SOME CHARACTERISTICS OF FEMALE COLLEGE STUDENTS WHO SELECT ACADEMIC MAJORS IN FIELDS OF EXACT SCIENCE AND NON-EXACT SCIENCE: A LONGITUDINAL FOLLOW-UP

by

Paul David Warner

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Acknowledgments

The present study is a follow-up of research conducted by E. Wayne Wright and Richard T. Johnson in 1960. Using subjects from both Utah State University and Brigham Young University, the earlier study compared female students majoring in exact science majors with a random sample of females in other, non-science majors. Comparisons were made in terms of academic ability and achievement as well as vocational interests and personality traits.

The present study is a follow-up inquiry into the current status of the women who participated in the 1960 study.

Sincere appreciation is extended to Dr. Wright for allowing this follow-up to be conducted and for his unaltering dedication to the study of female roles. His guidance inspired and sustained this study.

I would also like to thank those women who participated in this study, not only in 1960, but also today. I received what I consider an exceptionally cooperative response from them.

Finally, to my wife, Sherry, for her patience and support in fulfilling this assignment, I extend a husband's greatful praise.

Paul David Warner
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Abstract

Some Characteristics of Female College Students
Who Select Academic Majors in Fields of
Exact Science and Non-Exact Science:
A Longitudinal Follow-Up

by

Paul David Warner, Master of Science
Utah State University, 1976

Major Professor: Dr. E. Wayne Wright
Department: Psychology

The present study, conducted in 1974, was a longitudinal follow-up of two groups of female subjects who had participated in an earlier study (Wright and Johnson, 1960) while the subjects were university students. One group of the subjects had majored in fields considered at that time to be traditionally feminine majors, i.e. social sciences, art, music, education, homemaking, etc. The other group had majored in fields of exact sciences, which at the time were considered more traditionally masculine. The purpose of the present study was to determine whether differences noted in the 1960 study will exist between these two groups of women relative to their life styles and personality characteristics. One of the one-hundred nine subjects who were presently available to participate in the follow-up study, seventy-six responded to a
mailed questionnaire and adjective check list. Thirty-two of the present respondents had originally been in the non-traditional group (exact-science majors) and forty-four had been in the traditional group (non-science majors).

Of eleven descriptive areas covered by the questionnaire in the follow-up study, only four areas showed a significant difference between the two groups in questionnaire responses regarding age, number who have married since the original study, number of children, number divorced, number who have, or are currently working, and stated reasons for working.

The two groups did differ with regard to the percentage who had changed their college major during school, with a much greater percentage of change among the exact-science group (changing from exact-science to more traditional majors for women). The two groups also differed in the amount of counseling they had received during their college years, although no differences were found in the amount of counseling received subsequent to their college years. More of the exact-science majors had sought and received professional counseling while in school than was true of the non-science group.

Both groups of women perceived a change in societal attitudes towards them as either working women or as housewives, the change being towards greater societal awareness and acceptance, particularly of working women and of non-traditional career choices they may make.
No attempt was made to infer a cause-effect relationship between personality data of the 1960 study and data obtained from the follow-up. The Adjective Check List was used to determine, if possible, whether or not any apparent and/or comparable personality differences could be determined at this time and if so, how such measurable differences might compare to the findings of Wright and Johnson's earlier study. The Adjective Check List was used because it was not deemed feasible to try to obtain by mail, current personality measures on the Minnesota Multiphasic Personality Inventory, the instrument used in the 1960 study. The Adjective Check List was found desirable in that it could be mailed, self-administered, and described personality in much the same manner as does the MMPI using similar adjectives. Caution had to be taken in comparing the similarities in the adjectives obtained from the Adjective Check List and those used in describing scales of the MMPI because the two instruments are not highly correlated and the scores obtained from The Adjective Check List for both groups of women during the present study did not significantly deviate from normative data mean scores.

In comparing the data for both groups of women, no significant difference was found on twenty of the twenty-four scales of Gough's Adjective Check List, indicating that for the most part, both groups of women view themselves presently as having similar personal traits. The four Adjective Check List scales on which the two groups did differ significantly were: **Scale 1** - Total Number of Adjectives Checked:
Scale 4: Unfavorable Adjectives Checked; Scale 13: Intraception; and Scale 14: Counseling Readiness. Although the two groups differed on only four scales of The Adjective Check List, both groups of women were found to have significantly high scores on Scale 19, Aggression.

On the basis of the four scales of The Adjective Check List on which the two groups differed and the aggression scale on which both groups significantly differed from the normative data mean, the non-traditional group women can be described in terms of one or more of the following adjectives:

**Scale 1: Total Number of Adjectives Checked:**
- quiet, reserved, cautious, aloof, original, inventive;

**Scale 13: Intraception:**
- reckless, intemperate, aggressive, easily bored,
- impatient;

**Scale 19: Aggression:**
- arrogant, autocratic, cruel, dissatisfied, forceful,
- hostile, irritable, quarrelsome, sarcastic;

**Scale 24: Counseling Readiness:**
- anxious, ambivalent about status, pessimistic, and possible feelings of being left out;

**Scale 4: Number of Unfavorable Adjectives Checked:**
- placid, obliging, mannerly, tactful, and probably less intelligent.
By comparison, adjectives checked by the traditional group include the following:

**Scale 1: Total Number of Adjectives Checked:**
reserved, tentative, cautious, aloof, original, inventive;

**Scale 4: Number of Unfavorable Adjectives Checked:**
rebellious, arrogant, careless, conceited, cynical;

**Scale 13: Intracception:**
somewhat aggressive, somewhat easily bored, possibly impatient;

**Scale 19: Aggression:**
aggressive, arrogant, autocratic, cruel, dissatisfied, forceful, hostile, irritable, quarrelsome, sarcastic, vindictive;

**Scale 24: Counseling Readiness:**
worried about self, ambivalent about status, left out, pessimistic, and unable to enjoy life to its fullest.

As can be seen from this type of synthesis, the two groups of women are very similar to each other as far as descriptive adjectives are concerned. Overall, however, the non-traditional group as compared to the traditional group, may be more closely described by adjectives such as aggressive, impatient, cautious, irritable, quarrelsome, and hostile. These characteristics give support to the notion that the non-traditional group women are somewhat more aggressive, have greater difficulty in interpersonal relationships, and may seek
achievement at the expense of others. The traditional group, on the other hand, might be more closely described by adjectives such as worried about self, left out, ambivalent about status, rebellious, arrogant, careless, conceited, cynical, and skeptical somewhat unable to enjoy life to its fullest.

However, caution must be taken in ascribing any of the above characteristics to either group in absolute terms, since differences noted on the four scales of The Adjective Check List only suggest likelihood of descriptive adjectives for high and low scores on each scale, but do not suggest that all such adjectives apply to each subject. Also, it should be noted that the apparent contradiction can best be explained by the fact that the adjectives suggested for each scale of the instrument are reported for "high scorers" and "low scorers". Thus, the probability that a given adjective or set of adjectives may apply to a given individual, depends to some extent on the degree to which the individual's score deviates, high or low, from the standardized mean scores.

While statistical differences were found between the present study groups on the four scales indicated above, it must also be noted that their scores did not reflect particularly high or particularly low scores in terms of published mean scores for The Adjective Check List. Thus, their respective scores, while differing from each other, either above or below normative mean scores, were not seen as significantly high or low to generalize absolute applicability of the reported adjectives to the respective groups as a whole. Only the Aggression scale deviated
more than standard deviation above the mean, with scores for the other scales varied within a standard deviation above or below the mean. Thus, the observed differences did not represent intense scores for the study subjects.

The present follow-up study recommended that further research be carried out using groups of women who have committed themselves to either non-traditional or traditional roles in order to better determine common or differing personality traits which might characterize each group.
Chapter I

Introduction

Antionette Brown Blackwell (Scott, 1971) told a congress of women that it would be better for most women to spend some time away from the home. She suggested also that husbands should take their turn at housekeeping and child care. These words were no doubt controversial for her time, for they were spoken in 1870. This suggestion is by no means an outmoded one today, nor does it stir any less controversy among men and women alike. In reply to Antionette Blackwell's speech, Lucy Stone (Ibid., 1971) wrote that after hearing her lecture, she had momentarily been aroused to get out and work in the great world, but continued,

When I came home and looked in Alice's sleeping face and thought of the possible evil that might befall her if my guardian eye were turned away, I shrank like a snail into its shell and saw that for these years I can only be a mother, no trivial thing either. (Scott, 1971)

These two opinions from women with two differing backgrounds seem to identify an area of struggle which has been brewing for many years. In an effort to somehow remedy the struggle, researchers, educators, and counselors have sought to better understand and assist female students and clients. In seeking greater effectiveness with female clients, counselors are attempting to increase knowledge, not only of
counseling tools and techniques, but also of the unique, personal needs and characteristics of female clients. Since one's interests, attitudes, and personal traits contribute to such choices as vocational goals, and since vocational satisfaction ultimately affects other aspects of an individual's life, it is felt that the notion of "traditional" and non-traditional vocational roles for women warrants further research investigation.

While some of the theories of vocational choice have considered the relationships of personality factors, aptitudes, and interests to the vocational choices people make, there is a need to better understand how these traits, interests, and personality characteristics are related to the behavior patterns of people over fairly long-range periods of time.

Much of the research of the 1950's and 1960's in the field of occupational psychology dealt with the relationship between particular personality traits and vocational interest. Melton (1956) stated that there were definitely measurable relationships between personality and vocational interests. Forer (1953) said that occupational choice is an expression of basic personality organization. Roe (1964) similarly stated that occupations, especially "specialized" occupations, attracted people who resemble each other in personality characteristics.

An earlier, unpublished study by Wright and Johnson (1960) conducted at Brigham Young University and Utah State University, investigated possible personality differences between women who chose traditionally-feminine majors in college as compared with women majoring
in the traditionally-masculine fields of exact sciences, hereinafter referred to as the non-traditional group. Wright and Johnson's study showed that women who majored in fields considered at that time to be non-traditional fields for women were significantly different in academic and personality characteristics from a random sample of women in academic majors considered more traditional for females. Wright and Johnson found the non-traditional women to have: (1) greater academic ability; (2) vocational interests that were more in scientific and technical areas and less in the fine arts, literary, and social service areas; (3) vocational interests that were more traditionally masculine than feminine; (4) attitudes viewed as more competitive and less socially compatible with men; and (5) personality traits characteristic of individuals who are typically less happy, less socially skilled, and less socially integrated. For example, exact-science females showed personality traits typically associated with rebelliousness toward family, authority figures, environment, and members of the opposite sex, as well as lack of skill or comfort in interpersonal relationships. They noted also that the experimental subjects reflected attitudes which tended to reject the traditional woman's role as homemaker and housewife. The data of their study suggested that women who were at that time pursuing interests, training, and involvement in more traditionally-male-dominated fields of exact sciences (math, engineering, chemistry, physics) were more likely to evidence feelings of social alienation and
maladjustment, as well as possible heterosexual competitiveness rather than compatibility.

The women studied by Wright and Johnson might presently be considered as fore-runners of today's women liberationists. Although there was no such label as a woman's liberationist at the time, the exact science majors of the Wright-Johnson study had, in effect, chosen educational pursuits somewhat against the traditional roles of women and had pursued occupational interests which were at the time more typically masculine, as defined by personality and interest measures.

Today, a considerable controversial change has been taking place with regards to the woman's role in society. It seems that the dichotomous question of what is the right thing for women to do is as big an issue today as it was in the early days of the sufferage movement. Men and women, alike, today are presenting varying, as well as some conflicting opinions and recommendations in support of their viewpoint. Others are reacting to more subjective emotions which they feel intrinsically, but which in many instances are unsubstantiated by research data.

Grier (1974) typifies the feeling of many by saying that women should be free to do their own thing and that neither men or women should be bothered by the traditionally feminine or masculine labels. Women activist groups have become very adamant in saying that women's creative opportunities are stifled in the home and that motherhood and child rearing are a horrible and cruel trap (Scott, 1971). A great effort is
being made by female activist groups to change the traditional image and subsequent role of women from that of housewife, child-rearer, and homemaker to that of career women, bread-winner, and co-guardian of children (Helson, 1972). Counselors are receiving pressure by many groups to stop "sexist" counseling (Berry, 1972) by encouraging female clients to ignore earlier role stereotypes and to pursue career goals of their own choice, even though some careers may put them more in competition with men. Recently, attempts have been made, and many have succeeded, to do away with all male-female role stereotyping in educational material. This goal is eventually aimed at other forms of media such as television, radio, and various periodical publications. In addition, many activist groups, particularly feminist organizations, have succeeded in obtaining federal and/or state mandates to revise public school textbooks to eliminate reference to role stereotypes and/or role modeling, particularly with reference to greater female assertiveness in breaking from the more-traditional vocational roles sought by women in the past. However, in summarizing the many pros and cons regarding the ultimate values and/or potentially harmful effects of this particular movement, it is clearly apparent that we do not have nearly enough information regarding the long-range effects these viewpoints may have on the women themselves, their families, and ultimately on the societal values and roles they are seeking to shape or change.

For example, there is still a lack of research to assess the eventual effects of women's liberation on women who do subscribe to,
and act in accord with such philosophies. One might well ask, "Do the resultant actions of so-called liberated women indeed lead to greater personal freedom, satisfaction, adjustment, or self actualization"?

The present lack of longitudinal research leaves many questions still unanswered and some counselors thus puzzle over the desirability of counseling female clients toward non-traditional goals, particularly if such pursuits may prove detrimental to traditional values such as marriage, family life, male-female role modeling considered important for normal personality development of children, etc. Appropriate research answers to such queries will enable counselors to better advise clients regarding these kinds of educational and occupational concerns. Whether these questions are answered or not, the vibrating thunder caused by the clash of the opposing points of view will continue to drum in our ears. Unlike the thunder of the heavens, the results of the developing conflicts and uncertainties regarding male-female role modeling, vocational pursuits, the pros and cons of day-care centers, and parent surrogates may well prove more detrimental than helpful in terms of child development, marriage and family stability, and personal-social securities. Present research does not adequately resolve these particular questions with any certainty or assurance of future outcomes.

