgyny scores. The sextypical women consistently rated themselves and their "ideal" in a more sex-typed direction. As on the Cattell, however, the aseptypical women tended to score higher on the competency-related Masculinity items than their sextypical counterparts, although the differences did not reach statistical significance.

In general, the members of the aseptypical group seem to have more frequently been exposed to parental models and values which do not enforce a division between femininity and occupational competence, to a cultural milieu more supportive to female innovation, to early experiences contributing to higher valuing of "masculine" activities and to high expectations of being able to succeed in such activities. Although the differences are sometimes small, they consistently show trends favoring greater achievement orientation and integration of competence with the female role among the aseptypical women, and a more conventional stance and less "enriched" background among women in the sextypical group. While both groups of women tend to exhibit and aspire to an androgynous mixture of competence and warmth and expressive traits, the aseptypical women tend to demonstrate greater comfort expressing their achievement needs in clearly identified "male" domains.

As regards the use of the BSRI in the current study, the results support Bem's laboratory finding of an association between low sex-typing and willingness to engage in cross-sex behavior. Both groups

were involved in asextypical achievement by virtue of having attained the masters degree or equivalent. Consistent with their commitment to academic attainment more consonant with societal expectations for men, and at odds with the feminine stereotype, both groups describe themselves as highly androgynous under both job and social instructional sets. Women who share demographic and family background characteristics which foster asextypically high academic achievement exhibit and aspire to an androgynous mixture of competence and nurturance. Those women engaged in the asextypical fields are doubly involved in cross-sex behaviors, and, as expected, gave self-descriptions on the BSRI which were at even greater odds with feminine sex-typing.

The use of the BSRI with situation-specific instructions is supported in the present study. Both groups endorsed more feminine items in their self-descriptions in the social situation and more masculine items in the job situation, lending support to the supposition that the social situation is more salient for feminine role behavior while the job situation is more salient for masculine role behavior. The main effect for Instructions was significant for Masculinity, Femininity, and Androgyny scores, lending firm support to the sensitivity of the BSRI for eliciting situation-specific differences in self-description. The finding that situational set can so strongly influence scoring on the BSRI raises important questions in regard to the prevalent use of the instrument with general self-description instructions. It is most difficult for a subject to rate herself on the adjectives on the BSRI without inferring a situational set when none is presented. This may result in an additional source of variability which could be controlled somewhat

by the introduction of the situation-specific instructions, a possibility clearly worthy of further study.

A feminist economist, Barbara Bergmann, was recently quoted as saying, "Breaking down occupational segregation is the largest single problem, the key to equal woman's rights" ("Women at Work", p. 70). High academic achievement and expressions of competence in other than traditionally feminine spheres are still largely male prerogatives. The high androgyny and exceptional competence of both the asextypical and sextypical groups in the present study suggest that socialization in the "feminine" mold of high nurturance and low competence may actually work against academic attainment in any field, tending to restrict women's achievements in even traditionally female occupational domains. In a society which cultivated the unique competence and nurturance capabilities of each person, regardless of gender, there would be a much broader representation of women across occupational categories. While the economic, social, and legal supports of occupational segregation must be confronted directly, the picture is likely to change only with radical changes in sex role socialization.

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APPENDIX A

COVER LETTER, BIOGRAPHICAL QUESTIONNAIRE, BSRI

UNIVERSITY OF RHODE ISLAND
KINGSTON, R. I. 02881

Department of Psychology

I would like to thank you for agreeing to participate in my research. As part of my doctoral dissertation in psychology at the University of Rhode Island I am investigating a variety of background and personality characteristics of women who are employed in different occupational categories and who have received specialized training beyond the bachelor's degree. As you may know, women who meet both of these criteria are few and far between in the Rhode Island area and I am therefore particularly grateful for your willingness to give some time to my project. I and my doctoral committee are enthusiastic about the potential contribution this research will make and I believe your time will be well spent. As soon as I have analyzed the results of this study I will share with each of you a more detailed account of the purposes, findings, and implications of my research.

