WOMEN: PERSONAL AND ENVIRONMENTAL FACTORS IN ROLE IDENTIFICATION AND CAREER CHOICES*

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WOMEN'S ROLES, EDUCATION, AND CAREERS

One of the most revealing statements about a society's attitudes and values can be found in its children's literature, particularly in the books used for beginning readers. Here are all the traditional do's and don't's, the myths and the prejudices deemed important to the teaching of developing young minds. One example of these attitudes was found by Fisher (1969) who noted, in her study of children's books, a conspicuous bias regarding the role of women in this country. Working mothers were non-existent, as were women doctors and women supervisors or administrators. Although single women were sometimes teachers, nurses, and librarians, their superiors were always male.

This seemingly inherent role for women is clearly projected in the newly adapted California textbook for elementary readers (Kidd, 1970). Girls play with dolls, buggies, dishes, and doll houses, and aspire to become mothers who wash dishes, cook, iron, and sew. Boys play with toys of adventure, and dream of becoming astronauts.

These cultural images permeate not only children's literature but the popular media as well, and are sufficiently pervasive to "disqualify" women in a large array of occupational fields. Some women, however, refuse to be "disqualified." This study attempts to determine the dynamics underlying their divergence from the norm.

It is a study designed to explore the psychological and sociological characteristics that describe the roles of two types of women--those who choose to pursue stereotypic masculine careers and those who elect stereotypic feminine careers. Background features as well as current life styles will comprise the focus of the study. Stereotypic masculine careers include

mathematics, natural and physical sciences, pharmacy, medicine, law, architecture, government administration, politics, engineering, and business administration. Stereotypic feminine careers include teaching, nursing, social work, counseling, homemaking, library and secretarial work (Women's Bureau, 1967).

Theoretical Framework

One orientation provides the theoretical framework for this study--that of role theory as defined by Sarbin (1954). This definition of role is conceptualized as:

> a patterned sequence of learned actions or deeds performed by a person in an interaction situation. The organizing of individual actions is a product of the perceptual and cognitive behavior of person A upon observing person B. On the basis of this conceptualization of the actions of B, A expects certain further actions from B. This expectation is covert, and is the equivalent of saying "locates or names the position of the other." Once having located or named the position of the other, A performs certain acts which have been learned as belonging to the reciprocal position; these actions are conceptualized as A's role (p. 225).

The role may be that of an individual as she performs in a reciprocal manner to the perceived role, for example, of mother, father, husband, an institution, or the society in which she lives.

"Position" is a system of rights and duties. Interdependently related to the concept of role, position signifies the cognitive organization of role expectations. In other words, it is the concept which embraces expected actions of persons enacting specified roles.

Because the position of "woman" in our society usually connotes primarily that of homemaker and mother, conflicts arise when a woman is not content to confine herself to society's expectations. Recently, increasing numbers of women are articulating this dissatisfaction in a variety of ways. Women's

Liberation members decry our society's conception of women in general. Careerists complain of discrimination in the professions, and others express a vague sense of confused identity in regard to their present life styles (Komarovsky, 1946). The latter case is notable particularly among educated, older women whose children have left home and whose role of "mother" has reached obsolescence (Freedman, 1961). Sarbin pointed out that role conflicts follow from changing and ambiguous role expectations. The inability to find a satisfactory solution to such conflicts may lead to the disorientation of self as it relates to role. "Lack of specificity and definiteness in role expectations may be related to discontinuities in female expectations (Sarbin, 1954, p. 227)."

In addition to role-role conflict, Sarbin also recognized, as a possible further source of dissonance, the intervening variable of self, which is the phenomenal experience of one's identity. Self is the person as an organization of qualities--what the person is as compared to what she does (role). Self is inferred from acts, and is described by adjectives (i.e., curious, worried, punctual, etc.).

Role-role and self-role conflicts are opposite here, as they would seem to effect women who defy conventional modes of behavior, in this case, modes of career aspirations. Rose (1951) found that the average college girl has no clear definition of the adult role--that role expectations involving marriage, children, employment, civic work, etc., are vague. Sarbin postulated that such ambiguity can result in ineffectual role enactments, and hence to role-role and self-role conflicts.

Related Literature

The issue of women's position in society is woven into our literature since well before recent times. From James Barrie's "What Every Woman Knows"

to Moss Hart's "Lady in the Dark," the accepted denouement suggests that the suitable role for a woman is one of submissiveness to her man, or at best, the "inspiration behind his success."

Indignant voices in reaction to this position of women have been heard throughout history. In his 1869 essay on "The Subjection of Women," John Stuart Mill forcefully denounced a hypocritical society which, though it acknowledged women's "superiority," legally enforced her position of subservience. "There is no other situation in life in which it is the established order, and considered quite natural and suitable, the better should obey the worse." Frederich Engles in 1884 described women's position as a dreary form of slavery. Nora, in Ibsen's "A Doll's House," closed the door (however softly) on her wifely enslavement. From Betty Friedan to Simone de Beauvoir, the outcry continues. Still, in many respects, the large majority of women continue to live, in the words of today's feminists, as second class citizens. (The literature review of the original dissertation has been omitted from this report).

Nowhere is the conflict more evident than in the professional world and in the underlying dynamics leading to career pursuits. Women generally have not the opportunities and choices in life-style that are available to men, and they are hired and paid by a crude second standard. According to Life Magazine (1970), the median wage for a man in the United States in 1968 was $7,664, while women earned a median wage of $4,456. Better paying jobs are not accessible even to qualified women, and their salaries are lower than those of men in virtually every occupation, regardless of educational level. Women chemists, for example, earn a median salary of $9,000 compared to $13,000 for men. According to the report, six percent of the scientists, seven percent of the physicians, three percent of the lawyers, and one percent

of the federal judges are women. Margaret Chase Smith is the one female senator in the national legislature. The percentage of women in all professional and technical fields has shrunk from 45 in 1940 to 37 in 1970 (Life Magazine, Dec. 4, 1970).

The characteristics of women are an integral and major part of the roles they enact--roles characterized for many by fairly powerful constraints. This study will attempt to identify some of the characteristics of young women who, in one arena of experience--that of occupational choice--do not yield to the constraints accepted by most, and do not conform to the career-related cultural female role. As with all individuals, according to Sarbin, their choice is influenced by their perceptions of the expectations of others with whom they are or have been engaged. This engagement may be current or past, ephemeral or lasting; it may encompass several areas of experience or only one. It influences one's role definition, however temporarily, through learning. By a series of trial and error attempts, the role player learns what the reciprocal other expects of her.

The women in this study have learned career-related roles which, theoretically, at least, they perceive meet the expectations of others. Most selected traditional feminine career roles; a few did not. The study, unfortunately, will not reveal the dynamics of the role-learning experience, due to constraints of the available data, nor will it shed light on specific interrelationships leading to role development. It may, however, identify some critical variables which distinguish between women in the traditional and non-traditional career roles. By implication it may then become possible to learn some of the dynamics related to role development.

Some assumptions are basic to the study. One is that the stereotypes of divergent male-female roles, having been learned, can be unlearned, or altered, as Sarbin postulated that roles are learned, not genetically determined.

Another is that the quality of life for women would be enhanced if the stereotypes were modified.

The current interest in alternative female roles has implications relevant particularly to higher education where the general direction of vocational choice approaches finality. Research indicates that college counselors in general and men counselors in particular are unable to cope effectively with women students who are in the formative stage of career development (Gurin, Nachmann, & Segal, 1963; Surette, 1967; Trent & Medsker, 1968). Other literature indicates that administrators of higher education institutions are being faced with demands from female activists for changes in curricula, policy making boards, and personnel practices (Trecker, 1971).

Major Questions

The major questions of the study deal with differences between two groups of upperclassman women--those who elected to pursue stereotypic feminine careers and those who opted for stereotypic masculine careers. Of particular interest are differences in home and family background, personality characteristics, values and attitudes, educational achievement and aptitude, and educational experiences. Significant differences between groups on any variable or combination of variables might reveal some underlying dynamics of career choice among women.