**Purpose of the Study**

The purpose of the present study was to undertake a descriptive follow-up of the female college subjects studied in 1960 by Wright and
Johnson. Because of the numerous contingent and intervening variables which have no doubt interceded in each of the original subjects' lives since the 1960 study in which these subjects participated, there is no way that a cause and effect relationship can be drawn from choices of the subjects' life styles in 1960 and their present day status. Nevertheless, careful consideration of the follow-up data should allow some inferential generalization.

The overall purpose of the present study was three-fold:

1. to investigate several aspects and/or changes in the subjects' development status since their participation in the 1960 study by Wright and Johnson. Information in this category included descriptive data such as age, education, marital status, number of children;

2. to survey the subjects' attitudes and opinions with regard to their chosen major in college and/or subsequent employment status, particularly in light of societal changes viewed by subjects over the past fourteen years regarding such issues as female roles, current feminist liberation goals, occupational stereotypes, and expectations for females; and,

3. to determine whether earlier differences noted in the 1960 study will exist between the two groups in terms of personality traits and general measures of personal-social well being.

In addition to some general biographical data obtained by a mailed questionnaire, subjects of both groups were also asked (for present
study) to complete the twenty-four scales of The Adjective Check List (Gough, 1965).

Objectives

Specific objectives of the study were as follows:

(1) to determine any difference in the percentage of women in both groups who have been married;

(2) to determine any difference in the percentage of women in both groups who have married and been divorced;

(3) to determine any difference between the married women in the two groups in the number of children born;

(4) to determine any difference in the percentage of women of the non-traditional group as compared to the traditional group who sought counseling during their schooling, or who have sought counseling since the earlier study;

(5) to determine any difference in the percentage of women in each group who finished their university degree;

(6) to determine any difference in the proportion of women in each group who changed their particular area of career emphasis during or after school;

(7) to determine whether the women of the two groups have perceived any change over the past fourteen years in society's attitudes towards them as career women and/or housewives, whatever the case may be; and,
to assess any measurable differences between the two groups within the twenty-four categories of The Adjective Check List (Gough, 1965). These Adjective Check List scales and descriptive traits for each are detailed in the appendix.

Hypotheses

Both groups of women (those in non-science majors as compared to exact science majors) were studied in terms of (1) their vocational or occupational choice after leaving college, and (2) any perceived relationship they may have felt between their vocational pursuits, their subsequent personal development, and/or their present life style, and self-reported adjectives of perceived personal traits.

The objectives of the present study (detailed above), the research findings, of the Wright and Johnson 1960 study, and current literature regarding marital and occupational role choice, suggest three general hypotheses for the present study, as follows:

Hypothesis One: There will be a difference in the present, general life status (as outlined in objectives one through six) for the two groups of women since their participation in Wright and Johnson's study. The non-traditional group women, as compared with the traditional group women, will have (a) a smaller percentage of women who have married, (b) a greater percentage who have married and divorced, (c) fewer children born, (d) a greater percentage of women who have sought
counseling, (e) a greater percentage who finished college, and (f) a
greater percentage who chose careers which were out of the home.

Hypothesis Two: There will be a difference in the way the wo-
men of each group perceive society's attitudes and opinions with regard
to their chosen occupation and/or subsequent status since the time of
Wright and Johnson's study. Women who chose the occupation of house-
wife will not perceive a change in society's attitudes towards them as
housewives, while those who chose to work outside of the home will per-
ceive a positive more accepting change in society's attitudes towards
them as working women (Objective 7).

Hypothesis Three: Differences will exist between the two groups
on one or more of the twenty-four scales of The Adjective Check List
(Objective 8). By inference from Wright and Johnson's 1960 findings
the non-traditional group is expected to show higher than mean scores
on the following scales of The Adjective Check List: number of unfavor-
able adjectives checked, defensiveness, self confidence, achievement,
dominance, order, intracception, exhibition, autonomy, aggression, and
change.

For clarification of the personality traits measured by The
Adjective Check List, (Gough, 1965) the description of each scale as
reported by The Adjective Check List Manual (Gough, Heilbrun, 1965)
is presented in the Appendix.
Definition of Terms

(1) **Traditional Group:** This is the term given to represent those women of Wright and Johnson's earlier study who majored in and were apparently pursuing academic degrees in more "traditionally" feminine areas. The usage of the word *traditional* suggests that society may be moving away from expecting women to pursue only a few types of careers because they seemed at the one time to appear to be more acceptable for women. These areas, which in past years have tended to be more acceptable for women, include such areas as education, art, literature, psychology, homemaking, child development, and music. These types of majors usually require no physical labor and do not, by their nature, place women in competition with men.

(2) **Non-traditional Group:** This is the term given to represent those women of Wright and Johnson's earlier study who majored in and were apparently pursuing, academic degrees which have traditionally been seen by society as more suitable for men only, such as engineering, physics, math, chemistry, biology and zoology. Because of the earlier notion that men were superior to women both physically and intellectually, it was held by a majority of society that only men should occupy these types of careers.

(3) **Exact-science:** This is a term used to identify those disciplines which employ so called sound scientific principle in their theory and research. The underlying premis of disciplines within the exact-science area suggests that theorums and postulates related to each
discipline are based on quantifiable and discrete data which if replicated would yield a high (0.90 or above) probability of duplication under similar circumstances. These disciplines would include all of the physical and biological sciences, i.e. physics, chemistry, biology, geology, engineering, mathematics.

(4) **Non-exact Science:** This is a term used to identify those disciplines which employ so-called less exact or specific empiricism in their theory and research. The theory of non-exact science areas tend to be more empirically based or depending on experience or observation alone, rather than depending on scientific "fact." This definition suggests that a greater degree of variability exists within non-exact science areas, wherein highly correlated replications (0.90 or above) would be rare and difficult to obtain. Non-exact science disciplines would include such areas as art, psychology, sociology, music, literature, and education.

**Limitations of the Study**

A follow-up study of this nature has inherent in it several strengths and weaknesses. The specific limitations of the present study include (1) aspects associated with the mailed questionnaire; (2) inability to determine the reliability of the mailed Adjective Check List; and, (3) inability to use the the Minnesota Multiphasic Personality Inventory in the follow-up and to make a direct comparison of both groups as they now exist and as they existed in the earlier study.
Although several precautions were taken to insure satisfactory results from the questionnaire, i.e. use of a pre-tested questionnaire and insuring for anonymity for respondents, there are still some limitations in using a questionnaire in this type of study. First, it is extremely difficult to insure that the responses that are obtained from a mailed questionnaire are truthful. It is impossible to be completely sure that (1) the respondents are not being maliciously untruthful; (2) that they understand the questions being answered; and, (3) they are trying to answer as they feel they "should" rather than with facts.

The second limitation of the present study deals with the problem of insuring reliability of response to the adjectives of The Adjective Check List. There is no means available to insure that the adjectives marked by each participant were (1) representative of each respondent; or, (2) that the meaning of each adjective was understood by each respondent.

The third limitation of the present study exists as a result of not being able to use the Minnesota Multiphasic Personality Inventory. Had it been possible to use the MMPI in the present study, direct comparison of significant personality traits of the respondents of the present study could have been made with participants of the earlier study. The Adjective Check List was used because it can be compared to the MMPI. However, the correlations between scales of the MMPI and the ACL are low and somewhat suspect.
Research of the 1950's and early 1960's showed that some relationships existed between vocational choice and personality. Melton (1956) stated, "There are definitely measurable relationships between personality and vocational choice and interest." Occupational choice, or the lack thereof, was seen by Forer (1953) to be a basic expression of personality organization which can and should satisfy basic needs. In contrast, however, Figler (1968) stated that occupational choice was a compromise between occupational information available and the interest of the person. Figler's theory tends to support the notion that better informed females will choose careers more in line with their own particular abilities and interests when given the opportunity.

It was the thinking of the 1950's that women who pursued vocations requiring a college education found themselves in limiting roles. For example, Donlon (1958) showed that a persistent belief among many people was that women, for the most part, did not profit from higher education. Educational surveys at the time further showed that the ratio of male to female students in the exact science fields was much greater than the male to female ratio in most other academic majors. One investigation (Sedlecek, 1969) reported that women who started college
majors in exact science fields (considered non-traditional for women at the time) showed a very apparent drift away from these fields of study as they progressed in college. This shift of exact-science females into more traditional majors tends to support the notion of other studies which emphasize the importance of choosing a vocation consistent with one's sexual role (Sedlecek, 1969). Sedlecek further noted that better than 90% of college females were preparing for vocations in traditionally-female fields.

In contrast, Zapolean (1953) reported that the proportion of women in professional work (12%) was higher than that of men (7%). The difference was due to the number of women engaged in teaching and nursing fields, which are considered traditionally acceptable for women. A subsequent survey by Kraushaar (1957) showed that during 1955, only seven out of every hundred women who received a B. A. or B. S. degree had majored in science.

Research has also supported the traditional stereotype of the "scientific girl" as being out of her normal role. Singer and Steffe (1954) reported that strong sexual stereotypes were highly developed for high school girls, indicating that high school girls have very clear cut ideas as to what is and is not traditionally acceptable for females. The research of Singer and Steffe showed high school girls as having definite preference for jobs characterized by interesting experiences and social service.
In a study by Frand, (1955) women who had chosen to go on to higher education reported that they felt they had deviated from their concept of the average, traditional woman, and thus from the ideal woman. A later study suggested, however, that females felt just as much social pressure to go to college as men and that they were not deviating from the ideal woman by doing so (Bott, 1968). Traditional women's magazines of the day (e.g. Good Housekeeping, 1960) portray the stereotypes of the working woman as being unfeminine. An article carried in the Saturday Evening Post (Gray 1962), entitled "Trapped Housewife," suggested that a conflicting force between a choice for a career vs home, was pulling violently at women. Commenting on the Saturday Evening Post article, Gray (1962) suggested that the apparent conflict was not at all between a career or home for the woman, but towards being a good housewife.

It was shown by Hoyt and Kennedy (1958) that the needs of career oriented women were for intellectual knowledge and understanding and for accomplishment of concrete goals. They found that women who pursued careers evidenced a high need for achievement and intraception (curious, insightful), while woman who chose more traditional roles of homemaker had high heterosexuality and high needs for succorance (support, acceptance). Homemakers, who supposedly followed the cultural stereotype, were also found to be motivated by needs for affection and acceptance. Conversely, females with greater aspirations for intellectual knowledge and personal advancement were shown to differ
from low aspirers in having greater difficulty in their interpersonal relationships (Dynes, Clarke, and Dinity, 1959). In addition, Holland (1957) indicated that scientists as a group were less social than any other group. In contrast to these findings, Jabury (1968) found that women who chose careers of a non-traditional nature did not differ significantly from women in more traditional occupations with regards to their own social skills and social acceptability.

A study comparing female science majors with a group of liberal art majors (Fjeld, 1952) found that the science group showed greater preference for thinking, philosophizing and speculating, as well as stronger preferences towards activities involving the use of authority and power.

Research by Christensen and Swehard (1956) reported that college senior women who were more marriage-minded than employment-minded would prefer being their same sex if they could be "born again." It was further reported by White (1959) that women with reportedly more masculine interests were more dissatisfied with themselves than were women with reportedly more feminine interests.

In an unpublished study by Wright and Johnson (1960) various test measures of females in exact science majors evidenced traits which described these women as follows: (1) they were shown to have greater academic ability; (2) vocational interests of the exact science women were traditionally more masculine than feminine (i.e. scientific and technical rather than artistic, literary, and socially oriented); and,
(3) the exact-science group had personality traits indicating more unhappiness, less social skill, less social involvement, greater competitiveness rather than compatibility with men, general uneasiness in interpersonal relationships, and tendencies towards rebelling against family and other authority figures. The results of Wright and Johnson's study seemed to support the premise that as women's interests, capabilities, and training in exact science increased, so did their apparent feelings of social alienation and maladjustment.

In recent years additional research interest has been directed to the study of female characteristics in reference to traditional role stereotyping, as well as in reference to various social movements for women to pursue higher education and out-of-home careers. For example, the personality characteristics and ideology of women who pursue non-traditional roles were shown by Cherniss (1972) to be similar to those of the "new left" or counter-culture. As with earlier studies cited, she found these women to be high achievers, very autonomous, and more assertive than women who chose more traditional roles. She further showed that non-traditional women tend to come from mother-dominated families. This finding lends support for the earlier findings of Wright and Johnson (1960). Of the women studied by Cherniss (1972), most were unmarried, and those who were married wished they were not.

O'Keefe (1972) found women who were sympathetic to the aims of women's liberation to be more autonomous in nature, less self-abasing,
more achievement oriented, and less likely to plan to have families. These characteristics of women liberationists are cited because of their similarity to the characteristics of non-traditional women (usually associated with women who choose non-traditional roles and occupations, whether or not they are active feminists). O'Keefe also found them to be less feminine than women who were unsympathetic with the women's liberation movement. Similarly, a study by Fowler (1971) found non-traditional women to be less skilled and less developed in areas of nurturance, self-confidence, self control, and personal adjustment, whereas women who pursued more traditional roles evidenced greater self-control, self confidence, and personal adjustment. Further, Appleton (1969) showed that more nurturant females came from parents where the need to express nurturance was higher, and that women who were more nurturant preferred person-oriented occupations.