Before filling out the enclosed materials, please read the following directions carefully. You will need about two hours to complete all of the materials. It is important that you complete the materials in the order they are presented to you. Please work carefully and thoughtfully, without returning to look at or change previous answers. You may want to take more than one sitting to complete these materials. This is fine as long as you finish the section you are working on before taking a break and do not return to sections already completed. If any of your friends or colleagues are also participating in the study, please do not discuss any of the enclosed materials until you have both completed and returned them.

You may notice that there is no identification requested in the enclosed materials. Do not sign them so that your anonymity can be guaranteed. Please complete the materials as soon as possible and return all of the stapled materials plus the green test booklet to me using the stamped manila envelope. The enclosed postcard is to be signed and returned separately so that I will know that your materials have been returned.

If you have questions at any time don't hesitate to call me either at my home (401-733-9519) or my office at the university (401-792-5986).

I hope you enjoy participating in this important study. I look forward to sharing the results of my research with you when the project is complete. Thank you again for your cooperation.

Sincerely,

Jeanne Lemkau

BIOGRAPHICAL QUESTIONNAIRE

Part I. Please take a few minutes to remember back as far as you can to your childhood and adolescence. List below the experiences/people/ influences which you think were significantly related to your present career choice. If there were major turning points in your orientation towards a career, please include these in your list, describing the nature of each turning point and your age when it occurred. (When you mention people in your list, please be specific about their relationship to you, their occupation, sex, etc. without giving names.)

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10 _____

BIOGRAPHICAL QUESTIONNAIRE

Part II In answering the following questions, please feel free to clarify any of your responses by making notes in the margins.

1. Your present occupation _____
Please describe briefly the nature of your job responsibilities.

2. What percentage of your employment time is devoted to executive or administrative responsibilities? (Circle one.)
- a. 0-20%
 - b. 20-40%
 - c. 40-60%
 - d. 60-80%
 - e. 80-100%
3. How many years have you been employed in the general occupational category specified in #1 (Circle one.)
- a. Less than one year
 - b. 1-5 years
 - c. 5-10 years
 - d. 10-15 years
 - e. 15 years or more
4. Approximately how much of your time is devoted to the occupation specified in #1 (Circle one.)
- a. Less than 10 hours per week
 - b. 10-20 hours per week
 - c. 20-30 hours per week
 - d. 30-40 hours per week
 - c. 40 or more hours per week

5. What is your annual income from the occupation specified in # 1? (Circle one)

- a. Less than \$5000
- b. \$5000-\$9000
- c. \$9000-\$13000
- d. \$13000-\$17000

6. Your present age_____

7. Education:

Undergraduate college from which degree was earned

Major_____

Degree earned_____Year_____

Graduate school_____

Major_____

Degree earned_____Year_____

Other graduate school_____

Major_____

Degree earned_____Year_____

Are you presently working on a degree?_____

If yes, explain_____

8. Are you (Circle all that apply.)_____

- a. Single
- b. Married
- c. Widowed
- d. Divorced
- e. Separated
- f. Remarried
- g. "Living with someone"

9. If married, divorced, separated, or widowed, when did you first marry? (Circle one.)
- a. Before college
 - b. During college
 - c. After college but before graduate school
 - d. During graduate school
 - e. Since completing graduate training
10. If you are or have been married, how old were you when you first got married?