The data source for these questions is the College Student Survey, to be described in the following section. The questions below are categorized by major area of concern.

1. Career Choice

   What are the career choices of the women in the sample?

2. Background Information

   What are the differences in home and family background that differen-

tiate the two groups of women in the present study? Specifically, how do they compare on the following variables?

a. Socioeconomic status of parents (i.e., a composite of father's education, mother's education, parents' income, the number of books in the parents' home, and the level of father's occupation)
b. Level of father's and mother's education
c. Level of father's occupation
d. Level of parents' income
e. Parents' religion

3. Educational Achievement and Aptitude

a. What are the differences in high school grade point average between the two groups?
b. What are the differences in college grade point average between the two groups?
c. On a measure of verbal aptitude (i.e., a vocabulary test) do scores significantly differentiate between the two groups?

4. Personality Characteristics

Are there indications that women who assume atypical roles will experience a higher degree of anxiety than those who conform to societal expectations?

Are there significant differences in personality characteristics between the two groups on measures of autonomy, complexity, theoretical orientation, anxiety, and intellectual disposition?

5. Attitudes and Values

Are there differences in attitudes between the two groups toward various aspects of society? Specifically, on indices of attitudes toward woman's role in society, government, civil rights, and liberalism, do scores significantly differentiate between groups?

6. Educational Experiences

a. Do traditional career aspirants enroll in different types of colleges than do non-traditional career aspirants?
b. Are there differences between women of the two groups with respect to their perceptions of the benefits derived from their campus experiences?
c. Are there differences between women of the two groups with respect to the types of activities in which they involve themselves during their college years?
d. Are there differences between women of the two groups with respect to the amount and type of assistance they seek during their college years in regard to their academic, vocational, and personal problems?
e. What is the distribution of the two groups of women among various academic majors?
f. Are there differences between the two groups of women in terms of persistence in major field over a two year period?

METHODOLOGY

Sample

Original study. Between the fall of 1968 and the winter of 1969, the Higher Education Evaluation Program of the Center for the Study of Evaluation, under the direction of C. Robert Pace and James W. Trent conducted a survey of freshmen, upperclassmen, and alumni in some 90 institutions of higher education throughout the United States. The purpose of the study was to provide an in-depth examination of a broad range of student and alumni characteristics in various types of institutional settings. The selection of participating institutions was not random; it was based on functional typologies previously developed by Pace (1969), and was designed to represent the diversity and complexity of higher education in the United States. The eight institutional typologies are as follows:

1. Highly selective liberal arts colleges, private, non-sectarian.
2. Strongly denominational liberal arts colleges, Protestant and Catholic.
3. General liberal arts colleges, non-sectarian and moderately denominational.
4. Highly selective universities, public and private.
5. General comprehensive universities, public and private.
6. State colleges and other universities having less extensive graduate programs than comprehensive universities.
7. Colleges having a major emphasis on teacher education.
8. Colleges and universities having a major emphasis on engineering and sciences.

In the original survey, each institution was requested to select its own sample of respondents randomly and in each case the investigators verified the manner of selection. Sampling methods varied from school to school.

In some institutions, tables of random numbers were used to select students from the registration roster; in others, selection was accomplished by classroom enrollment.

The sample size of each institution was determined by the size of its undergraduate enrollment. That is, colleges with fewer than 5000 undergraduates were requested to sample 150 alumni, 100 upperclassmen, and 150 freshmen; colleges with undergraduate enrollments of over 5000 requested to sample 300 alumni, 200 upperclassmen, and 300 freshmen.

Present study. The present investigation utilized return questionnaires of the original study to examine data pertaining to women's career choices and their psychological, sociological, and educational backgrounds and experiences. Questionnaires from approximately half of the schools used in the larger study were randomly selected from each functional category for the present study. The number in each category is as follows:

Type of School	Number
State Colleges and Other Universities	5
Denominational Colleges	4
Select Liberal Arts Colleges	5
General Liberal Arts Colleges	8
Teachers' Colleges	4
Engineering Schools	2
Select Universities	3
General Universities	7
Total	38

The sample of respondents consists entirely of upperclassman women who were enrolled in the selected schools. A variety of factors led to the decision to focus on upperclassmen rather than freshmen or alumni. To study

psychological variables as they relate to career choice, it was deemed preferable to select subjects representative of those who 1) would have had the time and the opportunity to develop some reasonable firm career goals, and 2) would not yet have undergone many goal modifications in accommodating various external circumstances (e.g., marriage, children, finances). In terms of these criteria, the upperclassman seemed most appropriate.

Within the upperclassman group, the sample was divided into two categories. The first consists of women who indicated that they were aspiring to careers in occupational fields where women represent the large majority of the work force. Women in this category are called "traditionals." The other category consists of women whose goals were in fields where women represent a small minority of the work force. They are called "non-traditionalists." (Frequency tabulations of men and women employees within the occupational spectrum were found in the Bureau of Labor Bulletin, 1969).

Of the 1646 woman upperclassmen respondents in the 38 schools in the study, only 109 expressed career aspirations in non-traditional fields. These respondents comprised the "non-traditional" sample. The remaining group of 1537 respondents, the "traditionals," was reduced to 360 to effect a more manageable balance between the two comparison groups. This reduction was accomplished by randomly selecting 45 upperclassmen from each of the eight school categories. Because data processing revealed some unusable questionnaires with incomplete or no responses on critical variables, the sample was further pared, leaving a total of 101 "non-traditionals" and 321 "traditionals."

Measurement

The College Student Survey (Center for the Study of Evaluation, 1969) developed by Pace and Trent for their research on institutions of higher

education, supplied the data for the questions in the present study. They represent a part of a woman's complex of values and attitudes, aptitudes and experiences which influence and are influenced by her own unique life style. They are described below according to two major categories:

1. Personal Background Information

   This category includes personal data items such as the level of father's and mother's education, parents' income, father's occupation, parents' and one's own religious identification, and occupational aspirations. One variable, the socioeconomic status of the family, comprises several items: father's and mother's educational level, the number of books in the parent's home, parents' annual income, and father's occupational level.

2. Personality Characteristics

   The key variable in this category is measured by self-descriptive scales derived from several experimental scales labeled Personal Traits. These scales, modeled after the Omnibus Personality Inventory, provide a measure of three traits: 1) Autonomy, a measure of general independence of traditional authority, 2) Complexity, indicating the degree of tolerance one has for ambiguous situations, and the degree of enjoyment one finds in dealing with complex and novel ideas, and 3) Theoretical Orientation, which measures a preference for using the scientific method in thinking. People with high scores on this measure tend to be open-minded, logical, analytical, and critical in their approach to problems.

Analytic Procedures

A variety of analyses was used to determine traditional and non-traditional group differences on the items and scales of interest in the questionnaire. They include *t* tests, chi-square analyses, analyses of covariance and multiple step-wise regression analyses. The purpose of employing this series of analyses was to learn 1) the extent to which individual variables distinguish between the two groups when controlling for likely "contamination" variables, and 2) which combinations of variables would most reliably predict a subject's belonging to one group or the other.

Limitations

Some limitations inherent to the study warrant discussion. One results

from the absence of data directly related to the role theory underlying the study. Although the data are extensive, they reveal a woman's role identification by implication only. The sub-scales of the Personal Traits scale, for example, measure the way in which the respondent sees herself; the Viewpoints scale reveals some of her societal values; the College Activities index demonstrates a preference for the type of activities in which she engages; and the Educational Benefits index reveals her perceptions of the college environment, and the aspects of that environment which she values over others. Combined, these measures do offer clues, albeit limited, of one's perceived role.

Another limitation stems from the fact that the sampling procedure employed by Pace and Trent, discussed earlier, was not random but was based, instead, on as wide a range as possible of school types. This, of course, limits the generalizability of the findings.