The above findings seem to suggest that, for females, the higher the achievement motivation, the lower her self acceptance is likely to be (Navin, 1969). (It should be noted here, that while the same implication might in time prove true with males also, the present study did not explore research with male subjects). In contrast to the above findings, Baruch (1974) suggested that traditional women have greater difficulty in cognitive development, and that the life at home creates a devaluing situation of sensory deprivation for women. She further suggests that adjustment and self esteem are negatively related to being feminine and to typically-traditional role choices.
Rapaport (1971) found that more working women reported unhappiness about themselves than did typical housewives, i.e. women who were not working outside the home. Rapaport also found that as women became more work and career oriented, the percentage who report happy marriages decreases. Supportive of the findings of Rapaport, Soysa (1962) found that women of both high and low socio-economic levels rated the role of homemaker as a more important role and source of satisfaction for them. She further found that highly independent women admitted to having high intra-self conflicts. On the other hand, Hunter (1968) found that conformity for females did have some relationship to the amount of insecurity they felt, suggesting that the traditionally-conforming female might have greater feelings of insecurity and, therefore might seek a situation which would satisfy the needs for security.

Tarvis (1971) reported that married, working women have apparently tended to become more unhappy about combining work and marriage. Marital happiness is reported to be a function of being able to choose among alternatives. Women have also been found to be less happy when work outside the home was undertaken because of necessity rather than choice (Orden, 1969).

In describing the consequences of the recent feminist's theories on the stability of family life, Levine (1972) predicted that there would be a disruption of family stability and greater marital discord. He further stated that the probability for an enduring marriage relationship
would be decreased for women who embrace the non-traditional theories. Greenburg (1973) stated the fear that if family stability is shaken and enduring marital relationships are threatened, such events would ultimately lower the quality of life for all. Linner (1971) supports this concern in suggesting that we cannot be sure to what extent the presently changing roles of women will lead to insecure children with sex identity problems.

Although the characteristics which describe non-traditional women today do not significantly differ from the descriptions of non-traditional women of the 1950's and 1960's, counselors are being urged from many sides to stop "sexist" counseling (Haener, 1971). Some feel that counselors should become pro-feminists (Rice, 1973). Vetter (1974) reports that counselors, both male and female, are guilty of stereotyping females. She refers to the bias of some counselors with regard to working women as a "serious problem." Thomas (1968) indicates that counselors' perceptions and acceptance of women's vocational goals have typically placed more appropriateness on goals which were considered traditionally feminine.

Gardner (1971) says that counselors should stop encouraging women to pursue the traditional roles of housewife and homemaker, that women should have social, economic, and political equality with men as well as control over their own bodies, and that child-rearing should be the responsibility of all. On the other hand, Mendick (1972) feels that before counselors encourage women to break from the
traditional role model of mother and wife and enter into the competitive world of working men, more data are needed regarding the potential effects and outcomes on families, as well as on the women themselves who embrace these non-traditional values and roles.

In addition to the pressures being placed on counselors to stop "sexual stereotyping" of females, a concerted effort is being made by some professional and activist groups today to do away with educational materials, lectures, etc., which stereotype sex roles as appropriate for one sex or the other. While such movements emphasize the importance of sexual equality, they, in fact, have the effect of creating a climate or attitude of "sameness" rather than merely equality or rights (Westervelt, 1973).

In light of traditional, as well as more recent research and theoretical literature on this somewhat-controversial and emotionally-charged issue, it was felt that a follow-up study of the women who participated in Wright and Johnson's 1960 study would provide some information with regard to several developmental aspects of these women's lives. The present follow-up study was designed to obtain current data regarding these subjects' present marital and/or vocational status and to survey their attitudes and opinions with regard to their chosen occupation in light of more recent societal changes.

The Adjective Check List (1965) has been used as a self-report measure as well as an observational tool in personality assessment (Gough and Heilbrun, 1965). The value of the ACL has become
increasing more apparent because it gives precise, definable, and
descriptive lists of adjectives for high and low scorers on each scale,
which makes this tool more amenable for use with other personality
assessment devices such as the Minnesota Multiphasic Personality
Inventory, the California Personality Inventory, the Edwards Personal
Preference Scale, as well as projective devices such as the Thematic
Apperception Test, and the Holtzman Ink Plot Test (Shipman, 1965;
Klinger, 1968). The ACL has been used successfully as a tool for asser­
taining a person's level of self-image and level of self-acceptance
(Stringer, 1967; Rosen, 1968; Viney, 1966).

Not only is the ACL a valuable tool in describing a person's
personality, but it has been found by Heilbrun (1962) to be a valid pre­
dictor of behavior in people. In a study conducted by Heilbrun (1962)
attempts were made to predict, through the use of the ACL, those stu­
dents in the freshman class who would most likely drop out of college
during the first year. He found that low scores on the ACL scales of
"achievement," "endurance," "order," and "heterosexuality" were
valid indicies and predictors of first year college drop-outs.

The ACL has also been used to describe the personality charac­
teristics of women considered to be traditional or non-traditional in the
role orientation. In a study conducted by Helson (1968), the ACL was
used to describe highly creative, non-traditional women. She found that
adjectives such as "self-centered," "tackless," "thankless," "demand­
ing," "brooding," "controlling," and "need for autonomy" were all
descriptive of this group of non-traditional women. She also found that the non-traditional group women were more resistant to outward expressions of femininity. Similarly, Whittaker (1969) found the ACL useful in describing the characteristics of conforming and non-conforming college females. He found that non-conforming females tended to score higher on such scales as Need for Autonomy, Change, Succorance, Exhibitionism, and Heterosexuality. Low scorers were described as having low need for Dominance, Achievement, Order and Endurance.

Mason (1965) also found the ACL and CPI, conjointly, as effective means for assessing the personality variables in gifted people.

Heilbrun (1968) used the ACL to test the adjustment of high and low scoring females on the feminity scales of The Adjective Check List. His findings suggest that highly feminine females and higher social orientation and lower goal directedness, whereas low-feminine females (more-masculine) had greater goal directedness and interpersonal sensitivity. He further reported that a greater number of masculine girls were experiencing disabling problems than were feminine girls, and he indicated that the masculine females were more socially alienated than their more-feminine counterparts. Support for these findings is also found in an earlier study by Heilbrun (1964), in which highly feminine girls were reported to be socially more adjusted, while females who tried to be both masculine and feminine, or who were trying to mix their sexual identity, were considerably less adjusted than those who were either strictly feminine or very masculine.
Heilbrun (1963) also used the ACL to test the hypothesis that social-role demands of college and feminine sex-typed roles were to some extent incompatible and that this resulted in sex-role confusion. The Edwards Personal Preference Scale and The Adjective Check List were used to test Heilbrun's hypothesis, which was supported by the data of his study. For instance, he found more sex-role confusion among women who participated in highly competitive programs. Thus, one may anticipate some sex-role confusion among vocational fields and/or situations where they are expected to maintain a sense of femininity yet compete with men in more masculine ways.

The ACL was also used by Weismann (1970) as a measure in describing high and low achieving females and found that the ACL was a valuable tool in describing both groups of females.

In summary, the ACL has been shown by Gough (1965) and others to be a valid measure of personality. As in depth discussion of the validity and reliability of the ACL will be presented in Chapter III (Methods of Procedures, p. 32).

Summary

The above review of literature related to women's roles and expectations has attempted to synthesize a number of earlier studies and to introduce new social concepts related to them. In doing so, it has become apparent that although this subject has been one of almost continual debate for many years, research on the subject still remains
controversial and inconclusive. As was reported by Forer (1953) and Cherniss (1972), vocational and role choice is an expression of personality characteristics of people, with similar types of people pursuing similar types of jobs, and with career choices generally reflecting a person's physiological make-up.

According to Wright and Johnson (1960), women who chose non-traditional majors in school were, at that time, characterized by distinguishing personality traits which set them apart from women who chose more traditional female roles. Wright and Johnson's study supported the notion that women who were pursuing non-traditional roles appeared to be more masculine than feminine in their personality traits and that they also evidenced types of adjustment problems, either psychological or sociological in nature.

Rapaport (1971) found that working women reported feeling unhappy about themselves more than did women who were not working outside the home and Soysa (1962) found that highly independent women admitted to having high intra-self conflict. On the other hand, Hunter (1968) found that traditionally-conforming females had greater amounts of insecurity, and, therefore, sought life situations where security needs could be met.

Levine (1972) typified the ambivalence expressed by many professionals who deal with women, i.e., that there is likely to be a disruption of family stability and greater marital discord for women who
pursue non-traditional roles. Greenburg (1073) feared that such events would eventually lower the quality of life for all.

As reported by Vetter (1974) counselors are currently being encouraged to become advocates of the feminist theories and to stop "sexist" counseling. She calls this stereotypical bias of counselors a "serious problem" and a threat to women. Westervelt (1973) further reports the need to put an end to sex role stereotyping in educational literature.

Certainly from this survey of literature, one has the feeling that we know too little about the ultimate effects of feminist theories not only in terms of direct implications for women themselves, but also with regard to potential questions and possible problems related to child rearing, family stability, and ultimately to the values and stability of society as a whole.
Chapter III

Method of Procedure

The description of procedure used in this study includes a dis­
cussion about the population and sample used in this study, the develop­
ment and administration of the questionnaires, and the analysis of the
data.

Population and Sample

The subjects for the present study were drawn from a population
of former college females who had participated in an earlier study by
Wright and Johnson (1960). The original study sample consisted of two
groups of women comprising an experimental and control group. The
experimental group, considered earlier as "non-traditional" women in
terms of their choice of college major, (N=60) consisted of all female
students registered at Utah State University and at Brigham Young
University in the fields of Engineering, Chemistry, Mathematics, and
Physics. A control group (N=70) was drawn by a table of random num­
bers from the female freshman students registered at Utah State Univer­
sity and Brigham Young University in all other academic majors. The
control group was considered to be more "traditional" for women in
their choice of college majors.
For purposes of the present follow-up study, permission was received from both Brigham Young University and Utah State University to use alumni records to obtain addresses of the women used in the earlier study. Of the 130 subjects in the original study, 58 addresses of the original control group subjects and 51 addresses of the original experimental group were found, providing a potential population of 109 subjects for the present study. Of the 109 subjects located and contacted, 32 of the experimental group and 44 of the control group responded to a mailed questionnaire, providing a total N of 76 (69.7%) in the present study sample. The subjects of the earlier study ranged in age from 17 years to 48 years of age. The respondents of the present study ranged in age from 31 years to 62 years of age.

Development of the Questionnaire

In developing a questionnaire to be sent to the subjects, an attempt was made to formulate questions in such a way that past demographic detail could be ascertained, as well as past and present attitudes regarding individual perceptions of their respective roles as women, particularly in reference to recent societal changes and pressures relative to women's changing roles. By reviewing the literature in relation to the purpose of the proposed study, questions were drawn up to meet the intended objective for the follow-up study.

The questionnaire was designed to cover two distinct aspects of each woman's life. First, questions were developed to obtain
descriptive and factual data regarding each woman's current educational and marital status. The second area of questions dealt with the personal perceptions of the women in each group with regard to societal attitudes towards them as working women or as housewives, particularly in terms of their present perceptions as compared with the time they left college. The resultant questionnaire, as used in the study, is found in the Appendix (p. 85). The questionnaire was tested for clarity and structural difficulties by trial testing with twenty women at Utah State University. Recommendations for changes in the questionnaire were made by this group and the questionnaire was refined before it was mailed to the subjects in the present study. However, no attempt was made to determine validity or reliability data from the questionnaire.

Assessment of Self-descriptive Personal Traits

It was concluded at the outset of the study that no attempt would be made to infer a cause-effect relationship between the personality data of the 1960 study and present life style data obtained from the follow-up questionnaire, since there was no way of controlling the numerous confounding variables which have affected each of the subject's life since the original 1960 study. Also, it was not deemed feasible to try to obtain, by mail, current personality measures on the Minnesota Multiphasic Personality Inventory, the instrument used in the 1960 study. It was felt, however, that some sort of personalological data
should be obtained, if possible, to see whether any apparent and/or comparable personality differences could be determined at this time, and if so, how such measurable differences might compare to the findings of Wright and Johnson's earlier study. Thus, in order to cover a wide range of personality factors and to utilize an instrument more easily administered by mail, The Adjective Check List (Gough, 1965) was sent to each subject along with the mailed questionnaire.

The Adjective Check List provides data dealing with twenty-four areas of personality and is less "clinically threatening" than is the case with the Minnesota Multiphasic Personality Inventory. However, the Adjective Check List does provide indications of some descriptive traits which can, and have been compared with various scales of the MMPI. Some correlates of The Adjective Check List scales with MMPI scales are discussed below.

The information received from the questionnaire and The Adjective Check List was separated by the original experimental control groups for analysis of the data, and comparisons of current subject responses were made in terms of the earlier study.

The Adjective Check List has been shown by Gough (The Adjective Check List Manual, 1965) as having a test-retest reliability of between 0.45 and 0.85. These values, obtained from one hundred subjects in a self-report situation, indicate that The Adjective Check List can be used satisfactorily as a mailed, self-report instrument.
A considerable fund of research and technical information on the validity of the ACL is to be found in studies cited in the bibliography of The ACL Manual. Table 1 reveals correlations between scales of the ACL and the Minnesota Multiphasic Personality Inventory (MMPI). It should be noted that the five scales of The Adjective Check List which were found to be significant to this study, and which are to be discussed in detail below are starred (*). According to correlation studies between the ACL and the MMPI, a correlation score equal to or greater than 20 is positive at the 0.05 level of significance, and a correlation score equal to or greater than 25 is positive at the 0.01 level of significance (Gough, 1965). The following discussion of the data presented for Table 1 is edited from The Adjective Check List Manual, as presented by Gough (The Adjective Check List Manual, 1965).