11. If remarried, when did you remarry?
- a. Before college
 - b. During college
 - c. After college but before graduate school
 - d. During graduate school
 - e. Since completing graduate training
12. If remarried, how old were you when you remarried? _____
13. If married, what is the occupation of your husband? _____

14. If married, what is your husband's annual income from the occupation specified in # 13?
- a. Less than \$5000
 - b. \$5000-\$9000
 - c. \$9000-\$13000
 - d. \$13000-\$17000
 - e. Over \$17000
15. In what religion were you raised?
- a. Protestant
 - b. Jewish
 - c. Roman Catholic

- d. Other (Please specify _____)
- e. None

16. What religion do you currently practice?

- a. Protestant
- b. Jewish
- c. Roman Catholic
- d. Other (Please specify _____)
- e. None

17. Please indicate the highest educational level completed by each of your parents. (Circle one each)

- MOTHER
- a. Grammar school or less
 - b. Some high school
 - c. High school graduate
 - d. Some college
 - e. College graduate (Specify major _____)
 - f. Some graduate or professional training
(Specify area _____)
 - g. Graduate or professional degree
(Specify area _____)

- FATHER
- a. Grammar school or less
 - b. Some high school
 - c. High school graduate
 - d. Some college
 - e. College graduate (Specify major _____)
 - f. Some graduate or professional training
(Specify area _____)
 - g. Graduate or professional degree
(Specify area _____)

18. With whom did you live while you were growing up? (Circle all that apply).
- a. Mother
 - b. Father
 - c. Step-mother
 - d. Step-father
 - e. Brothers and sisters
 - f. Other (Please specify _____)
19. Please describe any circumstances such as parental separation, divorce, or deaths in the family which altered your living situation as you were growing up. Specify the nature of the change, your age when any such changes occurred, and with whom you lived during all periods before you turned 18.
- _____
- _____
- _____
- _____
- _____
- _____
20. Indicate the economic level which best describes that of your family while you were growing up.
- a. Lower
 - b. Lower middle
 - c. Average
 - d. Upper middle
 - e. Upper
21. How many brothers and sisters do you have? (Circle appropriate numbers).
Older brothers	0	1	2	3	4+
Younger brothers	0	1	2	3	4+
Older sisters	0	1	2	3	4+
Younger sisters	0	1	2	3	4+

22. In what country were you born? _____
23. How many of your parents and grandparents were born outside the United States? (Circle appropriate number.)
- Parents 0 1 2 3 4
- Grandparents 0 1 2 3 4 5 6
24. What is your racial background?
- Negro
 - Oriental
 - Caucasian
 - Other (Please specify _____)
25. Please indicate the major occupation of your father during each of the following time periods.
- Before your birth _____
 - Between your birth and the time you were 6 years old

 - When you were 7 to 12 _____
 - When you were 13 to 18 _____
26. Has your mother been employed outside the home since her marriage?
- Yes
 - No
27. If your mother has been employed, please check below whether her employment was full or part time for each time period

	Part time	Full time
Before you were born		
Between your birth and 6		
When you were 7 to 12		
When you were 13 to 18		

28. If your mother has been employed, please indicate her major occupation during each of the following time periods.
- a. Before your birth _____
 - b. Between your birth and 6 _____
 - c. When you were 7 to 12 _____
 - d. When you were 13 to 18 _____
29. How many children do you have?
- a. None
 - b. One
 - c. Two
 - d. Three
 - e. Four or more
30. List the ages of your children. _____
31. Did you take time out from employment outside the home to raise your children?
- a. Yes
 - b. No
32. If you took time off, what was the total amount of time you were not employed due to your commitment to raising your children?
- a. Less than one year
 - b. 1 to 3 years
 - c. 3 to 5 years
 - d. 5 years or more (Please specify _____)
34. If you are married, who in your family takes major responsibility for each of the following? (Check appropriate column for each.)

	You	Spouse	Other (Specify)
a. Food shopping			
b. Preparing meals			
c. Cleaning up after meals			

	You	Spouse	Other(Specify)
d. Washing clothes			
e. Sweeping and vacuuming			
f. Taking out garbage			
g. Small household repairs			
h. Paying the bills			
i. Gardening			
j. Mowing the lawn			

34. If you have children, who takes major responsibility for each of the following (Check appropriate column for each.)

	You	Spouse	Other(Specify)
a. Supervising or taking care of children during non-work hours			
b. Talking to children's teachers			
c. Taking children to doctor or dentist			

35. If there are any unusual feature of your family background which have not been mentioned, or if there is any additional information you would like to add to clarify any of your responses, please feel free to respond on the back of this page.