A third limitation is the small number (109) of non-traditional career aspirants found in the sample compared to the 1537 traditional career aspirants. Although the relatively small size of the group allows for comparative analysis, a larger number would have increased the generalizability of the study.

Finally, the experimental nature of some scales in the survey instrument may account for some of the lack of variance between groups on some of the variables under examination. A few of the scales, for example those in the Personal Traits measure, are being analyzed for internal consistency; but at the time of the study, the analyses were incomplete.

RESULTS

Career Choices

The first task in preparation for analysis of the data was to establish the two criterion groups--upperclassman women aspiring to either traditional or non-traditional types of careers for women. One item on the College Student Survey supplied information regarding career aspirations. In response to the question, "After you finish college or graduate school, do you know what kind of job you want or expect to have?", those who answered "yes" were asked to write their career goals. Answers to this open-ended item were categorized as shown in Table 1.

As the figures show, career choices centered around the teaching profession with 50 percent of all respondents in the sample aspiring to teaching positions. Forty-two percent of those in the traditional career category were counselors, social workers, librarians, laboratory technicians, and nurses. Some, classified under "Other," were planning to become airline stewardesses, secretaries, models, fashion designers, missionaries, writers, or careerists in other positions where women represent at least half of the work force. The range of choices among the "non-traditionals" appears larger than that of the "traditionals," but, in fact, the latter would be at least as great if the category, "Other", were to be broken down.

The most frequently mentioned career choices among the "non-traditionals" were scientist, clinical psychologist, and physician. Approximately half of all women with non-traditional career choices had elected one of these three occupations.

TABLE 1

Career Aspirations of 1646 Upperclassman Women
Students in 38 Colleges Throughout the United States

Type of Aspiration	Number	Percent
Traditional Careers		
Teacher	803	49.0
Counselor, social worker	94	5.7
Nurse of other health worker (lab technician and other medical technologist)	77	4.6
Librarian	28	1.7
Housewife	10	.6
Other	211	12.8
Total Traditional	1223	74.4
Non-Traditional Careers		
Scientist (physicist, chemist, meteorologist, oceanographer)	20	1.0
Clinical psychologist	15	.7
Physician	14	.7
Lawyer	11	.5
Government executive or politician	10	.5
Computer Specialist	7	.4
Pharmacist	6	.3
Engineer	3	.2
Certified public accountant	3	.2
Business executive	3	.2
Mathematician	3	.2
Dentist	1	.08
Bank president	1	.08
Veterinarian	1	.08
Total Non-Traditional	109	6.60
Don't Know	314	19.0
TOTAL	1646	100.0

Background Characteristics

An analysis was made of the differences between "traditional" and "non-traditional" groups in socioeconomic status and religious background to determine what background features were related to women's career choices. The intent of the socioeconomic questions was to discover 1) if financial well-being is a contributing factor to future career decisions, 2) if the educational attainments of one's mother and father are associated with one's own career decisions, and 3) if parents' interest in intellectual matters, as measured by the number of books in the home, is related to the choice a woman makes about the kind of career she wants.

Socioeconomic Status

As noted earlier, the socioeconomic status score was computed from a composite of five variables--parents' income, mother's and father's educational level, the number of books in the parents' home, and the father's occupational level. The difference between the two groups on the total socioeconomic status score was statistically significant, with the "non-traditionals" scoring higher than the "traditionals" (Table 2). The "non-traditionals" obtained higher scores on all of the SES components. However, only two of the five separate components, mother's educational level and parents' income level, were significantly different.

More of the women (11 percent) who chose non-traditional careers had mothers who had achieved a Ph.D. or some advanced professional degree than those who chose traditional careers (4 percent); and more parents of "non-traditionals" were at the higher income levels and fewer at the lower levels than parents of the "traditionals." The average annual income of parents of traditional women was approximately $9,000 compared to that of non-traditional women which was approximately $11,000 with 31.2 percent of the

TABLE 2

Socioeconomic Variables Comparing
"Traditionals" and "Non-Traditionals"

SES variables and groups	Mean	df	t	p
Father's educational level				
Traditional	3.76	420	1.38	n.s.
Non-traditional	4.10			
Mother's educational level				
Traditional	3.56	420	2.73	.007
Non-traditional	4.03			
Number of books in home				
Traditional	3.05	420	.95	n.s.
Non-traditional	3.44			
Parents' income				
Traditional	2.80	420	2.46	.01
Non-traditional	3.21			
Father's occupation				
Traditional	5.55	420	.58	n.s.
Non-traditional	5.73			
Total SES				
Traditional	18.9	420	2.13	.03
Non-traditional	20.5			

parents of traditional women earning less than $10,000 annually, compared to 20.8 percent of the parents of "non-traditionals." No significant relationships appeared between career choice and the number of books in the home, or father's educational or occupational level.

Differences in family earnings do not seem to reflect solely the fathers' income, as the fathers' occupational level in both groups is similar. The fact that more mothers of "non-traditionals" are professionals in highly paid occupations may account for the advantage in famliy income for this group, assuming that these mothers are employed. If it is true that mother's educational level is, indirectly, the significant factor in family income, then it is also the single factor responsible for group differences in socioeconomic status (other than income) which significantly differentiated between the "traditionals" and "non-traditionals."

Analyses of the independent contributions of mothers' education and socioeconomic status to career choice should further illuminate this problem. However, in this context, a multiple regression analysis does supply information regarding these variables.

Religious Background

The religious background of the women in the two groups is shown in Table 3. The assumption underlying the analysis of differential religious backgrounds rests on the belief that religious experience, as one of the many environmental stimuli of early childhood, can influence one's role development, which, in turn, might affect the type of career one chooses. According to the data, some significant relationships do exist between religion and type of career choice. Catholic women predominately aspired to traditional careers, and Protestant women did, though somewhat less so; Jewish women aspired to non-traditional careers. Of the Catholics, 84.7

percent chose traditional and 15.3 percent chose non-traditional careers; among the Protestants, 79.2 percent were aiming for traditional careers, while 20.8 percent aspired to non-traditional careers; among the Jews, 36.4 percent chose traditional and 63.6 percent chose non-traditional careers.

TABLE 3

Traditional and Non-Traditional Career Choices of Women According to Religious Affiliation (in percent)

	Catholic (N=59)	Jewish (N=22)	Protestant (N=265)	Other (N=50)	No Response (N=26)
Traditional	84	36.4	79.2	66	75
Non-Traditional	15.3	63.6	20.8	34	25

Personality Characteristics

An important consideration in a study involving role identification is the "self", defined by Sarbin as the organization of qualities that comprise what the person is as opposed to what he does, which is role. Through the use of adjective checklists, according to Sarbin, we can identify this part of the personality which interacts with role to determine behavior. By asking respondents to check items about what they like and how they see themselves, the researcher can identify some aspects of "self" concept. In this study, "self" is most directly revealed by the Personal Traits measure which consists of two checklists--one headed "I generally like," followed by two or three word descriptions of people and activities such as practical, determined, social, open-minded, etc.; and the other, "I am," followed by

a list of adjectives. The items can be used individually as indicators of the way one sees herself, or they can be clustered into scales (i.e., Autonomy, Complexity, Theoretical Orientation, and Anxiety) which were modeled after the Omnibus Personality Inventory for use in the original study by Pace and Trent. The Autonomy scale seemed especially pertinent to the study. It seemed reasonable to expect women who plan to enter male dominated fields to possess a relatively strong degree of autonomy, a characteristic defined in this context as independence of traditional authority. It also seemed reasonable to expect an individual who countermands society's expectations to experience some anxiety. Thus, relative to at least two of the Personal Traits sub-scales, Autonomy and Anxiety, it was anticipated that the "non-traditionals" would show higher mean scores.