As can be seen from Table 1, scale 1 of the ACL (Total Number Checked: No Ckd) shows a fairly high positive relationship (31) to Ma (Hypomania) on the MMPI, and a slightly significant relationship (21) to the F (fake) and K (correction) scales (−20). Scale 4 of The Adjective Check List (Number of Unfavorable Adjectives Checked: Unfav) shows a slightly positive correlation (24) to the F scale and a slightly negative correlation (−28) to the K scale. Scale 13 (Intraception: Int) shows a slightly positive correlation (21) to the L scale and the K scale (23) and a slightly negative correlation (−25) to the F scale. Scale 19 (Aggression: Agg) shows a slightly negative correlation (−23) to the...
Table 1.
Correlations Between Scales of the Adjective Check List and the Minnesota Multiphasic Personality Inventory

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<td>-13</td>
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<tr>
<td>Aut</td>
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<td>-13</td>
<td>-07</td>
<td>-18</td>
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<td>00</td>
<td>-17</td>
<td>-23</td>
<td>-11</td>
<td>14</td>
<td>-17</td>
</tr>
<tr>
<td>*Agg</td>
<td>23</td>
<td>16</td>
<td>-15</td>
<td>01</td>
<td>-11</td>
<td>-07</td>
<td>17</td>
<td>01</td>
<td>-08</td>
<td>-03</td>
<td>00</td>
<td>20</td>
<td>-14</td>
</tr>
<tr>
<td>Cha</td>
<td>-08</td>
<td>-10</td>
<td>-05</td>
<td>-23</td>
<td>-33</td>
<td>-02</td>
<td>16</td>
<td>-19</td>
<td>-03</td>
<td>-24</td>
<td>-10</td>
<td>20</td>
<td>-37</td>
</tr>
<tr>
<td>Suc</td>
<td>-13</td>
<td>15</td>
<td>-22</td>
<td>09</td>
<td>22</td>
<td>00</td>
<td>13</td>
<td>11</td>
<td>-02</td>
<td>26</td>
<td>10</td>
<td>-05</td>
<td>20</td>
</tr>
<tr>
<td>Aba</td>
<td>04</td>
<td>06</td>
<td>-05</td>
<td>16</td>
<td>35</td>
<td>11</td>
<td>-02</td>
<td>11</td>
<td>14</td>
<td>34</td>
<td>10</td>
<td>-22</td>
<td>38</td>
</tr>
<tr>
<td>Def</td>
<td>14</td>
<td>-12</td>
<td>01</td>
<td>08</td>
<td>28</td>
<td>10</td>
<td>-12</td>
<td>02</td>
<td>16</td>
<td>25</td>
<td>01</td>
<td>-25</td>
<td>28</td>
</tr>
<tr>
<td>*Crs</td>
<td>01</td>
<td>12</td>
<td>-08</td>
<td>16</td>
<td>37</td>
<td>-02</td>
<td>28</td>
<td>20</td>
<td>02</td>
<td>28</td>
<td>12</td>
<td>-22</td>
<td>49</td>
</tr>
</tbody>
</table>

*13 standard MMPI scales  \( r \geq 20, p < 0.05; \ r \geq 25, p < 0.01. \)
L scale of the MMPI and a slightly positive correlation (20) to the Ma (Hypomania scale). Scale 24 of The Adjective Check List (Counseling Readiness: Crs) shows a fairly strong correlation to the D (Depression) scale, a negative correlation to the Pd (Psychopathic deviance) scale, a positive correlation to the Pt (Psychoasthenia) scale, a slightly negative correlation to the Ma (Hypomania) scale, and a strong positive correlation to the Si (Social Introversion) scale of the MMPI.

Procedures

A coded letter of explanation and request to participate in the follow-up study accompanied each questionnaire and Adjective Check List sent to the study subjects. Since the participants were informed that confidentiality would be maintained, plus the fact that a follow-up letter was to be sent if needed to increase the number of returns, each individual participant was assigned a code number which was placed on each letter sent. A second follow-up letter was mailed six weeks after the original letter. Table 2 shows the number of questionnaires mailed and the percent returned by the woman of both groups.

Analysis of the Data

Since much of the data obtained from the questionnaire was descriptive in nature, a chi-square analysis was used to test hypothesis 1 of the study (Objectives 1-7) dealing with any differences in questionnaire responses of women who had majored in exact-sciences (experimental group) as compared with the non-science (control group) subjects. In addition, a one-way analysis of variance was used to determine any
Table 2

<table>
<thead>
<tr>
<th>Group</th>
<th>Number sent out</th>
<th>Number returned</th>
<th>Number not returned</th>
<th>Percent returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-traditional</td>
<td>51</td>
<td>32</td>
<td>20</td>
<td>62.74</td>
</tr>
<tr>
<td>Traditional</td>
<td>58</td>
<td>44</td>
<td>17</td>
<td>75.86</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>76</td>
<td>33</td>
<td>69.72</td>
</tr>
</tbody>
</table>

differences between the two groups in terms of mean scores on the twenty-four scales of The Adjective Check List (Hypothesis 3, Objective 8).
Chapter IV

Presentation and Discussion of Findings

Findings Regarding the Hypotheses

The total sample of subjects (N=76) who responded to the present study represented 69.73% of the original sample studied by Wright and Johnson in 1960. Both groups of women (experimental and control) had been found in the earlier study to be equivalent in mean age and in the general goal of a college degree. It was with regard to this sample of women that the hypotheses of the present follow-up study were formulated and tested. A discussion of the results obtained in the present study are presented below in order of each of the study hypotheses and objectives.

Hypothesis 1: There will be a difference in the present, general life status (as outlined in Objectives 1-6) for the two groups of women since their participation in Wright and Johnson's 1960 study. The non-traditional group women as compared to the traditional group women will have (a) a smaller percentage of women who have married, (b) a greater percentage who have married and divorced, (c) fewer children born, (d) a greater percentage of women who sought professional counseling, (e) a greater percentage who finished college, and (f) a greater percentage who chose careers which were out of the home. Findings
related to the six objectives specific to Hypothesis 1, as mentioned above, are reported in the order in which they were presented in the objectives section (p. 8).

Objectives 1 and 2 of the study were to determine any reported differences in the percentage of women in both groups who are presently married or who have been married and/or divorced. Chi Square Analysis of marital and divorce status for both groups is shown in Table 3.

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Single women</th>
<th>Married women</th>
<th>Divorced women</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-traditional</td>
<td>1</td>
<td>30</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Traditional</td>
<td>1</td>
<td>42</td>
<td>1</td>
<td>44</td>
</tr>
<tr>
<td>Column total</td>
<td>2</td>
<td>72</td>
<td>2</td>
<td>76</td>
</tr>
</tbody>
</table>

Raw Chi Square = 0.10795  
Significance = 0.9475\(^{(1)}\)

\(^{(1)}\) Each of the chi-square tables provides a raw chi-square score. Each table also provides a "significance" value. This significance or confidence value represents the probability at which the relationship being described occurred by chance alone. For example, Table 3 shows Significance = 0.9475. This means that the chi-square of 0.10795 shown in Table 3, has a 94% probability of occurrence by chance factors alone. Thus, it is not significant. Since all chi-square values are to be considered significant at the 0.05 level of probability, the significance values shown on the tables must = 0.05 or less for statistical significance.
There is no significant difference in the numbers of women for either group who are presently married, single, or divorced. Thus, the marital status for the two groups of women is equivalent.

Objective 3 deals with the average number of children born to women of both groups, and this information is summarized in Table 4.

Table 4

Average Number of Children Born to Both Groups of Women

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Total number of children reported</th>
<th>Average number</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional group</td>
<td>44</td>
<td>162</td>
<td>3.68</td>
<td></td>
</tr>
<tr>
<td>Non-traditional group</td>
<td>32</td>
<td>122</td>
<td>3.81</td>
<td>0.1048</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>284</td>
<td>3.74</td>
<td></td>
</tr>
</tbody>
</table>

No difference was found to exist between both groups in the number of children they have. Both groups of women tend to marry as frequently and to have proportionately equal numbers of children as part of the marriage arrangement.

In order to compute whether or not the numbers of children born to each group was significantly different between the two groups, a t-test for related means was used. A non-significant value (0.05 level) of 0.1048 was found by comparing the two groups. A t-test was used because this particular area of the study was not amenable to chi square analysis.
Objective 4 deals with the percentage of women of the non-traditional group as compared with the traditional group who sought counseling either during their schooling or since leaving college. Table 5 shows the number and percentage of women in both groups who reported that they sought professional counseling during college. Table 6 represents the number and percentage who reportedly have done so since leaving college.

### Table 5

**Percentage of Women Who Sought Counseling During College**

<table>
<thead>
<tr>
<th>Group</th>
<th>Sought counseling</th>
<th>Did not seek counseling</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-traditional</td>
<td>12</td>
<td>20</td>
<td>32</td>
</tr>
<tr>
<td>Traditional</td>
<td>5</td>
<td>39</td>
<td>44</td>
</tr>
<tr>
<td>Column total</td>
<td>17</td>
<td>59</td>
<td>76</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 5.86054

Significance = 0.0155*

*Significant at 0.05 level.

Table 5 shows that there was a significant difference at the 0.01 level in the percentage of women who sought counseling during their college education. A greater percentage of the non-traditional women sought professional help during their college years than did the traditional group of women. This finding may lend support to one of the conclusions of Wright and Johnson's earlier data, which suggested that women of the non-traditional group evidenced greater adjustment problems than those of the traditional group. Although the reasons for
their seeking counseling during their education was not determined, this finding may indicate that the non-traditional women may have had greater feelings of personal discomfort and/or questions about their academic majors (exact-sciences) or career goals. If so, one might conclude the possibility of societal pressures on women who pursued majors outside traditional norms. It should be noted, however, that seeking counseling, per se, may also have represented positive rather than merely maladaptive behavior and that the lack of information regarding reasons (or nature of problems) for which the subjects sought counseling leaves the implications of this finding unclear.

Table 6

<table>
<thead>
<tr>
<th>Group</th>
<th>Sought counseling after college</th>
<th>Did not seek counseling after college</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-traditional</td>
<td>3</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>Traditional</td>
<td>5</td>
<td>39</td>
<td>44</td>
</tr>
<tr>
<td>Column total</td>
<td>8</td>
<td>68</td>
<td>76</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.00992  
Significance = 0.9207

Table 6 shows that there was no difference between the two groups in the percentage of women who sought counseling after college. Thus, the higher incidence of counseling sought by the exact-science majors during college did not persist after leaving school. One might
conclude, therefore, that any felt needs for counseling after college were essentially the same for both groups of women.

**Objective 5** attempted to determine if there is a difference in the percentage of women in each group who finished their university degrees. Table 7 shows the percentage of women in both groups who finished their college degrees.

**Table 7**

<table>
<thead>
<tr>
<th>Group</th>
<th>No degree obtained</th>
<th>Obtained RS</th>
<th>Obtained MS</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-traditional</td>
<td>9</td>
<td>19</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Traditional</td>
<td>17</td>
<td>23</td>
<td>4</td>
<td>44</td>
</tr>
<tr>
<td>Column total</td>
<td>26</td>
<td>42</td>
<td>8</td>
<td>76</td>
</tr>
</tbody>
</table>

Raw Chi Square = 0.97199  
Significance = 0.6151

*Percentages are computed by dividing the row total into the number completing college degrees.

Table 7 shows no significant difference in the percentage of women in both groups who completed B. S. or M. S. degrees. However, while not statistically significant a slightly greater percentage of the non-traditional group women did complete degrees (Row 1, Table 7), and this trend
is consistent with the implications of Wright and Johnson's earlier study, and with the literature review, which suggest that the non-traditional group of women are more educationally motivated. Thus, the present data lends some credence to the general hypothesis that non-traditional women have higher achievement needs than traditionally oriented women, particularly with respect to higher educational goals.

Objective 6 of this study was to determine if a greater percentage of women of either the non-traditional or traditional group changed their particular area of career emphasis either during or after their college years. To determine whether or not career emphasis changed for either group, specific data dealing with career choice and any subsequent change during college, was obtained and that data are summarized in Table 8. This table allows us to see what percentage of subjects in each group stayed in their original college major as opposed to the percentage for both groups who changed their major.

Table 8 shows that a significant difference was obtained between the two groups of women in the percentage who changed their choice of majors. While all of the traditional group women stayed in traditional majors during their college years, 31.3% of the non-traditional group changed their majors, i.e. from an exact-science major to a more traditionally accepted major for women. Again this finding supported the notion that it is apparently more difficult for women to cope with societal expectations when they pursue careers which are traditionally thought of as less appropriate for women (and/or traditionally more male
Table 8

Percentage of Women Who Changed College Major

<table>
<thead>
<tr>
<th>Group</th>
<th>Women in Non-traditional majors</th>
<th>Women in traditional majors</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-traditional</td>
<td>22 (68.8%) stayed in original majors*</td>
<td>10 (31.2%) changed majors</td>
<td>32</td>
</tr>
<tr>
<td>Traditional</td>
<td>0 (00.0%) changed majors*</td>
<td>44 (100%) stayed in original majors*</td>
<td>44</td>
</tr>
<tr>
<td>Column total</td>
<td>22</td>
<td>54</td>
<td>76</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 39.29709  Significance 0.0000(1)

*Percentages for each category are computed by dividing the row total by the frequency for each square.

dominated. It should also be noted from Table 8 that while 68.8% of the women in the non-traditional group did stay with their original college major. Table 9 shows that the non-traditional group actually pursued vocations within their chosen field after leaving college.

As Table 9 shows, a much smaller percentage of women of the non-traditional group (34.4%) actually chose vocations in their original area of career emphasis, while for the traditional group, 90.9% worked in traditional fields. This suggests that even for those women who remained in non-traditional college majors during college, many (56.3%)

(1) The 0.0000 significance value reported in Table 8 shows that the probability of that particular relationship occurring by chance alone is 0.00%.
Table 9

Work Experience After College

<table>
<thead>
<tr>
<th>Group</th>
<th>Did not work</th>
<th>Chose work in non-traditional areas</th>
<th>Chose work in traditional areas</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-traditional</td>
<td>3</td>
<td>11</td>
<td>18</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(34.4% chose work in non-traditional areas*)</td>
<td>(56.2% changed from non-traditional to more traditional areas*)</td>
<td></td>
</tr>
<tr>
<td>Traditional</td>
<td>4</td>
<td>0</td>
<td>40</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(90.9% chose to remain in traditional careers*)</td>
<td></td>
</tr>
<tr>
<td>Column total</td>
<td>7</td>
<td>11</td>
<td>58</td>
<td>76</td>
</tr>
</tbody>
</table>

Raw Chi Square = 18.14277  Significance = 0.0001

*Percentage are computed by dividing the row total into each individual Chi Square frequency.

shifted career emphasis to more traditional types of jobs (work experience) after college.