BSRI¹

1 /	2 /	3 /	4 /	5 /	6 /	7 /
Never or almost never true	Usually not true	Sometimes but infre- quently true	Occasion- ally true	Often true	Usually true	Always or al- most always true
Self reliant _____		Forceful _____		Conceited _____		Does not use harsh language _____
Yielding _____		Feminine _____		Dominant _____		
Helpful _____		Reliable _____		Soft-spoken _____		Unsystem- atic _____
Defends own beliefs _____		Analytical _____		Likable _____		Competi- tive _____
Cheerful _____		Sympathetic _____		Masculine _____		Loves child- ren _____
Moody _____		Jealous _____		Warm _____		
Independent _____		Has leadership abilities _____		Solemn _____		Tactful _____
Shy _____		Sensitive to the needs of others _____		Willing to take stand _____		Ambi- tious _____
Conscientious _____				Tender _____		Gentle _____
Athletic _____		Truthful _____		Friendly _____		Conven- tional _____
Affectionate _____		Willing to take risks _____		Aggressive _____		
Theatrical _____		Under- standing _____		Gullible _____		
Assertive _____		Secretive _____		Ineffi- cient _____		
Flatterable _____				Acts as a leader _____		
Happy _____		Makes decisions easily _____				
Strong person- ality _____		Compassion- ate _____		Childlike _____		
Loyal _____		Sincere _____		Adaptable _____		
Unpredictable _____				Individualis- tic _____		

¹Specific instructional sets for the three BSRI's administered to each participant are given in the text, page 44.

APPENDIX B

SUPPLEMENTARY TABLES

Table 1

Summary of Agencies, Institutions, and Industries from Which
Participants Were Recruited

Occupational Classification	Agency, Institution, or Industry	Location
Asextypical Accountants	Bird and Son	M
	Arthur Young and Company	M
	Peat, Marwick, Mitchell Company	M
	Foxboro Company	M
	Providence and Worcester Company	RI
	R.I. Division of Taxation	RI
Architects	R.I. School of Design	RI
	Bradford Everett Landscape Company	RI
	The Architects' Collaborative	M
	Goody and Clancy Association, Inc.	M
	Wallace, Floyd, Ellenzeig, and Moore Inc.	M
Chemists	U.R.I. Chemistry Department	RI
	R.I.J.C. Chemistry Department	RI
	Arthur D. Little	M
	Polaroid Research and Development Div.	M
	U.R.I. Graduate School of Oceanography	RI
Computer Scientists	Mitre Corporation	M
	Bolt, Branek and Neuman Inc.	M
	Raytheon	RI
Economists	Arthur D. Little	M
Engineers	Camp, Dresser, and McKee	M
	Cardiodata	M
	Polaroid Product Engineering Div.	M
	Polaroid Research and Development Div.	M
	Digital Computer Special Systems Div.	M
	Arthur D. Little	M
Financeers	Mass. Bay Transportation Authority	M
	Colonial Management Association, Inc.	M
Geographer	Environmental Protection Agency	RI
Managers	Polaroid Research and Development Div.	M
	Mitre Corporation	M
	Digital Central Engineering Div.	M

Table 1 (Continued)