TABLE 4

Comparison of Personal Traits Scores of the Traditional and Non-Traditional Career Groups

Scale	Group	Mean	df	t	p
Autonomy	Traditional Non-traditional	6.7 7.0	420	1.30	.19
Complexity	Traditional Non-Traditional	13.7 14.2	420	1.40	.16
Theoretical Orientation	Traditional Non-Traditional	6.49 9.04	420	7.50	.001
Anxiety	Traditional Non-Traditional	2.75 2.76	420	.08	.9

As the data in Table 4 show, this was not the case. Scores on the Anxiety scale were virtually identical. Although the "non-traditionals"

obtained higher scores on the Autonomy scale, the difference was not significant. The Complexity scale, measuring tolerance for ambiguity and a liking for novel and complex experiences, did differentiate between groups, but the higher score on this scale made by the "non-traditionals" was not significant. The Theoretical Orientation scale, however, unquestionably differentiated between "traditionals" and "non-traditionals," the latter group obtaining significantly higher scores than the former.

The Theoretical Orientation scale was composed of items describing relatively scholarly and scientifically disposed individuals with a propensity for critical, logical, analytical thinking. Because so many of the items comprising this scale were oriented to scientific interests, and since many of the "non-traditionals" were science majors (as shown later, 38.7% of the "non-traditionals" were majoring in physical and biological sciences), and chose science occupations, an analysis of covariance was used to determine the relationship of Theoretical Orientation to career choice with the two science majors held constant. According to the results shown in Table 5, there was a significant difference between scores on the Theoretical Orientation scale when the traditional vs. the non-traditional groups were compared, even while holding science major constant.

TABLE 5

Analysis of Covariance of Theoretical Orientation to Career Choice with Physical and Biological Science Majors as Covariables

Source	df	Mean Square	F*
Traditional vs. Non-Traditional	1	285.53	33.68
Covariates (physical & biological science majors)	2	95.71	11.29
Physical Science	1	123.32	14.54
Biological Science	1	94.76	11.17

*All F values significant at <.001

In addition to their function as contributors to scale scores, the items in the Personal Traits measure have value, individually, as indicators of "self" concept. To determine if any of these items, by themselves, and irrespective of scales, would contribute to an image of one group of women as compared to another, a chi-square analysis was made for every item in the Personal Traits scales. Chi-square analyses of items which significantly differentiated between groups are shown in Table 6.

According to Table 6, practically all of the items in the Personal Traits scale belong to two of the sub-scales, Theoretical Orientation and Complexity, and the majority of these items are more characteristic of the "non-traditionals" than of the "traditionals". The exceptions which are more characteristic of the "traditionals" (under the stem "I generally am"), are "predictable" and "sociable," the former detracting from their Complexity scale score and the latter from their Theoretical Orientation scale score.

Other individual items also distinguished between groups, but the differences were not statistically significant. For example, the "non-traditionals" more frequently than the "traditionals" described themselves as adaptable and open-minded, and less frequently as conventional and as liking unquestioning obedience.

There appears to be some incongruity between scales and individual items within the scales in terms of their distinguishing power between groups. Where two or three items may significantly differentiate between groups, the scale encompassing the items may not. For example, although four items appear from the Complexity scale in Table 6, "I generally am well organized" detracts from the scale score, indicating that the "non-traditionals" are less complex than the "traditionals" on that variable; and the "I am generally predictable" item, which also detracts from the Complexity scale score, was more characteristic of the "traditionals" than the "non-traditionals."

TABLE 6

Personal Traits Showing Significant Differences by Chi-square Analysis, and the Sub-scales to which They Belong (in parentheses)

Sub-scales* and Items	Percent of positive responses in each group		df	X^2	p
	Trad.	N.-Trad.			
I generally am:					
Well organized** (C)	43.9	62.4	1	9.7	.01
Individualistic (C)	58.3	70.3	1	4.1	.05
Questioning (C)	59.12	71.3	1	4.2	.05
Predictable** (C)	29.9	18.8	1	4.2	.05
Determined** (A)	61.7	72.3	1	3.3	.10
Undistracted** (TO)	3.1	14.9	1	16.93	.001
Analytical (TO)	24.0	56.4	1	35.84	.001
Critical-minded (TO)	36.1	53.5	1	8.88	.01
Scientific (TO)	10.9	45.4	1	57.22	.001
Sociable** (TO)	77.9	62.4	1	8.8	.01
I generally like:					
Original research work (TO)	40.5	61.4	1	12.68	.01
Solving long, complex problems (TO)	22.1	37.6	1	8.84	.01
Critical considerations of theories (TO)	31.5	45.5	1	6.10	.02
Science and mathematics (TO)	18.4	49.5	1	37.24	.001
Discovering how things work (TO)	53.6	70.3	1	8.11	.01
Scientific displays (TO)	15.0	36.6	1	21.12	.001
Detecting faulty reasoning (TO)	34.9	64.4	1	26.19	.001

*C=Complexity, A=Autonomy, TO=Theoretical Orientation
**An answer of "false" on these items contributes to a higher score on the respective scales

Thus, the significance of a scale score can be misjudged by cursory attention only to the items of which it is composed.

Attitudes

The Viewpoints section has three parts, each measuring attitudes toward a different aspect of society. Four items comprising the Government index deal with nationalistic versus internationalistic policies of the United States. The Women's Rights index contains four items on women's role in society which define viewpoints about women as policy makers in business and government, as competitors with men in professional fields, and as housewives and mothers with outside occupational interests. The Civil Rights index deals with rights of the disadvantaged and minorities, and repressive versus libertarian domestic government policies.

The Women's Rights index was of particular interest as a means of examining congruence between women's career planning behavior and attitudes about professional career women. Another use of the data on this measure was the comparison of the Women's Rights and Civil Rights indices to determine whether respondents would express the same degree of liberalism in their attitudes toward women as toward other oppressed groups.

As the data show in Table 7, some agreement does exist between behavior and attitudes toward women's rights. The "non-traditionals" scored significantly higher than the "traditionals," manifesting more liberal attitudes on this index. The same group of women also scored significantly higher on the Government index, again in the direction of liberalism. On the Civil Rights index, however, scores were almost identical, and they were higher than on the Women's Rights index. Apparently, the attitudes of both "traditionals" and "non-traditionals" were more liberal toward civil rights than they were toward women's rights.

TABLE 7

Differences Between Mean Scores of Women in Two Career Groups on the Viewpoints Scale

Scale	Group	Mean Scores	df	t	p
Government	Traditional	2.29	420	2.77	.006
	Non-Traditional	2.63			
Womens' Rights	Traditional	2.43	420	4.15	.001
	Non-Traditional	2.87			
Civil Rights	Traditional	3.49	420	.06	n.s.
	Non-Traditional	3.50			

On this index, it may be noted that differences between groups are labeled significant even though they appear to be negligible. The reason for this involves the small number of items in each sub-index which considerably limits the range of possible scores.

Educational Achievement and Aptitude

High School Grade Averages

Since all of the careers selected by the "non-traditionals" require graduate work beyond the B.A. and in most cases beyond the M.A., it was expected that the average college grade of women in this group would be at least a B or B plus, but there was no expectation of significant differences between groups, as many of the "traditionals" were also entering careers requiring postgraduate work.

The item referring to grade averages in the questionnaire provided six alternative responses: D or C -, C, C+, B, B+, and A or A+. The distributions of grade averages in high school and in college, and the results of chi-square analyses are shown in Table 8. The figures in the table indicate

group differences between "traditionals" and "non-traditionals," the latter achieving significantly higher averages in high school grades. Sixty-two percent of the "traditionals" compared to 79.2 percent of the "non-traditionals" fall into the combined two highest categories with grades of A+, A, and B+.

College Grade Averages

In college, the differences between groups increased. Here, 49.9 percent of the "traditionals" versus 75.3 percent of the "non-traditionals" reported grade averages in the highest categories, from B through A+. The figures also indicate that almost half (46.1 percent) of the "traditionals" were average students in college (C or C+) compared to less than one-fourth (22.8 percent) of the "non-traditionals." Evidently academic achievement, particularly on the college level, is an important variable as it relates to the type of career choice women make.