Further analysis of the reported reasons for which the subjects of the study chose to work (Table 10) showed no difference between the two groups. Table 10 deals with the stated reasons, whether out of choice, need, or other, that the women in both groups chose the post-college work situations and/or positions they did.

The data in Table 10 tends to refute the notion that a greater number of non-traditionally-oriented women may choose to work outside
of the home from choice alone, rather than from need. At least this was not the case with the subjects of the present study, although it is not known how the present subjects may generalize to other populations, particularly college women of today.

Hypothesis 2: Objective 7 states that there will be a significant difference in the way the women of each group perceive society's attitudes and opinions with regard to their chosen occupation and/or status since the time of Wright and Johnson's study. Women who chose the occupation of housewife will not perceive a change in society's attitudes towards their housewife role. However, women who choose to work outside of the home will perceive a positive, more accepting, change in society's attitudes towards them as working women.

Findings related to Hypothesis 2 are summarized in Tables 11 and 12.

Data found on Table 11 were obtained from replies to question No. 12 of the questionnaire which read: Do you as a career women
Table 11

Working women's perception of societal attitudes.

<table>
<thead>
<tr>
<th>Group</th>
<th>No answer</th>
<th>Yes, did perceive a change</th>
<th>No, did not perceive change</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-traditional</td>
<td>23</td>
<td>5</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Traditional</td>
<td>23</td>
<td>9</td>
<td>12</td>
<td>44</td>
</tr>
<tr>
<td>Column total</td>
<td>46</td>
<td>14</td>
<td>16</td>
<td>76</td>
</tr>
</tbody>
</table>

Raw Chi Square = 3.33117  
Significance = 0.1891

perceive a change in society's attitudes towards you as a working women today as opposed to when you started your professional career? (No Answer ____ Yes ____ No ____).

Table 11 shows that there are currently no apparent differences in the perceptions of women of either study group who chose to work outside of the home. Half of the women in each group who were working outside of the home reported that they perceived a change in society's attitudes towards them; while the other half in both groups reported that society's attitudes had not changed.

Data dealing with housewives perceptions of societal attitudes towards them as homemakers is reported in Table 12. The question dealing with part of the study as asked by the questionnaire read: Do you as a housewife perceive a change in society's attitude towards you as a housewife? (No Answer ____ Yes ____ No ____).

As can be seen from Table 12, no significant difference was found to exist between either group of women relative to the way they
perceived society's attitudes towards them as working women. The women of this study who stated that society's attitudes were changing, viewed these changes as positive ones. In other words, they see society becoming more accepting of a woman's right to choose her occupation without as much societal restriction. Career women most frequently mentioned that they felt conditions were improving for them as women, and most housewives felt that they were respected for their decision to remain at home.

Of those who did not answer yes to this querie (a smaller percentage of women in both the traditional and non-traditional groups reported seeing no changes in society's attitudes), most felt that society was still not changing its attitude toward them or that the change was coming much too slowly. Some felt that for working women, employers were giving only lip service to the move for equality, and that most men are still given more and better employment opportunities. Housewives who did not perceive a change in society's attitudes towards them,
reported quite consistently that they felt society was trying to make
the profession of a housewife less dignified or creative. Most women
who reported this were very adamant in expressing the fact that they
can and do find creative fulfillment in the role of homemaker.

Hypothesis 3: A difference will exist between the two groups on
the mean scores of the twenty-four scales of The Adjective Check List
(Gough, 1965). It was expected that the non-traditional group of women
would show higher mean scores on the following scales: unfavorable
adjectives checked, defensiveness, self-confidence, achievement, domi­
nance, order, exhibition, autonomy, aggression, and change.

Analysis of The Adjective Check List

The following section presents the study data with regard to sub­
ject responses on The Adjective Check List. Mean scores obtained by
both groups of women for each of the twenty-four scales of the check
list are reported (See Table 13) and some viable inferences are dis­
cussed.

Objective 8 was to determine whether measurable differences
still exist in personality characteristics for the two groups of women.
The Adjective Check List was used to measure possible personality
differences between the two groups of women at the present time since
this instrument was more easily administered by mail than the Minne­
sota Multiphasic Personality Inventory, the personality instrument used
in the 1960 study of these female subjects. While The Adjective Check
Table 13

Mean Scores, Standard Scores, and F. Ratio Scores for the Non-traditional and Traditional Group Women on The Adjective Check List

<table>
<thead>
<tr>
<th>ACL Scale</th>
<th>Traditional Group</th>
<th>Non-traditional group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score</td>
<td>Standard Score</td>
</tr>
<tr>
<td>1 No Ckd</td>
<td>99.7</td>
<td>37</td>
</tr>
<tr>
<td>2 Df</td>
<td>19.5</td>
<td>53</td>
</tr>
<tr>
<td>3 Fav</td>
<td>46.4</td>
<td>54</td>
</tr>
<tr>
<td>4 Unfav</td>
<td>9.09</td>
<td>56</td>
</tr>
<tr>
<td>5 S-Cfd</td>
<td>7.8</td>
<td>55</td>
</tr>
<tr>
<td>6 S-Cn</td>
<td>6.95</td>
<td>55</td>
</tr>
<tr>
<td>7 Lab</td>
<td>7.86</td>
<td>51</td>
</tr>
<tr>
<td>8 Per Adj</td>
<td>11.7</td>
<td>53</td>
</tr>
<tr>
<td>9 Ach</td>
<td>12.5</td>
<td>58</td>
</tr>
<tr>
<td>10 Dom</td>
<td>11.2</td>
<td>54</td>
</tr>
<tr>
<td>11 End</td>
<td>9.81</td>
<td>55</td>
</tr>
<tr>
<td>12 Ord</td>
<td>10.1</td>
<td>57</td>
</tr>
<tr>
<td>13 Int</td>
<td>11.8</td>
<td>48</td>
</tr>
<tr>
<td>14 Nur</td>
<td>18.2</td>
<td>48</td>
</tr>
<tr>
<td>15 Aff</td>
<td>19.6</td>
<td>49</td>
</tr>
<tr>
<td>16 Het</td>
<td>7.88</td>
<td>48</td>
</tr>
<tr>
<td>17 Exh</td>
<td>3.50</td>
<td>56</td>
</tr>
<tr>
<td>18 Aut</td>
<td>3.29</td>
<td>56</td>
</tr>
<tr>
<td>19 Agg</td>
<td>10.8</td>
<td>78</td>
</tr>
<tr>
<td>20 Cha</td>
<td>4.06</td>
<td>45</td>
</tr>
<tr>
<td>21 Suc</td>
<td>2.68</td>
<td>56</td>
</tr>
<tr>
<td>22 Aba</td>
<td>3.65</td>
<td>54</td>
</tr>
<tr>
<td>23 Def</td>
<td>4.70</td>
<td>50</td>
</tr>
<tr>
<td>24 Crs</td>
<td>4.52</td>
<td>63</td>
</tr>
</tbody>
</table>

* Significant of the .05 level
List in the present study does not assess the exact same scales as the MMPI used in the 1960 study, adjectives for MMPI scales have been obtained from other research sources for subjective comparisons with the adjectives reported by the subjects at the time of the present follow-up study.

To help make the following analysis of The Adjective Check List more graphic and easier to understand, a profile sheet comparing the overall personality profiles of both groups of women is presented on the next page (Figure 1). As can be seen from the profile sheet, scores are plotted in reference to a standard score mean of 50 and a standard deviation of 10 (Gough and Heilbrun, 1965). Thus, scores which deviate 1 1/2 or more standard deviations from the mean are considered more significant than those near, or within one standard deviation of the mean. As will be noted from the profile sheet, most scales for both groups of subjects are not significantly high or low and the overall profiles for both groups of subjects are very similar. Only the scales for Number of Adjectives Checked, Aggression, and Counseling Readiness show scores beyond one standard deviation from the normative mean of 50.

Since the two groups of women differed significantly on four of the twenty-four scales of The Adjective Check List and were both found to score significantly high on the Aggression scale, only these five scales will be discussed in detail in this chapter. For a description of the other scales not hereafter described in detail, and the adjectives associated to these scales, see the Appendix (p. 89).
Figure 1. Profile sheet for the Adjective Check List.

Reproduced from the Manual for the Adjective Check List, by Harrison G. Gough, Ph.D. and Alfred B. Heilbrun Jr., Ph.D Copyright 1965 by Consulting Psychologists Press, Inc. Palo Alto, California. All rights reserved.
Table 13 shows the mean scores, standard scores, and F ratio for both the traditional and non-traditional group women. Those F ratios which showed significant differences existing between the two groups are starred (*).

**Scale 1** of The Adjective Check List pertains to the overall number of adjectives checked on The Adjective Check List and is the first scale to show significant F ratio between the two groups of women (See Table 13).

Table 13 shows that a significant difference (0.05 level) exists between the mean scores for the two groups of women on the total number of adjectives checked, with the traditional group women scoring higher than the non-traditional group. As can be seen from the overall profile sheet (Figure 1), both groups of women in the present study scored below the mean for women in general on this category. Thus, according to The Adjective Check List Manual, both groups of subjects in the study can be described by adjectives such as quiet, reserved, more tentative and cautious in their approach to problems, and perhaps at times unduly taciturn and aloof. Both groups can also be seen as inventive, and original and perhaps less effective in getting things done. However, while both groups scored below the mean on this particular scale, the fact that the non-traditional group scored significantly lower than the traditional group suggests that the adjectives used to describe both groups of women on this particular scale would likely be more applicable to the non-traditional women. In other words, one could
presume more clinical validity or reliability in using the above men­tioned adjectives as descriptors for the non-traditional group women rather than for the traditional group women.

**Scale 4 (Number of Unfavorable Adjectives Checked)** is the converse of favorable adjectives, but sufficiently different psychodynamically to warrant separate scoring. This scale measures the total number of "unfavorable" adjectives checked. Results of this scale are shown on Table 13. This scale showed a significant difference (,05 level) in the mean scores for the two groups of women with the traditional group women marking a greater number of unfavorable adjectives for themselves than was the case with the non-traditional group. This finding suggests that the traditional group women view themselves as somewhat more skeptical and rebellious than the non-traditional women and that the non-traditional women may therefore, be rated as somewhat more placid, tactful, and sincere than their counterparts. However, as can be seen from the profile sheet (Figure 1), the traditional group mean score on Scale 4 is only a half standard deviation from the publisher's mean. Thus, to conclude that these adjectives suggested by the publisher for "high scorers" might be universally applicable to the traditional group women, would be erroneous. One can only conclude that adjectives for this scale may more likely describe some traits of the traditional group than the non-traditional group, but that the intensity of these particular traits for the traditional group does not differ greatly from published norms for women in general. This particular conclusion may
be said of most of the ACL scales, except as noted in the remained of the discussion below.

**Scale 13 (Intraception)** measures the attempts that an individual makes to understand one's own behavior or the behavior of others. There was a significant difference at the 0.05 level between the mean scores for the two groups on this scale, as shown in Table 13.

The difference noted between the two groups on the Intraception scale (Table 13) suggests that women of the traditional group have a higher need to understand themselves. Findings of this scale suggest that the traditional group women may be more correctly described by the following adjectives: alertness, curiousity, foresightedness, insightfulness, maturity, and sensitivity. Non-traditional women can be seen from this scale as more aggressive in manner, more easily bored, and impatient with any situation where immediate action is not possible. This scale difference tends to support the earlier findings of Wright and Johnson (1960), which reported the non-traditional women as being more aggressive, impatient, and "doers" than was the case with the traditional group women.

**Scale 19 (Aggression)** shown in Table 13, indicates that there is no significant difference between the traditional and non-traditional group. However, aggression seems to be a very dominant characteristic of both groups. The two groups scored well above the mean (2.3 SD) reported in the published norms. In terms of this trait, therefore, both groups show a high need to win and to see others as rivals. It might be
the case in this study, however, that the women in the present data could be a biased sample in that those who were outgoing enough to return questionnaires and The Adjective Check Lists may represent the more assertive and aggressive of the two groups in the original study. Nonetheless, adjectives such as arrogant, autocratic, rude, adventurous, aggressive, aloof, self-confident, and independent could be considered as descriptive of both groups.

Scale 24 (Counseling Readiness) of The Adjective Check List, displays a significant difference (.05 level) in the mean scores for the two groups of women regarding counseling readiness. Results of this scale, shown in Table 13, indicate that the traditional group women are seen to have greater counseling readiness. Both groups, however, scored somewhat higher than the norm of this scale, so the adjectives of this scale may be applicable to both groups. However, the traditional group scored $1\frac{1}{2}$ SD away from the mean of the norm. This suggests that the traditional group would have a higher probability that the adjectives describing this scale would be more clinically applicable to them than to the non-traditional group women. It also demonstrates that women of the traditional group may have more worries about themselves and more ambivalence about their status. Members of this group may feel somewhat left out of things, feeling like they cannot enjoy a full and meaningful life. This scale tends to suggest that the non-traditional women has more self-confidence and is more sure of herself.
In summarizing The Adjective Check List, hypothesis three must be rejected. Over-all, the two groups of women are not significantly different on all or most of the scales of The Adjective Check List. It is important to add that these two groups of women did differ when this study was conducted by Wright and Johnson in 1960. The fact that they appear to be similar now is apparently the result of a change to more traditionally oriented role choice on the part of the non-traditional group after the first study was conducted.