Occupational Classification	Agency, Institution, or Industry	Location
Marine Scientists	U.R.I. Graduate School of Oceanography	RI
	N.O.A.A.	RI
Marketing	Colonial Management Association, Inc.	M
	Arthur D. Little	M
	Honeywell Information Systems Systems Planning Div.	M
Mathematicians	R.I.J.C. Mathematics Department	RI
	R.I.C. Mathematics Department	RI
Pharmacists	R.I. Hospital	RI
	Miriam Hospital	RI
	Mt. St. Joseph's Hospital	RI
	Park School Pharmacy	RI
Physicists	R.I.J.C. Physics Department	RI
Planners	R.I. City Planning	RI
	R.I. Statewide Planning	RI
	Boston Redevelopment Authority	M
School administration	High School Principals Rhode Island	RI
	R.I.S.D. Admissions Office	RI
Sociology teachers	Middlesex Jr. College	M
	Fisher Jr. College	M
Miscellaneous	Boston Redevelopment Authority	M
	Arthur D. Little	M
	Office of the Mayor of Boston	M
<u>Sextypical</u>		
Home economists	Mass. Cooperative Extension Service	M
	U.R.I. Departments of Home Economics, Cooperative Extension, Nursing	RI
	R.I. Hospital Nutrition Clinic	RI
	New England Dairy Council (Mass.)	M
	New England Dairy Council (R.I.)	RI
	R.I. State Health Department	RI
Librarians	U.R.I. University Libraries	RI
	R.I.C. Library	RI
	Cranston Public Libraries	RI
	Kingston Free Library	RI
	Richmond Elementary School Library	RI
	Mitre Corporation	M
	Needham Public Library	M
	Dorchester Public Library (Adams St.)	M

Table 1 (Continued)

Occupational Classification	Agency, Institution, or Industry	Location
Nurses	U.R.I. Department of Nursing	RI
	R.I. Community Mental Health Assoc.	RI
	Kent County Hospital	RI
	Rhode Island Hospital	RI
	Butler Hospital	RI
	Human Resource Institute	M
Speech Pathologists	R.I. Hospital	RI
	Sargent Rehabilitation Center	RI
	Newton/Brookline Collaborative for Handicapped Children	M
Teachers	Richmond Elementary School	RI
	Buckingham School	M
	Charlestown Elementary	RI
	South Road Elementary School	RI
	Infants and Other People	M
	Harvard Yard Child Care	M
	Univ. of Mass. Day Care (Harbour)	M
	Ellis Memorial Center Day Care	M

Table 2

Number of Recruits and Percentage Response for Each Occupational
Classification

Occupational Classification	Number of Recruits	Percentage Response
<u>Asextypical</u>		
Accounting	8	75.0%
Architecture	9	66.7%
Chemistry	7	100.0%
Computer Science	4	75.0%
Economics	3	100.0%
Engineering	8	100.0%
Finance	2	100.0%
Geography	1	100.0%
Management	4	75.0%
Marine Science	4	75.0%
Marketing	4	25.0%
Mathematics	4	100.0%
Pharmacy	6	100.0%
Physics	1	0.0%
Planning	6	83.3%
School Administration	2	100.0%
Sociology Teaching	4	50.0%
Miscellaneous	3	66.7%
<u>Sextypical</u>		
Home Economics	23	78.3%
Library Science	21	85.7%

Occupational Classification	Number of Recruits	Percentage Response
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Nursing	21	90.5%
Speech Pathology	6	66.67%
Teaching	15	80.0%

Table 3

Educational Status of Asextypical and Sextypical Participants

Participants	Masters or Equivalent	Holding Second Master or Pursuing Additional Degree	Coursework only Beyond Masters ^c
Asextypical ^a	54.7%	18.8%	26.6%
Sextypical ^b	63.7%	15.9%	20.3%

^an=64^bn=69

^cThese individuals were not actively pursuing degrees nor did they hold more than the single masters or equivalent at the time of the study.