TABLE 8

High School and College Grade Averages For "Traditional" and "Non-Traditional" Groups-- Frequency Distribution by Percent

Response	High School GPA		College GPA	
	Trad.	Non-trad.	Trad.	Non-trad.
A,A+	22.1	41.6	2.8	12.9
B+	39.9	37.6	15.3	24.8
B	24.0	11.9	31.8	37.6
C+	9.0	3.0	30.2	17.8
C	2.2	2.0	15.9	5.0
C-,D	0.6	1.0	1.2	1.0
No response	2.2	3.0	2.8	1.0

Verbal Aptitude

In addition to academic achievement, it seemed desirable to include some indication of academic aptitude (which may account for achievement differences) as a comparative variable on the two groups of upperclassmen. Although no complete tests of aptitude were included in the College Student Survey, a 20 word vocabulary test was provided. Used as an indication of verbal aptitude, the test indicates, to some degree, a potential for academic achievement. If differences in verbal aptitude exist in favor of the "non-traditionals," there is reason to anticipate a higher level of academic potential from this group. According to the data, the "non-traditionals" scored a mean of 13.3 points (of a possible 20) compared to a mean of 11.4 points for the "traditionals," the difference significant at the .001 level of probability. Assuming that vocabulary scores are partial indicators of academic aptitude (and possibly, therefore, relevant to academic achievement), this finding is consistent with that of grade averages in college, which were also found to differentiate in favor of the "non-traditionals."

If the vocabulary score could be interpreted as an indication of academic ability, it seemed possible that the difference shown between groups on the Theoretical Orientation scale was related to a difference in this ability rather than a difference in career orientation. With this in mind, an analysis of covariance was done, controlling for vocabulary scores. The results in Table 9 indicate that there are significant differences in Theoretical Orientation between groups, regardless of vocabulary scores.

TABLE 9

The Relationship of Theoretical Orientation to Career Choice by Analysis of Covariance with the Vocabulary Score as Covariate

Source	df	Mean Square	F
Traditional vs. Non-traditional	1	402.36	46.33*
Vocabulary Score	1	96.72	11.13*

*Significant at $<.001$

Educational Experiences

Distribution among School Typologies

Expectations were that the proportion of "non-traditionals" would vary by type of college. Specifically, the underlying hypothesis was that select liberal arts colleges and universities would attract the "non-traditionals" disproportionately. Table 10 illustrates the distribution of "traditionals" and "non-traditionals" among the seven types of schools. The original sample of 1646 women (before the size of the traditional group was reduced) is presented to better illustrate the actual proportion of non-traditionals to the total number of upperclassman women in the 41 schools.

As the figures show, the percent of "non-traditionals" varies widely among typologies with state and teacher's colleges showing the lowest percentage of non-traditional career aspirants (1.7 and 2.2 percent, respectively), and select liberal arts and engineering schools the highest, (15 and 15.7 percent, respectively). Beyond the comparisons of school typologies, however, comparisons of schools within typologies reveal an even wider range of proportion of "non-traditionals." For example, within the select liberal arts category, the range of "non-traditionals" among schools is from zero to 33 percent, and within the general university category, from 3.8 to 18 percent.

TABLE 10

Career Choices of 1646 Women by Institutional Categories

Institutional Category	Teacher	Counselor and Social Worker	Librarian	Laboratory Technician and Physical Therapist	Housewife	Don't Know	Non-Traditional	Other	Number of Women
State Colleges and Other Universities	137	5	12	5	2	27	2	33	223
Denominational Colleges	98	16	2	16	1	29	7	18	187
Select Liberal Arts Colleges	38	9	4	2	2	68	26	27	176
General Liberal Arts Colleges	143	24	2	34	1	62	15	49	330
Teachers' Colleges	193	9	3	2	1	29	7	15	259
Engineering Schools	21	5	0	1	1	6	8	9	51
Select Universities	29	2	4	2	0	35	11	11	94
General Universities	144	24	1	15	2	58	33	49	326
TOTAL All Schools	803	94	28	77	10	314	109	211	1646

(Data for individual schools are not included in this report of the study). Although engineering schools, select liberal arts, and universities have the highest proportion of "non-traditionals," it appears that this variable, enrollment by type of school, may be no more critical in the examination of differences between "traditionals" and "non-traditionals" than is the individual school itself with its own set of unique environmental characteristics.

Perception of Educational Benefits

The Educational Benefits section of the College Student Survey questionnaire consists of a list of the more commonly sought goals or values one might derive from the college experience. These goals are divided into three categories of statements--Vocational, Liberal Education, and Personal and Social Benefits. The respondent is asked to rate each statement on a four-point scale (from very little to very much) according to the extent that she feels she has benefited from each during her college years.

It was anticipated that the "non-traditionals" would score higher on "Vocational Benefits" than on the other two indices because of the highly demanding nature of their career goals, which would seem to encourage a special awareness of and appreciation for the professional or vocational benefits of college over and above the cultural or social aspects. However, the data did not bear out the expectation (Table 11).

In terms of relative value of the three benefits, both groups rated Personal Benefits first, Liberal Education second, and Vocational Benefits last. The "non-traditionals" apparently felt that they derived more value from all three of the benefits than did the "traditionals." On two of the indices, "Vocational" and "Liberal Education," the differences between groups were significant.

TABLE 11

Differences Between Women in Two Career Groups on the Educational Benefits Perceived from Their College Experiences

Scale	Group	Mean Scores	df	t	p
Vocational Benefits	Traditional	.78	420	2.39	.01
	Non-traditional	1.04	420		
Liberal Education Benefits	Traditional	1.32	420	3.06	.002
	Non-traditional	1.83	420		
Personal Benefits	Traditional	2.26	420	.89	n.s.
	Non-traditional	2.42	420		

As discussed above, a very small number of items in a sub-index can cause the difference between group scores to appear insignificant when in fact it is statistically significant. This applies to the Educational Benefits index as well as to the College Activities index to follow.

Academic Major

To examine differences in academic major among women of the two groups, an analysis was made of freshmen and current (upperclassman) major fields. One item in the College Student Survey asks, "When you first enrolled in college, what did you think your major field of study would be?", and "What actually is your major field of study now?" The results of frequency tabulations are shown by percentages in Table 12. Physical, biological, and social sciences claimed the greatest percentage of "non-traditionals", 69 percent of the freshmen and 72 percent of the juniors. The remaining 28 percent was scattered without emphasis on any field in particular. The one notable difference in major field found in the "non-traditional" group was a 12 percent increase in social science majors, made, apparently, at the expense of the physical and biological sciences, which lost 9 percent of the women in this group.

Women in the traditional group were distributed over a larger number of major fields; education claimed 22.4 percent of the freshmen and 24 percent of the juniors. As with the "non-traditionals," the change in distribution of majors from the freshman to junior year also expanded enrollment in social sciences and pared the numbers in physical and biological sciences.

Compared to 30.6 percent of the "non-traditionals," 26.4 percent of the "traditionals" shifted major during the three-year period. However, it would appear that distribution differences have greater distinguishing power than shifts in major.

College Activities

To determine if there were types of activities that "non-traditional" women engaged in to a greater degree than "traditional" women, an analysis was made of typical extracurricular activities on a college campus, categorized under the following headings in the questionnaire: Athletic, Creative, Government, Social Service, and Academic. Under the Athletic heading falls varsity and other sports; Creative activities include music, drama, arts and crafts; Government consists of participation in national political groups as well as student government; Social Service activities are those designed for the benefit of those in need; and Academic activities consist of membership in groups interested in school (or academic) related projects.