The two groups did differ significantly on four of the twenty-four scales of The Adjective Check List which were, the total number of adjectives checked, number of unfavorable adjectives checked, intraception, and counseling readiness. These differences suggest that these women are different in certain specific aspects of their personalities. If a critical look is taken of the scales where the two groups of women differed significantly in personality characteristics, we observe a personality profile to exist which helps to describe the two groups of women more clearly. Figure 2 shows a representation of the profile of both groups of women on the significant scales of The Adjective Check List.

The non-traditional group women can be described from this profile as having a greater likelihood that the following adjectives would apply to them, i.e., quiet, reserved, cautious, aloof, original, inventive (Scale 1, Total Number of Adjectives Checked); reckless, inteperativeness, aggressive, easily bored, impatient (Scale 13, Intraception); arrogant, autocratic, cruel, dissatisfied, forceful, hostile, irritable,
Figure 2. Profile of two groups of women for the significant scales of The Adjective Check List.

quarrelsome, sarcastic (Scale 19, Aggression); and, anxious, ambivalent about status, pessimistic, and possible feelings of being left out (Scale 24, Counseling Readiness).

In comparison, the traditional group might be described as having one or more of the following adjectives: reserved, tentative, cautious, aloof, original, inventive (Scale 1, Total Number of Adjectives Checked); rebellious, arrogant, careless, conceited, cynical, skeptical (Scale 4, Number of Unfavorable Adjectives Checked); aggressive, arrogant,
autocratic, cruel, dissatisfied, forceful, hostile, irritable, quarrel-
some, sarcastic, vindictive (Scale 19, Aggression); worried about self,
ambivalent about status, left out, pessimistic, and unable to enjoy life
to its full (Scale 24, Counseling Readiness).

As is observed from this type of synthesis, the two groups of
women are very similar in personality characteristics. Overall, the
non-traditional group women may be more appropriately described by
such adjectives as aggressive, impatient, cautious, irritable, quarrel-
some, and hostile. These characteristics give support to the earlier
findings of Wright and Johnson (1960) and would show the non-traditional
group women as somewhat more aggressive, having greater difficulty
in their interpersonal relationships, and may seek achievement at the
expense of close personal relationships. The traditional group on the
other hand might be more closely described by adjectives such as
worried about self, left out, ambivalent about their status, rebellious,
arrogant, careless, conceited, cynical, skeptical and somewhat unable
to enjoy life to its full.
Chapter V

Summary and Conclusions

This study was undertaken to obtain information regarding any similarities or differences of two groups of women, one group consisting of traditional college majors studied by Wright and Johnson (1960) at Brigham Young University and Utah State University, and the other group consisting of non-traditional college majors at the same universities. The hypotheses examined were: (1) There would be a difference in the status of the two groups of women since their participation in Wright and Johnson's 1960 study; (2) There would be differences in the way the women of both groups perceive society's attitudes and opinions towards them with regard to their chosen occupation and/or subsequent status since the time of the 1960 study; and, (3) differences would exist between the two groups in terms of self-descriptive adjectives on The (Gough's) Adjective Check List.

The criteria for selection of the subjects in the original study were: (a) the experimental group consisted of students in exact science college majors (physics, chemistry, engineering, mathematics, etc.), and the control group was randomly selected from females in non-exact science majors (psychology, art, music, etc.); (b) the subjects were asked to provide biographical data concerning themselves and their
families and also to submit to a series of personality tests. A total of sixty women participated as experimental group subjects, and seventy others participated as control group subjects. It was from these two groups of women that the present longitudinal study was done.

The subjects of the original study were located through alumni records at Utah State University and Brigham Young University. Addresses were obtained on fifty-one of the sixty women in the non-traditional (experimental) group and fifty-eight of the seventy in the traditional (control) group (total N for both groups = 109). Seventy-six of the one hundred and nine women who were contacted, returned usable questionnaires and Adjective Check Lists.

Hypothesis 1, which stated that there would be differences in these two group's life status, had to be rejected. Neither group of women were found to differ significantly in their present life status. However, the non-traditional group women did change their career emphasis either during or shortly after college. A significant number of the non-traditional group women (33%) changed college majors to more traditionally acceptable majors for women, and 64% of the non-traditional group women pursued careers which were in traditionally acceptable fields for women after they left college. It would seem that these women who tried to pursue more non-traditional majors and careers found conflicts and pressures which frustrated the attainment of personal needs. This change in career emphasis tends to put these non-traditional women in the same category as the more traditional women, and this change to
more traditional patterns of living may also have influenced a change to more traditional personality characteristics and attitudes. For these reasons, very few differences were found to exist between the mean scores for the twenty-four scales of The Adjective Check List (Gough, 1965) for both groups.

Data received from the questionnaire regarding possible changes in society's attitudes as perceived by either the working woman or the housewife in either group did not substantiate hypothesis two. As many women in both groups reported seeing a change in society's attitudes as did not. Women who chose to work outside the home perceived a general increase in acceptance from society regarding their choice to work away from the home. A slightly greater percentage of the women who chose to make homemaking a career, also reported seeing society becoming generally more accepting of them as housewives, but this percentage was not significantly different from the percentage who reported that they saw no change in society's attitudes towards them. The smaller percentage of women in both groups who said that society's attitudes had not changed with regards to career women or housewives, stated that for the most part, society either looks down upon women who choose to work outside of the home, or who choose to make homemaking a career. Most of these criticisms seemed to focus on the lack of creativity associated with homemaking activities, or the neglect for familial responsibility associated with working outside of the home, and seemed to
reflect the personal bias of the women reporting rather than societal attitudes in general.

Significant differences were obtained between the traditional and non-traditional group women on four of the twenty-four scales and both groups were found to score significantly high on Scale 19 (Aggression) of The Adjective Check List. The five scales which were considered significant were: Scale 1, Total Number of Adjectives Checked; Scale 4, Number of Unfavorable Adjectives Checked; Scale 13, Intraception; Scale 19, Aggression; and, Scale 24, Counseling Readiness. Both groups of women seemed to be generally alike with regard to their overall personality characteristics, even though the groups scored significantly different on four scales of The Adjective Check List. It should be noted that the differences noted between the two groups were associated with adjectives which seemed to contradict each other. Therefore, on this basis, Hypothesis 3 was rejected as a firm conclusion.

The apparent contradiction can best be explained by the fact that the adjectives suggested for each scale of the instrument are reported for "high scorers" and "low scorers." Thus, the probability that a given adjective or set of adjectives may apply to a given individual, depends to some extent on the degree to which the individual's score deviates, high or low, from the standardized mean scores.

While statistical differences were found between the present study groups on the four scales indicated above, it must also be noted that their
scores did not reflect particularly high or particularly low scores in terms of published mean scores for The Adjective Check List. Thus, their respective scores, while differing from each other, either above or below normative mean scores, were not seen as significantly high or low to generalize absolute applicability of the reported adjectives to the respective groups as a whole. Only the Aggression scale deviated more than one standard deviation above the mean, with scores for the other scales varied within a standard deviation above or below the mean. Thus, the observed differences did not represent intense scores for the study subjects.

With the above qualification, some differing traits between the two groups of women are presented below. These trait differences were obtained from careful analysis of the adjectives suggested for high and low scorers on the four scales of The Adjective Check List on which significant differences were noted for the two study groups. Thus, suggested adjectives for each group follow.

The non-traditional group women can be described as having some likelihood that the following adjectives would apply to them:

**Scale 1: Total Number of Adjectives Checked:**

- quiet, reserved, cautious, aloof, original, inventive;

**Scale 13: Intraception:**

- reckless, intemperate, aggressive, easily bored, impatient;
Scale 19: Aggression:

arrogant, autocratic, cruel, dissatisfied, forceful,
hostile, irritable, quarrelsome, sarcastic;

Scale 24: Counseling Readiness:

anxious, ambivalent about status, pessimistic, and
possible feelings of being left out;

By comparison, adjectives which might be considered applicable
to the traditional group include the following:

Scale 1: Total Number of Adjectives Checked:

reserved, tentative, cautious, aloof, original, inventive

Scale 4: Number of Unfavorable Adjectives Checked:

rebellious, arrogant, careless, conceited, cynical;

Scale 13: Intraception:

somewhat aggressive, somewhat easily bored, possibly
impatient;

Scale 19: Aggression:

aggressive, arrogant, autocratic, cruel, dissatisfied,
forceful, hostile, irritable, quarrelsome, sarcastic,
vindictive;

Scale 24: Counseling Readiness:

worried about self, ambivalent about status, left out,
pessimistic, and unable to enjoy life to its fullest.
Again, it is noted that these kinds of adjectives ascribed to each scale and the measured differences between the two groups of the study, can only be reported as possible or suggested difference by the study data. With reference to this premise, Gough makes the following statement in his writing:

These sketches (adjectives associated with the ACL) are based on study of the items in each scale, on the correlates of the scale, and on use of the ACL in individual counseling, diagnosis, and therapy. They are necessarily intuitive and inductive, and should be used only to the extent that they seem helpful and accurate in the light of the experience and professional practice of the user of the ACL. (Gough, The Adjective Check List Manual, 1971, p. 7)

Obviously, as is the case with any test of this type, not all adjectives identified with a particular scale would be evidenced in every person, and the degree to which a given score deviates from the mean scores reported by the test norms would indicate the relative intensity and/or clinical assurance that a particular trait (adjective) would be present in describing the observable characteristics of the person.

The present study attempted to look at some of the personality traits evidenced by the study group women today as compared to the women of the 1960 study. However, since the MMPI (the instrument used in the 1960 study) was not amenable to being mailed and self-administered, the ACL was used as an alternative. While using the ACL may not have been as acceptable to the present study as would the MMPI have been, a comparison between the ACL and the MMPI is justifiable, since the MMPI has been interpreted in terms of adjectives and the two
instruments have been found to have some correlative relationship to each other. It should be noted, however, that any attempt to make specific comparative interpretations between the two instruments, should be done with caution since the women of both groups did not differ significantly in all cases from the normative data mean on most scales of the ACL and the correlations between the MMPI and the ACL are not generally high.

The scales of the MMPI have been analyzed clinically in terms of interpretative adjectives for describing behavior, and high and low scores have been described in adjective form (Clarkhuff, 1965). This use of adjectives as descriptors of high and low scorers on the MMPI is similar in form to the adjectives used to describe high and low scorers of the ACL. Wright and Johnson (1960) reported that the experimental (non-traditional) group (.01 level of significance) on the following MMPI scales: Hs, Pd, Pt, and Sc. On the Mf scale, the traditional group scores exceeded the non-traditional group scores (.05 level of significance. Wright and Johnson inferred from these MMPI data that the non-traditional group women could likely be described as having personality traits evidencing greater conflict with authority figures, including some rebelliousness against external controls, family, environment, and members of the opposite sex. The non-traditional women were also described more by adjectives such as selfish, competitive, aggressive, less compatible with men, and generally lacking in social skills. In this sense the non-traditional women were seen as being less
able to mingle comfortably in the traditional woman's world, and as being more at ease with men socially, with whom they were seen to be more competitive than social.

For comparative purposes, the adjectives associated with the significantly high and low scores of the MMPI for the non-traditional and the traditional group women on the Hs, Pd, Mf, Pt, and Sc scales will be presented. These adjectives will then be compared to those associated with the significant scales of the ACL to see if similarities exist.

According to Carkhuff (1965), adjectives ascribed to each of the MMPI scales on which the non-traditional women differed in Wright and Johnson's study from traditional women include the following:

**Hs Scale:** The non-traditional group (high scorers) can be described by such adjectives as egocentric, immature, selfish, narcissistic, cynical, and restrictive in their range of interpersonal relationships.

The traditional group women (low scorers) might be described by such adjectives as conventional, alert, and quick to adjust.

**Pd Scale:** The non-traditional group (high scorers) could be described at the time of the 1960 study as bright, emotional, shallow, adventurous, sociable, verbal, frank, individualistic, sensitive, assertive, high-strong, tense, striving, active, enthusiastic, aggressive, and, when combined with high Hs and Pt scales, suggests, possible familial or marital difficulties.
The traditional group women could be described at the time of the 1960 study as adjusted, balanced, conventional, modest, good tempered, temperate, persevering, suggestible, and as having a narrow range of vocational interests.

**Mf Scale:** The non-traditional group women (low scorers) could be described at the time of the 1960 study as feminine, sensitive, responsive, modest, grateful, wise, active, high-strung, and assertive.

The traditional group women (high scorers) could be described as adventurous, easy going, relaxed, logical and unstable.

**Pt Scale:** The non-traditional group women (high scorers) could be described at the time of the 1960 study as worrisome, orderly, sensitive, emotional, high-strung, conscientious, intuitive, shy, poor socializers, introverted, and when combined with a high **Sc** scale, suggests depression, and introversion.

The traditional group could be described by adjectives such as cheerful, aesthetic in interests and outgoing socially.

**Sc Scale:** The non-traditional group women could be described at the time of the 1960 study by such adjectives as sensitive, high-strung, frank, courageous, kind, modest, and when combined with high **Pt** and **Hs** scores, suggests depression, introversion, withdrawing, worrisome, and irritability.

The traditional group could be described as friendly, alert, and honorable.
For comparison with the MMPI data, adjectives from the ACL as reported by the subjects for the present study, show the non-traditional group as being aggressive, impetient, irritable, quarrelsome, sarcastic, reserved, and cautious in their approach to others. These adjectives seem to support the descriptions from the earlier MMPI data, which describe this group as having problems with close personal relationships. Further, their apparent rebellious, quarrelsome, and assertive nature could well affect their dealings with authority figures, and also cause conflicts with the opposite sex. These particular comparisons lend support to the inferences drawn about non-traditional women in the 1960 study by Wright and Johnson.

On the other hand, ACL adjectives with regard to the traditional women are somewhat in contradiction to MMPI descriptors for these women. For example, present findings suggest that the traditional group today is more aggressive, assertive, autocratic, outgoing, worried about self, ambivalent about status, pessimistic, and unable to enjoy life than they appeared to be in the earlier study by Wright and Johnson. This seems to suggest some change in personality traits or attitudes of the traditional group women since 1960.