Table 4
Annual Salary of Partners (N=74)

Participants	\$5000	\$5000-9000	\$9000-13000	\$13000-17000	\$17000
Asextypical ^a	2.9%	2.9%	11.4%	31.4%	51.4%
Sextypical ^b	7.7%	2.6%	15.4%	12.8%	61.5%

a
n=35

b
n=39

Table 5
Reported Socio-economic Status of Parental Home

Participants	Lower	Lower-Middle	Average	Upper Middle	Upper
Asextypical ^a	0.0%	21.9%	51.6%	25.0%	1.6%
Sextypical ^b	1.4%	21.1%	50.7%	26.8%	0.0%

a
n=64

b
n=71

Table 6
Highest Education Completed by Fathers

Participants	Did Not Finish High School	High School Graduate	Some College	College Graduate or Some Graduate Work	Graduate or Professional Degree
Asextypical ^a	15.7%	23.4%	10.9%	25.0%	25%
Sextypical ^b	18.2%	16.9%	15.5%	26.7%	12.7%

a
n=64

b
n=71

Table 7
Highest Education Completed by Mothers

Participants	Did Not Finish High School	High School Graduate	Some College	College Graduate or Some Graduate Work	Graduate or Professional Degree
Asextypical ^a	12.5%	29.7%	10.9%	37.5%	9.4
Sextypical ^b	17.0%	35.2%	12.7%	31.0%	4.2

a
n=64

b
n=71

Table 8

Type of Maternal Employment from Birth Through 18

Participant	Professional (MD, PhD, DDS, or JD)	Other Employment	Home-Maker
Asextypical ^a	3.25%	58.06%	38.71%
Sextypical ^b	0.0%	50.0%	50.0%

^a
n=62

^b
n=70

Table 9

Type of Paternal Employment from Birth Through 18

Participant	Professional (MD, PhD, DDS, or JD)	Other Employment
Asextypical ^a	19.35%	80.65%
Sextypical ^b	8.51%	91.49%

^a
n=62

^b
n=70

APPENDIX C

INSTRUCTIONS FOR JUDGES OF ESSAY DATA

PLEASE READ EACH ESSAY CAREFULLY!

Below is a list of persons who may play an important role in the career development of the women writing the essays. A person may have a positive effect on a woman's development by being an available model, source of support, or encouragement. An individual may have a negative effect by discouraging or expressing disapproval of a woman's activities or aspirations.

For the first two questions, if either or both parents are mentioned, check ALL boxes which apply for a given essay. Thus, if a parent is mentioned as both a positive and negative influence, please check both. If "parents" are mentioned, score separately for mother and father.

	Positive	Negative
1. Mother/Stepmother	☐	☐
2. Father/Stepfather	☐	☐

For the following individuals, place a check in the box to the right only if the individual is mentioned in a positive light. If the same person is mentioned in two categories -- such as when a boyfriend is mentioned who is again mentioned as a husband, check both. If the sex of a teacher, friend, or relative is not clear, check nothing. (If sex is obvious but not specified, check accordingly).

3. Husband	3	☐
4. Boyfriend, fiance or other romantic relationship	4	☐
5. Male relative (non-parental)	5	☐
6. Female relative (non-parental)	6	☐
7. Male teacher or advisor	7	☐
8. Female teacher or advisor	8	☐
9. Male friend (not specified as husband or romantic relation) or acquaintance	9	☐
10. Female friend (or acquaintance)	10	☐

For questions 11-13, please put a check next to each that applied for a particular essay.

11. Mention of "practical" considerations in determining career direction. EXAMPLE-- "After my divorce when I needed to work, the easiest route was to go back for my degree in teaching." ☐

12. Mention of specific skills, abilities or preferences
EXAMPLE--"I always enjoyed tinkering with things." ☐

13. Mention of barriers which were overcome in the process of moving toward a career.
EXAMPLE--"I had to pay my own way to go to college." ☐

Examples of parents mentioned as positive influence ---

"My father was an engineer."

"My mother always thought women should work."

"My parents always encourage me to do well in school."

Examples of parents mentioned as negative influence ---

"I knew I didn't want to be a housewife like my mother."

"My father discouraged me from pursuing engineering."

"Neither of my parents expected me to do well in school."

(If parent is mentioned but not in negative light, score as positive.)