TABLE 12

Percent Distribution of Two Groups of Women in Various Academic Majors in Their Freshman and Junior Years

Major	Freshman Year		Junior Year	
	T (N=321)	NT (N=101)	T (N=321)	NT (N=101)
Physical Science	7.8	18.8	3.4	13.9
Biological Science	10.9	28.7	7.2	24.8
Social Sciences	11.8	21.8	19.0	33.7
Language	11.2	4.0	7.5	2.0
Humanities	13.7	5.9	16.8	6.9
Arts	5.3	4.0	8.1	1.0
Engineering	.9	.0	.3	1.0
Business	2.5	4.0	1.9	5.9
Education	22.4	2.0	24	2.0
Other	9.3	8.9	9.0	9.9
Didn't know	1.6	2.0		

Results of t tests (Table 13) show that the "traditionals" engage more in athletics and creative activities (i.e., creative writing, arts and crafts, music) than do the "non-traditionals," although the differences were not significant. Social service and academic activities, on the other hand, did show significant differences, with more involvement on the part of the "non-traditionals;" government activities were also more popular with the "non-traditionals," although differences in this category were not significant.

TABLE 13

Differences Between Mean Scores of Women in Two Career Groups on the College Activities Scales

Scale	Group	Mean Scores	df	t	p
Athletic	Trad. Non-trad.	.35 .32	420	.24	n.s.
Creative	Trad. Non-trad.	.41 .29	420	1.37	n.s.
Government	Trad. Non-trad.	.09 .15	420	1.49	n.s.
Social Service	Trad. Non-trad.	.22 .39	420	2.78	.006
Academic	Trad. Non-trad.	.09 .33	420	5.04	$<.001$

Identification of Counselors, Faculty, and Parents as a Source of Assistance to Students.

One item in the College Student Survey questionnaire for upperclassmen was designed to determine 1) from whom the respondents most frequently requested assistance--faculty, counselors, or parents--and 2) the kinds of assistance they most needed--vocational, academic, or personal. It was

anticipated that the "non-traditionals" would be less reliant in general upon others than the "traditionals", as they have expressed, in their choice of careers, a degree of disregard for the "conventional wisdom" of others. However, the data did not substantiate the expectation. The frequency with which upperclassman women sought assistance with their problems from counselors and parents was approximately the same for both "traditionals" and "non-traditionals," with the exception of one instance, where "traditionals" more frequently reported seeking help with vocational plans from counselors. The only major statistical differences between groups occured as a result of more "non-traditionals" requesting assistance from faculty members with problems related to their academic work, their abilities and interests, and their vocational and college plans. Both groups reported discussing practically all of their plans and concerns with parents more frequently than with either counselors or faculty (Tables 14, 15, and 16)1

TABLE 14

Differences Between Groups in the Types of Problems for Which They Seek Help from Counselors

Type of Problem	% Positive Responses in each group		df	X^2	p
	T (N=321)	NT (N=101)			
Academic work	53.6	53.5	1	0	n.s.
Abilities and interests	41.4	41.6	1	0	n.s.
Vocational plans	50.8	39.6	1	3.40	< .1
College plans--choice of major, whether to go to graduate school, etc.	49.2	43.6	1	.77	n.s.
Personal problems	20.9	18.8	1	.09	n.s.
Financial problems	13.7	13.9	1	.00	n.s.

TABLE 15

Differences Between Groups in the Types of Problems for Which They Seek Help from Faculty

Type of Problem	% Positive Responses in each group		df	X^2	p
	T (N=321)	NT (N=101)			
Academic work	66.4	83.2	1	9.62	<.01
Abilities and interests	31.1	64.6	1	4.92	<.05
Vocational plans	55.5	67.3	1	3.98	<.05
College plans--choice of major, whether to go to graduate school, etc.	40.8	55.4	1	6.08	<.01
Personal problems	18.1	19.8	1	.05	n.s.
Financial problems	8.1	8.9	1	.00	n.s.

TABLE 16

Differences Between Groups in the Types of Problems for Which They Seek Help from Parents

Type of Problem	% Positive Responses in each group		df	X^2	p
	T (N=321)	NT (N=101)			
Academic work	87.5	81.2	1	2.07	n.s.
Abilities and interests	83.2	81.2	1	.09	n.s.
Vocational plans	85.7	88.1	1	.20	n.s.
College plans--choice of major, whether to go to graduate school, etc.	79.8	84.2	1	.69	n.s.
Personal problems	75.1	68.3	1	1.47	n.s.
Financial problems	76.9	75.2	1	.04	n.s.

Critical Predictors of Traditional or Non-Traditional Career Orientation

To this point, the focus of the study has been on differences between two criterion groups--women with traditional and non-traditional career orientations. In keeping with the theoretical basis of the study, a list of characteristics which best define the role of one or the other type of woman was formulated. By submitting the variables in the survey instrument to a stepwise multiple regression analysis, it was possible to produce a list of variables which, within limits of available data, define the role of women belonging to at least one of the criterion groups.

A stepwise multiple regression analysis determines the amount of variance that each of the independent variables measured in the study contributes to the prediction of the criterion variable--in this case, career orientation. Multiple regression analysis is an extension of correlation analysis; instead of measuring the linear relationship between only one independent variable and one dependent variable, resulting in a linear combination of the independent (predictor) variables that can be used to "predict" values of a dependent variable.

Stepwise regression is a variation of multiple regression which provides the best predictions of the criterion variable using the fewest independent variables possible. It enters predictor variables into the regression equation in the order of the predictive power, holding constant the previously entered variables, and continuing the procedure until the addition of new independent variables will not make a significant contribution to the prediction equation. In this case (Table 17) the analysis was continued until the gain in multiple R, the squared multiple correlation

coefficient, was less than .01. The final multiple R for the eight variables entered into the regression equation was .49

Two factors serve as criteria for selection into the regression equation. One is the value of the normalized regression coefficient, the significance of which is measured by the F statistic. As Table 17 shows, the greatest F value among the predictors is associated with the variable, "I like science and mathematics."

The other factor used in the selection process is called tolerance. The higher the tolerance of a predictor variables, the more it accounts for previously unexplained variance in the dependent or criterion variable. The product of the normalized regression coefficient squared and the tolerance equals the amount of additional variance accounted for by adding the new variable.

Variables were entered into the regression equation, selected on the basis of previous tests of differences (chi-square analysis and *t* tests). Forty-one variables, showing differences significant at or better than the .10 level were included. Academic major was excluded, however, since it is frequently, and often of necessity, directly related to career choice; it was considered, instead, as an integral part of the dependent variable, career choice.

Theoretical Orientation (from the Personal Traits scale) was the strongest predictor in the multiple regression analysis, as was earlier suggested by the analysis of covariance; and two individual items from the same scale also maintained a high ranking on this analysis--grade average in college and "I like science and mathematics." Table 17 shows higher Beta values (normalized regression coefficients) for the two latter items

TABLE 17

Variables of Predictability on Criterion, Career Orientation, as Determined by a Stepwise Multiple Regression Analysis

Variable	% of Variance (R square)	Beta	Standard Error	F*
Theoretical Orientation scale	.12	.11	.01	4.05
College grade average	.15	.17	.02	13.72
I like science and mathematics	.18	.21	.05	17.80
Viewpoints regarding the role of women in society	.21	.14	.02	9.85
Certainty of future job choice	.22	.13	.03	8.94
Requesting faculty help with academic problems	.23	.10	.04	5.38
Self-descriptiop: I am analytical	.24	.11	.05	4.76

*All F values significant at .01 or better

than for Theoretical Orientation, but this is an indication of their strong relationship with the dependent variable, and not necessarily of a stronger predictive value in terms of probable change in the dependent variable.

Following "I like science and mathematics" in order of predictive value were: liberal viewpoints regarding women's role in society, certainty of future job choice, discussing academic problems with faculty, and the self-description, "I am analytical." All of the above (including higher grade averages in college) were more descriptive of the "non-traditionals" than the "traditionals."

Other variables, such as vocabulary, religion, and socioeconomic status, which differentiated significantly on t tests and chi-square analyses evidently do not have the predictive value of the above seven.

When all the variables were entered into the multiple regression equation, however, only approximately 29 percent of the variance was accounted for. An obvious implication is that other variables, not included in this study, would improve the predictability of career choice. Consequently, the need for further research in this area is self-evident.