In summary, it can be said that the women of Wright and Johnson's earlier study did differ in personality characteristics. At that time (1960) the non-traditional group was described as being emotional, shallow in their social relationships, assertive, aggressive, possibly hostile towards those of the opposite sex, somewhat depressed and
introverted. They were shown to be more outgoing, adventurous, and as having more masculine than feminine interests.

In contrast, the traditional group women were found by Wright and Johnson to be conventional, adjusted socially, balanced, modest, and having a narrow range of interests. They were also found to be more easy going, socially outgoing, friendly, alert, and having interests which were more feminine than their non-traditional counterparts.

Findings from The Adjective Check List used in the present study suggest that the non-traditional group might be described by such adjectives as reserved, cautious, aloof, reckless, autocratic, cruel, dissatisfied, forceful, hostile, quarrelsome, anxious, pessimistic, placid, obliging, mannerly, and as having feelings of being left out. The traditional group may presently be described by the following adjectives: reserved, tentative, cautious, reserved, aloof, original, inventive, rebellious, arrogant, careless, conceited, cynical, aggressive, somewhat impatient and possibly vindictive.

When comparisons are made between the characteristics of the two groups of women today, as opposed to the 1960 study we can infer the following:

(1) The non-traditional group women are shown to have similar personality characteristics today (as determined by the ACL) as they did in the earlier study (1960) by Wright and Johnson.

(2) Although the non-traditional group women seemed to have remained the same over the years with regards to personality traits,
their interests may have shifted in the direction of becoming more traditional in nature, i.e. a sizeable percentage of the non-traditional women changed majors to more traditional areas; they have chosen occupations more often in traditional areas; they have married as young and as frequently and have had as many children as have the traditional group women.

(3) Presently the personality traits of the traditional group women have been shown to have shifted in the direction of becoming similar in nature to those of their non-traditional counterparts. Specifically, the two groups of women were found to be significantly different from each other on Scale 1 (Number of Adjectives Checked), Scale 4 (Number of Unfavorable Adjectives Checked), Scale 13 (Intraception), and, Scale 24 (Counseling Readiness). However, these two groups of women were not found to significantly differ on twenty of the ACL scales and of the four scales in which they did differ significantly, they did not deviate significantly (1.5 SD) from the normative data mean of 50. Similarly, both the non-traditional and traditional group did significantly score higher than the normative data mean on Scale 19, Aggression. This is significant in that it shows a marked change in the personality characteristics of the traditional group women, since they were found to possess characteristics which would be considered antithetical to traits of aggressiveness at the time of the 1960 study.

(4) While the traditional group women apparently have changed with regards to certain aspects of their personality, i.e. have become
more aggressive, assertive, outgoing, and non-traditional in nature, they have remained consistent in their interests. The traditional group women have maintained their interest in vocations which are more traditionally feminine and have for the most part, chosen to stay in the home as housewives.

In an attempt to explain (1) why the non-traditional group women changed from non-traditional interests and occupational choices to more traditional ones, and, (2) why the traditional group women were shown to have changed in certain personality characteristics from what they were shown to have during the earlier study, three possible explanations seem to be relevant. First, it may be that the non-traditional group women found that the social pressures to comply with traditional norms for women were too great to resist, and they therefore changed majors and life style to comply with the norms and expectations of society. Second, it may be that as the non-traditional group women began to pursue careers, they found agencies and employers discriminating against them as women and therefore, changed to more traditional roles because there was no alternative for them if they were going to work. Third, it may be that as women pursued their own creative interests and tried to fulfill their personal desires for self-fulfillment, that this may have been done at the expense of close personal relationships, affiliations and affection (this premise seems to be supported by Wright and Johnson's earlier study). Since the need for love, affection, and affiliation is more primary in the need hierarchy, being stronger than needs such as
creative fulfillment and self-expression, these women may have found themselves in a cold, competitive, impersonal, and undesirable world. They may have then decided to postpone attempts to satisfy more secondary needs and went about satisfying needs for closeness, love, and affiliation. This new direction then led to marriage, children, familial responsibility, and a change in personal outlook, and personality.

In contrast, it may be argued that the traditional group women changed in their personality characteristics and became more like their non-traditional counterparts for a variety of reasons. First, through the process of aging, women of the traditional group became more assertive, outgoing, aggressive, and adventurous, although this is different to substantiate, it seems to be a possible argument. Secondly, it may be that the increasing acceptance and expectations by society for women to become more competitive, outgoing, assertive, and aggressive is more than just a subtle influence on women. It may be that while the activities of women may not be changing drastically, the personality characteristics of women in general may be found to be more non-traditional in nature because of the changing societal expectations. If this assumption is true, we may find our society becoming increasingly more accepting of women who pursue life styles which would have been considered in earlier years as unacceptable for women. However, this study further suggests that while society may be becoming more accepting of women who pursue non-traditional roles in life, we may not see
a major influx of women moving into these non-traditional areas.

Acceptance then, of a way of life may not necessarily mean that the majority of women will apply that way of life. Certainly, further investigations are needed to verify these assumptions.

Suggestions for Further Study

From the findings in the present study, the following suggestions for further study are proposed:

(1) This study focused on women who were studied during their college years, when societal values and goals were changing and when life styles changed frequently. Further study of women who have not only chosen non-traditional fields of study today, but who have pursued non-traditional careers, may reveal added information regarding the appropriateness of such choices in terms of the women's general satisfaction and societal well being, as well as societal reactions.

(2) A replication of the Wright-Johnson study could be meaningfully carried out with a random sample of female college students who are presently majoring in traditional and non-traditional college majors, to see if there are differences between the two groups regarding their interests, traits, and personalities today as compared with the 1960 study.

(3) It could also provide helpful information for Career Education programs to undertake this type of study with high school students, to determine any pressures (and consequent results of such pressures)
placed on women in pursue either traditional or non-traditional educational goals and careers.
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Wright, E. Wayne, & Johnson, Richart T. The characteristics of female college students who select academic majors in fields of exact science, Unpublished. 1960.

Appendix
Dear

In 1960, you participated in a study while enrolled at either Brigham Young University or Utah State University. This study was designed to assess certain traits and interests of women majoring in exact sciences (mathematics, chemistry, engineering, physics, etc.), as opposed to women majoring in other fields, and was conducted at BYU and USU jointly.

You were administered vocational interest tests, personal preference tests, and personality tests and this data along with the information received from the other women in the study was used to determine whether or not differences existed in interests, traits, and characteristics for women who chose more exact science majors as compared to women who chose other majors.

Presently, Dr. E. Wayne Wright and myself are completing a followup study on this original research. We are asking that you and the other women (138 total) of this original study help us again by participating in the followup. Your cooperation is very much needed and would be most appreciated. Please take a few minutes and fill out the short questionnaire on the back of this letter and the Adjective Checklist enclosed. The information that we receive from you will be kept completely confidential. No names will be referred to in this study and we ask you not to give us your name.

Again, may we add that the success of this study depends on a 100% return from all of the women who participated. We have enclosed a stamped, self addressed envelope so you can return the questionnaire and the checklist conveniently. We would appreciate your immediate reply, as we are hoping to have all of the data collected no later than November 30, 1974.

Thank you very much for your cooperation in this regard. We wish you every success and happiness in your life's endeavors.

Sincerely,

[Signature]

Paul D. Farmer
Graduate Student

E. Wayne Wright
Director of Counseling Psychology
Utah State University
December 6, 1971.

Dear Friend,

Recently we tried to contact you pertaining to a follow-up which we are doing on women, like yourself, who participated in a study conducted at USU and UU in 1959 and 1960. This study was designed to assess certain traits of women majoring in either exact science majors (mathematics, chemistry, engineering, physics, etc.), or those of other majors such as psychology, music, education, etc.

You were administered vocational interest tests, personal preference tests, and personality tests and this data along with the information received from the other women in the study was used to determine whether or not differences existed in interests, traits, and characteristics for women who chose more exact science majors as compared to women who chose other majors.

It is vitally important to the success of this study that we get a 100% return from all of the participants. As most of us do, you may have forgotten to send in, or have misplaced the first letter, questionnaire, and adjective checklist we sent to you. We are writing this second letter as a reminder and an additional plea for your assistance. Please take a few minutes and fill in the questionnaire on the back of this letter and the adjective checklist enclosed. The information that we receive from you will be kept completely confidential. No names will be referred to in this study. We have enclosed a stamped, self addressed envelope so you can return the questionnaire and the checklist conveniently.

Again, we extend our appreciation for your cooperation in this regard.

Sincerely,

Paul D. Farmer
Graduate Student

E. Wayne Wright
Director of Counseling Psychology
Utah State University
Instructions:
The following questionnaire contains questions which will tend
to give us a general description of your personal background. Please
do not include your name. Read each question carefully and fill in as
accurately as possible.

(1) Age: ______________________

(2) Educational Background:
   Years of schooling after high school: __________
   Degrees obtained: B.S. ___ B.A. ___ M.Ed. ___
   College Major: ________________________________

(3) Present Occupation: ________________________________

(4) Previous Work Experience:
   Job Title: ___________________________ Employer: ___________________________

(5) How many years after college did you work: __________

(6) If employed, reason for working: Occupational Choice: ___________________________
    Financial Need: ___________________________
    Other: ___________________________

(7) Marital Status: Single ___ Married ___ Divorced ___ Separated ___
    (If you have ever been divorced, please check both your present
    marital status and divorced entree as well)

(8) Number of years married: ______ (9) Number of Children: ______

(10) During your educational pursuits, did you ever seek professional
    counseling (career counseling or other)? Yes ___ No ___

(11) Have you sought professional counseling since leaving the university
    setting? Yes ___ No ___

(12) Do you as a career woman (where applicable) perceive a change in
    society's attitudes towards you as a working woman today as opposed
    to when you started your professional career? Yes ___ No ___
    Please explain.

(13) Do you as a housewife (where applicable) see a change in society's
    attitudes towards you as a housewife? Yes ___ No ___
    Please explain.
The Adjective Check List

by

HARRISON G. GOUGH, Ph.D.

University of California (Berkeley)

Name .................................... Age ............. Sex ...........

Date .................................... Other ..................................

DIRECTIONS: This booklet contains a list of adjectives. Please read them quickly and put an X in the box beside each one you would consider to be self-descriptive. Do not worry about duplications, contradictions, and so forth. Work quickly and do not spend too much time on any one adjective. Try to be frank, and check those adjectives which describe you as you really are, not as you would like to be.
| Absent-minded | Active | Adaptable | Adventurous | Affected | Affectionate | Aggressive | Alert | Aloof | Ambitious | Anxious | Apathetic | Appreciative | Argumentative | Arrogant | Artistic | Assertive | Attractive | Autocratic | Awkward | Bitter | Blustery | Boastful | Bossy | Calm | Capable | Careless | Caustic | Changeable | Charming |
|---------------|--------|-----------|-------------|----------|-------------|------------|-------|------|-----------|---------|-----------|-------------|--------------|----------|--------|---------|----------|-----------|---------|-------|-------|---------|--------|-----------|-------------|--------------|----------|--------|---------|----------|----------|---------|-------|-------|---------|--------|-----------|-------------|--------------|----------|--------|---------|----------|----------|
| cheerful      | civil    | clear-thinking | clever | coarse | cold | commonplace | complaining | complicated | conceited | confident | confused | conscientious | conservative | considerate | cool | cooperative | courageous | cowardly | cruel | curious | cynical | daring | deceitful | defensive | deliberate | demanding | dependable |
| dependent    | despondent | determined | dignified | discreet | disorderly | dissatisfied | distractible | distrustful | dominant | dreamy | dull | easy-going | effeminate | efficient | egotistical | emotional | energetic | enterprising | enthusiastic | evasive | excitable | fair-minded | fault-finding | fearful | feminine | fickle | flirtatious | foolish | forceful |
| foresighted | forgetful | forgiving | formal | frank | friendly | frivolous | fussy | generous | gentle | gloomy | handsome | greedy | headstrong | healthy | helpful | high-strung | honest | hostile | humorous | hurried | idealistic | imaginative | immature | impatient | impulsive | independent | indifferent | individualistic | industrious | infantile | informal | ingenious | inhibited | initiative | insightful | intelligent | interests narrow | interests wide | intolerant | inventive | irresponsible | irritable | jolly | kind | lazy | leisurely | logical | loud | loyal | mannerly | masculine | mature | meek | methodical |
Description of the Scales of The Adjective Check List

In this section, the methods used in deriving each scale of The Adjective Check List will be described, typical adjectives constituting the scale will be listed, and heuristic sketches will be given to assist the user in formulating a conception of the implications of each scale. These sketches are based on study of the items in each Scale, on the correlates of the scale, and on use of the ACL in individual counseling, diagnosis, and therapy. They are necessarily intuitive and inductive, and should be used only to the extent that they seem helpful and accurate in the light of the experience and professional practice of the user of the ACL.

(1) Total Number of Adjectives Checked: No. Ckd

Checking many adjectives seems to reflect surgency and drive, and a relative absence of repressive tendencies. The individual high on this variable tends to be described as emotional, adventurous, wholesome, conservative, enthusiastic, unintelligent, frank, and helpful. He is active, apparently means well, but tends to blunder. The person with low scores tends more often to be quiet and reserved, more tentative and cautious in his approach to problems, and perhaps at times unduly taciturn and aloof. He is more apt to think originally and inventively, but is perhaps less effective in getting things done.