DISCUSSION

Distribution of Career Goals

The distribution of career choices among women in the sample was the most potent evidence that women's occupational aspirations are influenced by other than chance factors. Among 1646 women upperclassmen in colleges throughout the country, less than six percent aspired to non-stereotypic feminine careers; half of the remaining 94 percent were preparing for teaching positions. One purpose of this study was to determine, within the limits of the available data, what factors function to result in such disproportionate figures.

Major Group Differences

Analyses of the data reveal some clear group differences in terms of sociological, psychological, and educational features between women who aspire to traditional occupations and those who aim for non-traditional careers. A number of these variables apparently have theoretical and practical relevance to the criterion variable. A brief summary of major group comparisons reveals that women with non-stereotypic aspirations:
1) come from homes with a higher income; 2) have mothers who have reached higher levels of education; 3) are more theoretically oriented (i.e., have a propensity for logical, analytical and critical thinking); 4) hold more liberal attitudes toward the role of women in society, and toward international relations among governments; 5) are higher achieving students; 6) express a stronger liking for science and mathematics; 7) maintain higher academic records in college; 8) tend to have more communication with members of the faculty insofar as the academic and vocational aspects of their lives are concerned; 9) see their college experiences more in terms of vocational and liberal education benefits; 10) participate in college to a greater degree in social service and academically oriented activities; and 11) are

less involved in artistically creative activities such as creative writing, dance, art, theatre, and music. In reference to religious background, approximately two-thirds of those from Jewish homes, one-fifth of those from Protestant homes, and one-seventh of those from Catholic backgrounds were "non-traditionals."

Role Conflict

One expectation relative to role theory was that these findings could be linked with role-role conflict and/or self-role conflict among women in the non-stereotypic career group. As noted, Sarbin discussed these conflicts which, he contends, result from ambiguity of role expectations, or result when individuals occupy two or more positions simultaneously, each with role expectations incompatible with those of the other. A prime example of such conflict is the woman who attempts to enter a stereotypic masculine occupation, such as the non-traditional women in the present study are expecting to do.

If the role-role or self-role conflict were operative among the "non-traditionals" in the present sample, one might expect to find a degree of anxiety among them, since conflict and anxiety are usually related. Many studies refer to anxiety as the accompanyist to the conflict between a commitment to a professional career and a desire for a future as wife and mother. Few women seem able in their speculations to combine the two commitments, although in actuality many professional women have done so successfully (Epstein, 1969; Ginzberg, 1966; Katz, 1969; Komarovsky, 1946; White, 1959). If the "non-traditionals" in the present sample had scored higher on the Anxiety Scale of the survey instrument, the affect could have been ascribed to conflict over the two incompatible roles which they were attempting to fill (i.e., that of stereotypic woman, and that of professional careerist in a masculine occupation).

However, neither chi-squares of the individual items nor a t test of the total scale scores revealed any differences between groups on this variable. One possible reason for these findings is that the women in the sample were only college upperclassmen, their awareness of and experience with the conflict over marriage versus career had not yet been realized, but might develop during the years of graduate work.

Role Congruence

Another expectation germane to role theory was some evidence of congruence in role behavior. For example, the trait autonomy, or independence from traditional authority, would seem congruent with the choice by women of non-traditional careers. On the Autonomy scale, however, there were no significant differences between groups either on the individual items or on the total scale score. Again, the expectation may be premature for upperclassmen. It may be that independence from authority develops in proportion to the oppressiveness of that authority, and that the upperclassmen in this sample have not yet experienced much frustration regarding their career goals.

Congruence, however, was apparent in attitudes toward women's role in society. On an attitudinal index questioning whether women should be in the home, taking care of children, or developing their career objectives equally with men, the non-traditional women in the sample scored significantly higher than the traditionals. Congruence was also indicated in findings of the Educational Benefits index, on which non-traditionals placed significantly higher value on the vocational aspects of their college education than did traditionals.

Theoretical Orientation and Complexity

In addition to some expectations regarding role conflict and role congruence, the study also proposed to reveal, from among a wide array of characteristics, differences between the non-traditional and the traditional career women. The most cogent differentiating characteristic on the multiple regression analysis for the non-traditionals was theoretical orientation, along with two items belonging to that scale--"I am analytical" and "I like science and mathematics." Chi-square analyses isolated additional differentiating items from the same scale. For example, from the stem, "I am," the non-traditionals characterized themselves as more critical-minded, scientific and undistracted, and less sociable. From the stem, "I like," several additional theoretical orientation items showed significant differences (Table 17).

Findings related to these variables appear in other studies. For example, Elton and Rose (1967) measured discrepant abilities among women, and found that those with a theoretical oreintation differed in type of career choice from those who lacked this trait. Career choices among the former group had higher professional status than choices of the latter group. Maccoby (1963) found that theoretical orientation related directly to anxiety, and inversely to creativity. She stated that anxiety, the inhibitor of creativity, is engendered when girls become aware that their propensities for analytical thinking and a theoretical orientation are considered inappropriate to feminine behavior, and that they are meeting with social disapproval; anxiety is especially detrimental to creative thinking, for it narrows the range of possible alternative solutions to problems, thereby inhibiting the breaking of new ground.

Items in the Complexity Scale also differentiated the groups. From the stem, "I am," the non-traditionals portrayed themselves as more well

organized, individualistic, questioning, and less predictable.

According to Sarbin, the above descriptions are appropriate means of identifying "self." They are the only self-checking adjectives in the instrument which differentiated women in the two groups. However, it seems reasonable to refer to them as variables which partially describe intellectual disposition, a facet of "self" which certainly would not seem to create conflict with non-traditional career roles.

Mother's Education

Another distinguishing characteristic was the level of the mothers' education. More non-traditionally oriented women had mothers with advanced degrees, suggesting that high achieving mothers may be uniquely influential in the career and requisite educational aspirations of the non-traditional daughters, although this was not a potent factor in the multiple regression analysis. This supports White's findings which indicated that the mother's prescribed feminine role was the strong determinant of the daughter's career orientation (1959). It also corroborates Astin's (1969) data which revealed that the mothers of women doctorates were highly educated and career oriented; seventy percent of the working mothers of women doctorates in her sample engaged in professional or managerial occupations.

Grade Averages, Academic Aptitude, and Relations with Faculty

The fact that the "non-traditionals" maintained higher grades and revealed greater academic aptitude (as measured by vocabulary scores) is not surprising in view of the advanced academic degrees most of them hope to achieve. It seems possible that the closer relationship many of them have with faculty members is also related to the stronger leanings they have for academic activities. Further study of these variables to determine which are the motivating influences upon the others would be interesting, but would require more detailed information than is included in the College Student Survey.

Socioeconomic Background

Higher socioeconomic background appear to be related to women's pursuit of non-stereotypic careers, a finding in agreement with Astin (1968) who suggested that the high cost of graduate education usually requires a substantial economic background; and also that families of high socioeconomic and educational achievement might transmit to their children the value of education toward higher professional status.

Attitudes

Liberal attitudes toward government were found to a higher degree among women in the non-traditional group. Current research reveals that a relationship exists between these attitudes and academic majors. According to numerous studies cited in Feldman & Newcomb (1969), social science majors rank higher than all others in degree of politico-economic and social liberalism; science majors appear around the middle or low middle of the rankings; and education majors are consistently lower in rank order than either of the other two. In the present study, 72.4 percent of the non-traditional women were majoring in social, physical or biological science, compared to 29.6 percent of the traditional women; two percent were majoring in education compared to 24 percent of the traditional group. Based solely on the findings from the Feldman and Newcomb work, one would expect merely by noting the distribution of major fields among the non-traditionals that they would express more politically liberal attitudes.

Distribution and Shifts in Major Fields

There was, in the non-traditional group, an 8.8 percent decline in science majors from the freshman to upperclass years of study. This finding may be explained in terms of Astin's study (1968) in which she observed that masculine fields (those that attract more men) become more masculine during

the period of college, and that feminine fields become more feminine. It seems that this process may have been functioning in the present study. If so, the fact that the non-traditionals shifted major fields in greater proportions than did the traditionals could be accounted for. [The heavier shifts among non-traditionals had initially seemed puzzling, since, according to research studies, for instance, Heist and Yonze (1968), there should be fewer shifts among students who are more certain of their goals, as were the non-traditional career aspirants in the present sample.]

Religious Background

It was noted that Jewish women had proportionately much greater representation among the "non-traditionals" than Protestant or Catholic women. However, it is unfortunate that individual Protestant denominations were not included in the original coding, as there are possibilities for considerable variation among them. For example, if religious and non-religious Catholics and the various Protestant denominations differ in basic values, it seems likely that they might also differ in expectations related to women's role.

In regard to differences among major religious categories, McClelland (1958) pointed out that Jews tend to be high occupational achievers, whereas Catholics in comparison are low achievers. A study by Haveman and West (1952) of 9,064 Jewish, Protestant, and Catholic graduates showed that 45 percent of the Jews were non-teaching professionals, compared to 34 percent of the Protestants and 32 percent of the Catholics.

Trent (1967) discussed a tendency for Catholics to be less interested in intellectual concerns than Jews and for Catholics and some Protestants, e.g., Baptists, to be more stereotyped in their beliefs than Jews. In a very contemporary study, Schleyer (1972) found that, although Catholic

students in college evidently have assimilated the values of the dominant Protestant culture in many respects, the Jews remained much more intellectually oriented than all other students, while fundamentalist Protestant students remained much less intellectually oriented. Apparently this special value placed on intellectual and educational achievement by Jews accompanies a relatively high level of career aspiration among Jewish women, regardless of sex stereotypes.

CONCLUSIONS AND RECOMMENDATIONS

The assumption underlying this study is that career choices are largely a function of learned roles. In respect to the role learning process, education would seem to have some responsibility. Apparently, however, the educational system in this country has done little to expand women's awareness or interests beyond the sex stereotyped career roles revealed by the data.

Although the study found differences between traditional and non-traditional aspirants, there were no data signifying that women in the traditional group would be less able to perform in non-traditional occupations, and it is suggested that their choices have been powerfully influenced by their role expectations, as is true among other sub-groups in our society. Kenneth Clark, for example, has stated that "one of the most debilitating effects of racial prejudice...is that the victims come to believe in and even cherish their 'inferiority'" (in Homer, 1969). Women seem willing, if not to cherish, at least to accept a position of occupational inferiority.

The point here is not to downgrade the position of teacher or other careers in the traditional category. The point is rather to suggest that women perceive a narrow range of career possibilities because they have accepted the female counterpart of "Uncle Tom," and are fearful of venturing into a man's world, frequently doubting their capacity to fill masculine typed positions. It is also apparent that higher education evidently has little or no effect in changing the situation.

What, if any, are the implications for the higher education process and for college counseling to be gleaned from the foregoing information? There is sufficient documentation, as indicated in the studies described

below, that counselors are ineffective in dealing with women students who are considering the pursuit of male-dominated careers. Non-traditional career aspirations in the present sample requested assistance from counselors with vocational plans significantly less than women of the traditional career group. This may be a function only of the relative degree of certainty about future career goals between the groups. However, it may also mean that women who plan to enter male dominated fields experience less satisfaction from their encounters with counselors.

Although the question cannot be clarified here, as there are no data regarding satisfaction with counseling services, other studies of career counseling indicate a stereotyped approach to women students, particularly among male counselors (Farmer, 1971). More specifically, Thomas (1967) studied the reactions of women and men counselors with female clients holding traditional feminine career goals and those holding non-traditional career goals. He observed that all the counselors, but particularly the male, perceived the traditional feminine goals as more appropriate.

While there is no reason to assume that counselors should be more free of stereotypes than other members of society, the extent of influence they bring into play is a sufficiently important factor to warrant a special attention to the effects of their parochial attitudes. This is not to say that counselors should indiscriminately encourage female clients to pursue occupational plans which present difficult obstacles. Jobs do exist which are closed to female applicants, or to which women have not been welcome. The female client needs to be informed that race tracks do not, as a rule, hire women jockeys, nor do large industries open their doors to female executives; airlines do not employ women as pilots. The client should understand that, while she is free to pursue a career within as large a range of

alternatives as she wishes, it may be impossible to find employment in areas foreign to females. But the choice should be hers, free from a counselor's perception of her feminine limitations or from any rigid determination of what is "appropriate" for women. Limitations based on role expectations--age, color, sex--are pernicious; and counselors, when dealing with the client who doesn't conform to a role model, must examine their conscious biases, and consider the possibility of unconscious ones.

An even more insidious problem than the counselor (who usually deals only incipiently with career goals) is posed by administrators and faculty of institutions of higher education. Admissions, hiring, promotions, and tenure practices are all under attack by women within and outside of academia who are no longer acquiescent to their second class status on the campus. Female students and faculty are demanding child care centers, flexible scheduling for mothers, and a complete revamping of history, psychology, and philosophy curricula. Cognizant of the perpetuation of stereotypic femininity in textbooks, lectures, and course outlines, faculty women are seeking to provide alternative ways of looking at women in a society which has been prejudiced against half the population. They are concerned that young college women have few female examples to follow, and so continue to accept a "conventional wisdom" that places women in an inferior position to men--intellectually, academically, and vocationally.

Medical schools, in particular, have been notorious examples of bias against women applicants (Kaplan, 1971). Although attention in some medical schools is now turning toward the female M.D. student, this country's "backwardness" in this area is "startling, disturbing, and troublesome," according to Kaplan. In a survey of attitudes among educators in American medical schools toward women medical students, he reported that only 9

percent of American physicians are women compared to 24 percent in Great Britain and 65 percent in Russia, and that the discrepancy appears fairly definitely to stem from prejudice among this country's educators. Rationalizations emanate from an underlying conviction that "we in America are right in our values about women physicians, (and) that we are better off following our own policies. . . ."

Kaplan, conversely, stated that "educational conditions and climate appear to be considerably more humane, intelligent, and flexible outside the United States for the woman medical student with or without children." Williams (1971), in a study of women medical students, wrote that women interested in medical careers are "more often than not faced with attitudes ranging from skepticism to downright disapproval." In her report of Radcliffe alumnae who enrolled in medical school, she found that one of the most critical problems faced by these women was the marriage-career conflict. Kaplan's recommendations for dealing with this conflict might serve as a model for all institutions involved with aspiring women professionals. Among them are: 1) flexibility in scheduling to allow for pregnancy and dependent children; 2) free nursuries for small children; and 3) financial help to cover mother surrogates during crisis periods.

It would be especially interesting to determine whether the range of career choices among all women would widen were these recommendations to be implemented in graduate schools as well as occupational institutions. One of the more frustrating features of the present study was the lack of information about underlying causes behind the respondents' limited number of career goals. Although no precise tabulation was made, a look at the data revealed a sufficient number of traditional career respondents who possessed the same composite of characteristics noted among the non-traditional respondents. Assuming that this group of traditional women were

not all looking for stopgap-until-marriage occupations, would they, given the facilitating supports recommended by Kaplan, attempt to enter less traditionally feminine fields? In other words, to what degree were their decisions formulated by apprehensions concerning homemaker-career conflicts? Ginzberg (1966) posed this apprehension as a potent element in the process of vocational choice for a woman, and added to it the inability to make realistic plans without knowing what kind of man she will marry. Will he want a large family? Will his business require her assistance? Will the geographical location or other particulars of his job impose constraints upon her career potential?

If our society were to evolve toward Rossi's (1964) ideal of androgynous role positions, these considerations would become as vital to men as they are now to women. For the present, however, sex status appears to be a salient factor in a woman's professional career, and too often she is expected (by herself as well as others) to subordinate her individualistic goals to those of her husband and family. In the words of Kluckhohn (1954), woman's role is still devoted to things "aesthetic and moral which busy men define as the nice but non-essential embroidery of American life."

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