(2) Defensiveness: Df

Adjectives appearing on both male and female Df scales are: considerate, honest, industrious, natural, reasonable, reliable, stable, steady, and trusting. The scale for female Df includes adjectives such as appreciative, calm, generous, pleasant, etc. The higher-scoring person is apt to be self-controlled and resolute in both attitude and behavior, and insistent and even stubborn in seeking his objectives. His persistence is more admirable than attractive. The lower-scoring subject tends to be anxious and apprehensive, critical of himself and others, and given to complaints about his circumstances. He not only has more problems than his peers, but tends to dwell on them and put them at the center of his attention.
(3) Number of Favorable Adjectives Checked: Fav

The individual who checks many of the words in the list of 75 appears to be motivated by a strong desire to do well and to impress others, but always by virtue of hard work and conventional endeavor. The reaction of others is to see him as dependable, steady, conscientious, mannerly, and serious. The low-scoring subject is much more of an individualist--more often seen as clever, sharp-witted, headstrong, pleasure-seeking, and original in thought and behavior. His emotions being more accessible, he also more often experiences anxiety, self-doubts, and perplexities.

(4) Number of Unfavorable Adjectives Checked: Unfav

From individual work with subjects who have scored high on this scale it appears that checking of unfavorable adjectives does not spring from a sense of humility and self-effacement, but more from a kind of impulsive lack of control over the hostile and unattractive aspects of one's personality. The high-scoring subject strikes others as rebellious, arrogant, careless, conceited, and cynical. He tends to be a disbeliever, a skeptic, and a threat to the complacent beliefs and attitudes of his fellows. The low-scorer is more placid, more obliging, more mannerly, more tactful, and probably less intelligent.

(5) Self-Confidence: S-Cfd

The self-confidence scale corresponds to the "poise and self-assurance" cluster of scales on the CPI. The indicative list includes such adjectives as aggressive, clear-thinking, confident, dominant, enterprising, high-strung, independent, outspoken, progressive, shrewd, and strong. Illustrative of contra-indicative adjectives are anxious, cautious, inhibited, and patient. Interpretation of S-Cfd stresses a sense of dominance, clearly one of the major elements in the syndrome defined by the scale. The highscorer is assertive, affiliative, outgoing, persistent, an actionist. He wants to get things done, and is impatient with people or things standing in his way. He is concerned about creating a good impression, and is not above cutting a few corners to achieve this objective. He makes a distinct impression on others, who see him as forceful, self-confident, determined, ambitious, and opportunistic. The low scoring person is a much less effective person in the everyday sense of the word--he has difficulty in mobilizing himself and taking action, preferring inaction and contemplation. Others see him as unassuming, forgetful, mild, preoccupied, reserved, and retiring.
(6) Self-Control: S-Cn

The self-control scale is intended to parallel the responsibility-socialization cluster of scales on the CPI. Indicative adjectives for self-control include conscientious, dependable, good-natured, industrious, pleasant, retiring, stable, wholesome, and others. Contra-indicative adjectives are adventurous, argumentative, disorderly, hasty, rebellious, spendthrift, etc. Several oppositional factors stand out in this scale. High scorers tend to be serious, sober individuals, interested in and responsive to their obligations. They are seen as diligent, practical, and loyal workers. At the same time there may be an element of over-control, too much emphasis on the proper means for attaining the ends of social living. Thus the highest level of ego integration, involving recognition and sublimation of chaotic and destructive impulse along with the allosocial and life-giving dispositions, may be denied to these individuals. At the other end of the scale one seems to find the inadequately socialized person, headstrong, irresponsible, complaining, disorderly, narcissistic, and impulsive. Needless to say, the low-scoring subject tends to be described in unflattering terms, even including such words as obnoxious, autocratic, and thankless.

(7) Lability: Lab

The lability scale was based on item analyses of experimental subjects rated higher on characteristics such as spontaneity, flexibility, need for change, rejection of convention, and assertive individuality. It yielded adjectives such as adventurous, clever, emotional, excitable, forgetful, impatient, mischievous, tolerant, etc. Contra-indicative adjectives for lability include conservative, formal, industrious, serious, unselfish and the like. The high-scoring subject is seen favorable as spontaneous, but unfavorably as excitable, temperamental, restless, nervous, and high-strung. The psychological equilibrium, the balance of forces, is an uneasy one in this person and he seems impelled toward change and new experience in an endless flight from his perplexities. The low-scorer is more phlegmatic, routinized, planful, and conventional. He reports stricter opinions on right and wrong practices, and a greater need for order and regularity. He is described by observers as thorough, organized, steady, and unemotional.

(8) Personal Adjustment: Per Adj

The personal adjustment scale was derived from item analysis of assessment subjects rated higher and lower on personal
adjustment and personal soundness. This scale seems to depict a positive attitude toward life more than an absence of problems and worries. The attitudinal set is one of optimism, cheerful-ness, interest in others, and a readiness to adapt. The high-scoring subject is seen as dependable, peaceable, trusting, friendly, practical, loyal, and wholesome. He fits in well, asks for little, treats others with courtesy, and works enterprisingly toward his own goals. He may or may not understand himself psychodynamically, but he nonetheless seems to possess the capacity to "love and work." The subject low on the personal adjustment scale sees himself as at odds with other people and as moody and dissatisfied. This view is reciprocated by observers, who describe the low scorer as aloof, defensive, anxious, inhibited, worrying, withdrawn, and unfriendly.

(9) Achievement: Ach

Definition: To strive to be outstanding in pursuits of socially recognized significance. The highscoring subject on Ach is usually seen as intelligent and hard-working, but also as involved in his intellectual and other endeavors. He is determined to do well and usually succeeds. His motives are internal and goal-centered rather than competitive, and in his dealings with others he may actually be unduly trusting and optimistic. The low-scoring subject on Ach is more skeptical, more dubious about the rewards which might come from effort and involvement, and uncertain about risking his labors. He tends also to be somewhat withdrawn and dissatisfied with his current status.

(10) Dominance: Dom

Definition: To seek and sustain leadership roles in groups or to be influential and controlling in individual relationships. The high-scorer on this scale is a forceful, strong-willed, and persevering individual. He is confident of his ability to do what he wishes and is direct and forthright in his behavior. The low scorer on Dom is unsure of himself, and indifferent to both the demands and the challenges of interpersonal life. He stays out of the limelight, and avoids situations calling for choice and decision-making.

(11) Endurance: End

Definition: To persist in any task undertaken. The subject high on End is typically self-controlled and responsible, but also idealistic and concerned about truth and justice. By nature conventional, he may nonetheless (because of his sense of rectitude)
find himself championing unconventional ideas and unpopular causes. The low-scorer on End, on the other hand, is erratic and impatient, intolerant of prolonged effort or attention, and apt to change in an abrupt and quixotic manner.

(12) Order: Ord

Definition: To place special emphasis on neatness, organization, and planning in one's activities. High-scorers on Ord are usually sincere and dependable, but at the cost of individuality and spontaneity. These self-denying and inhibitory trends may actually interfere with the attainment of the harmony and psychic order which they seek. Low-scorers are quicker in temperament and reaction, and might often be called impulsive. They prefer complexity and variety, and dislike delay, caution, and deliberation.

(13) Intraception: Int

Definition: To engage in attempts to understand one's own behavior or the behavior of others. High-scorers tend to check such adjectives as alert, curious, foresighted, insightful, mature, reasonable, reflective, sensitive, etc. They do not check adjectives such as fault-finding, indifferent, opinionated, self-centered or shallow. The high-scorer on Int is reflective and serious, as would be expected; he is also capable, conscientious, and knowledgeable. His intellectual talents are excellent and he derives pleasure from their exercise. The low-scorer may also have talent, but he tends toward profligacy and intemperateness in its use. He is aggressive in manner, and quickly becomes bored or impatient with any situation where direct action is not possible. He is a doer, not a thinker.

(14) Nurturance: Nur

Definition: To engage in behaviors which extend material or emotional benefits to others. The subject high on this scale is of a helpful, nurturant disposition, but sometimes too bland and self-disciplined. His dependability and benevolence are worthy qualities, but he may nonetheless be too conventional and solicitous of the other person. The subject scoring low on Nur is the opposite: skeptical, clever, and acute, but too self-centered and too little attentive to the feelings and wishes of others.
(15) Affiliation: Aff
Definition: To seek and sustain numerous personal friendships. The high-scorer on Aff is adaptable and anxious to please, but not necessarily because of altruistic motives, i.e., he is ambitious and concerned with position, and may tend to exploit others and his relationships with them in order to gain his ends. The low-scorer is more individualistic and strong-willed, though perhaps not out of inner resourcefulness and independence. He tends to be less trusting, more pessimistic about life, and restless in any situation which intensifies or prolongs his contacts with others.

(16) Heterosexuality: Het
Definition: To seek the company of and derive emotional satisfactions from interactions with opposite-sexed peers. The high-scorer on Het is interested in the opposite sex as he is interested in life, experience, and most things around him in a healthy, direct, and outgoing manner. He may even be a bit naive in the friendly ingenuousness in which he approaches others. The low-scorer thinks too much, as it were, and dampens his vitality; he tends to be dispirited, inhibited, shrewd and calculating in his interpersonal relationships.

(17) Exhibition: Exh
Definition: To behave in such a way as to elicit the immediate attention of others. Persons who are high on this scale tend to be self-centered and even narcissistic. They are poised, self-assured, and able to meet situations with aplomb, but at the same time they are quick tempered and irritable. In their dealings with others they are apt to be opportunistic and manipulative. Persons who score low tend toward apathy, self-doubt, and undue inhibition of impulse. They lack confidence in themselves and shrink from any encounter in which they will be visible or "on stage."

(18) Autonomy: Aut
Definition: To act independently of others or of social values and expectations. The high-scorer on Aut is independent and autonomous, but also assertive and self-willed. He tends to be indifferent to the feelings of others and heedless of their preferences with he himself wishes to act. The low-scorer is of a moderate and even subdued disposition. He hesitates to take the initiative, preferring to wait and follow the dictates of others.
(19) Aggression: Agg

Definition: To engage in behaviors which attack or hurt others. The individual high on this scale is both competitive and aggressive. He seeks to win, to vanquish, and views others as rivals. His impulses are strong, and often under-controlled. In an appropriate situation he may drive on to worthy attainment, but often his behaviors will be self-aggrandizing and disruptive. The individual who is low on Agg is much more of a conformist, but not necessarily lacking in courage or tenacity. He tends to be patiently diligent, and sincere in his relationships with others.

(20) Change: Cha

Definition: To seek novelty of experience and avoid routine. Persons high on Cha are typically perceptive, alert, and spontaneous individuals who comprehend problems and situations rapidly and incisively and who take pleasure in change and variety. They have confidence in themselves and welcome the challenges to be found in disorder and complexity. The low-scorer seeks stability and continuity in his environment, and is apprehensive of ill-defined and risk-involving situations. In temperament he is patient and abliging, concerned about others, but lacking in verve and energy.

(21) Succorance: Suc

Definition: To solicit sympathy, affection, or emotional support from others. Suc appears to depict, at its high end, a personality which is trusting, guileless, and even naive in its faith in the integrity and benevolence of others. The high-scorer is dependent on others, seeks support, and expects to find it. The low-scorer, on the contrary, is independent, resourceful, and self-sufficient, but at the same time prudent and circumspect. He has a sort of quiet confidence in his own worth and capability.

(22) Abasement: Aba

Definition: To express feelings of inferiority through self-criticism, guilt, or social impotence. High-scorers on Aba are not only submissive and self-effacing, but also appear to have problems of self-acceptance. They see themselves as weak and undeserving, and face the world with anxiety and foreboding. Their behavior is often self-punishing, perhaps in the hope of forestalling criticism and rejection from without. The low-scorer is optimistic, poised, productive, and decisive. Not fearing
others, he is alert and responsive to them. His tempo is brisk, his manner confident, and his behavior effective.

(23) Deference: Def

Definition: To seek and sustain subordinate roles in relationship with others. The individual scoring high on Def is typically conscientious, dependable, and persevering. He is self-denying not so much out of any fear of others or inferiority to them as out of a preference for anonymity and freedom from stress and external demands. He attends modestly to his affairs, seeking little, and yielding always to any reasonable claim by another. The individual with a low score on Def is more energetic, spontaneous, and independent; he likes attention, likes to supervise and direct others, and to express his will. He is also ambitious, and is not above taking advantage of others and coercing them if he can attain a goal in so doing.

(24) Counseling Readiness: Crs

The clinical concept of "available anxiety" is relevant here, for in counseling the client must have a certain degree of motivation for change and improvement if counseling is to be effective. The main function of Crs is to help in identifying counseling clients who are ready for help and who seem likely to profit from it. The high-scorer on Crs is predominantly worried about himself and ambivalent about his status. He feels left out of things, unable to enjoy life to the full, and unduly anxious. He tends to be preoccupied with his problems and pessimistic about his ability to resolve them constructively. The low-scorer is more or less free of these concerns. He is self-confident, poised, sure of himself and outgoing. He seeks the company of others, likes activities, and enjoys life in an uncomplicated way.
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VITA

Paul David Warner

Candidate for the Degree of

Master of Science

Thesis: A Longitudinal Study of the Characteristics of Female College Students Who Select Academic Majors in Fields of Exact Science and Non-Exact Science

Major Field: Counseling Psychology

Biographical Information:


Education: Attended elementary school in Spanish Fork, Utah; graduated from Spanish Fork High School in 1967; received Bachelor of Science Degree from Brigham Young University, Provo, Utah, with a major in Psychology and a minor in English, 1973; completed requirements for the Master of Science Degree at Utah State University, specializing in counseling psychology, in 1975.

Professional Experience:

1974 State of Utah Coordinator for Operations Guidance, Utah State Board of Education.
1974 Graduate Assistant to Michael R. Bertoch, Ed. D. Utah State University, Logan, Utah
1973 Teaching Assistant to John R. Cragun, Ph. D. Utah State University, Logan, Utah
1973 Graduate Assistant to E. Wayne Wright, Ed. D. Utah State University, Logan, Utah
1972 Program Administrator, Special Courses and Conferences, Brigham Young University, Provo, Utah
1972 Coordinator of Youth Conferences, University Relations, Brigham Young University, Provo, Utah