

SEX ROLE ATTITUDES IN CAREER CHOICE: A REPLICATION AND
EXTENSION OF A 1978 STUDY

by

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ABSTRACT

The purpose of this study was to replicate a thesis conducted at the Humboldt State University campus, in 1978, which researched how women's attitudes towards female sex-role stereotypes in our society are associated with their choice of major. The current study was done on the same university campus, 27 years later. A main interest of the investigator is in finding out if the previous findings still hold today. The current study will then expand on the original research by examining whether men's attitudes towards female sex role stereotypes in our society significantly differ from women's and in addition, whether men's attitude towards women affects their career choice.

A sample of 120 undergraduate students were administered the Attitude Towards Women scale (AWS). The original study (Copland, 1978) found that attitudes towards women's social sex-roles were not related to career choice. It was hypothesized in this study that students' attitude towards women as measured by the AWS would be different among students in traditional and non-traditional majors. The results of this study did not support this hypothesis. It was further hypothesized that differences in attitudes towards women would be found between men and women. The results of this study did support this hypothesis. In addition, a significant interaction was found between sex and major choice such that when considered together, they had a significant effect on students' attitude towards women.

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TABLE OF CONTENTS

ABSTRACT	III
ACKNOWLEDGMENTS	IV
TABLE OF CONTENTS.....	V
LIST OF TABLES	VI
LIST OF FIGURES	VII
INTRODUCTION	1
REVIEW OF THE LITERATURE	4
HYPOTHESES	20
METHODS	21
RESULTS	25
DISCUSSION.....	30
REFERENCES	35
APPENDIX A.....	40
APPENDIX B	48

LIST OF TABLES

Table 1 ANOVA for AWS Score, Sex, and Tradition or Non-Traditional Career.....	25
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LIST OF FIGURES

Figure 1 Mean score on the AWS for traditional (n = 59) and nontraditional career choices (n = 60), according to sex of participant.	27
Figure 2 Scatterplot of correlation between MFR and AWS.....	29

INTRODUCTION

In 1978 a study was done on the Humboldt State University campus to investigate the influence of social sex-role stereotypes of women on career choices. Eighty female students were surveyed, and it was found that women in both traditionally female and non-traditionally female oriented fields of study held approximately the same attitudes toward women's social roles. In the twenty-seven years since this study was done, research has found that many constructs work together to affect career behaviors. Constructs, including the perception of appropriate roles for men and women, cultural beliefs, self-efficacy, gender stereotyping, and having a college education, all contribute to career behaviors (Bryant, 2003; Harris & Firestone, 1998; Gimenez, 1984; Hackett & Betz, 1981).

Research on gender stereotypes has documented people's belief that the typical traits and behaviors of men and women differ (e.g., Berndt & Heller, 1986; Cejka & Eagly, 1999; Spence & Helmreich, 1978). Some investigators have proposed theories in support of the belief that gender role stereotypes are socially constructed (Eagly, 1987; Bryant, 2003; Harris & Firestone, 1998). Other research conducted in the area of differences between men and women is evolutionary or biologically based. This school of thought suggests that innate differences between men and women are the basis of social stereotypes (Rhoads, 2004; Lippa, 2002).

When comparing career preferences of men and women, stereotyping is believed to have an effect on career choice (e.g., Bodenhausen & Wyer, 1985; Farmer & Waugh,

1999). According to the selective processing hypothesis, the activation of a stereotype may lead to differential processing of information depending on its consistency with the implications of the stereotype. Therefore, the effects of activating a stereotype may override the effects of other variables in career decisions.

The perception of appropriate roles for men and women is one of the variables that may also effect career choice (Bryant, 2003; Harris & Firestone, 1998; Eagly, 1995). In her review of women's achievement and roles, Eccles (1987) describes how beliefs about gender could affect men and women's different career choices through gender-role socialization of personal and professional values. Such beliefs can lead others to pressure males and females into different social roles.

Cultural beliefs are also believed by some to bias both men and women's career related behavior. Current changes in American culture show that for women, motherhood and careers are no longer distinct life paths, rather, many women aspire to a combined path (Gimenez, 1984). Also, current popular opinion shows differing views between men and women regarding perceived barriers that impact negatively on career paths for women. (Silverstein, 1996).

Self-efficacy is another researched mediator of the relationship between a person's ability and his or her choice of various careers (Hackett & Betz, 1981). Self-efficacy expectations will impact the initiation of a behavior, the amount of effort expended on a task, and the degree of persistence on a task in the face of obstacles and aversive experiences (Bandura, 1977). Male and female vocational choices may result from their

different but equally important goals for their lives as well as their expectations to be able to successfully execute required behaviors for their career choice.

Having a college education is one factor that has been shown to increase the non-traditional sex-role attitudes of students with respect to the activities believed to be appropriate for women. Both male and female students' levels of traditionalism declined during college. Although change was similar across gender, women held more egalitarian views than did men at both college entry and four years later (Bryant, 2003).

The intricacy of the variables researched and the time passed since the original study was conducted on the Humboldt State University campus have led this researcher to re-visit the original study. For that reason, this thesis looks at the current association between social sex-role stereotypes for women and career choices. A vital addition to the original research conducted in 1978 is the investigation of the relationship between female sex role stereotyping and male career choice. Finally, a study of the differences between male and female attitudes towards women was conducted.

REVIEW OF THE LITERATURE

There has been considerable progress and change among theories and research on career development. More recently, however, researchers (e.g., Lent, Brown, & Hackett, 1994) have called for efforts to unify diverse theories and to discover the ways in which many constructs work together to affect career behaviors. In response to this call, Lent, et al. (1994) outlined an overarching social cognitive framework that encompasses variables that originated from seemingly diverse theories of career development.

Gender Differences in Career Choice

Empirical research on gender stereotypes has consistently documented that people believe that the typical traits and behaviors of men and women differ (e.g., Berndt & Heller, 1986; Cejka & Eagly, 1999; Spence & Helmreich, 1972). A research synthesis of the 1980s and 1990s offered increasing evidence of differences between genders, especially in social behavior and personality (Eagly, 1995). Eagly (1995) contends that research now reflects a shift from a description of gender differences, to a question of why they sometimes differ considerably and at other times differs moderately or not at all.

Eagly believes that gender roles are socially constructed (1987). Based on Snyder's behavioral confirmation of a stereotype theory (as cited in Eagly, 1987), Eagly suggests that the expectations placed upon men and women hold the power to determine their behavior. Society's shared expectations about the appropriate qualities or behaviors of men and women may lead to social norms (Eagly). These skills and beliefs relevant to

social behaviors may be acquired via an anticipatory socialization process. For example, babysitting jobs are held mainly by girls, this may leave them with a higher level of skill for nurturing young children.

In her model used to describe the differing career paths of men and women, Eccles (1987), illustrated how beliefs about gender could affect men and women's different career choices through gender-role socialization of personal and professional values. In turn, such beliefs may lead others to pressure males and females into different social roles. According to Eccles (1987), sex differences in gender role definitions and in one's hierarchy of values stem from differential socialization experiences and the internalization of both overt and subtle culturally defined gender roles. The resulting interest patterns and personal beliefs may influence the occupational differences between men and women.

According to gender-stereotype studies, the beliefs that people hold about the differences between men and women can be summed up in two dimensions which define positive personal attributes (Eagly, 1987). They are the communal and agentic dimensions. The communal dimension describes a concern for the well being of others and is believed by some to be manifested more strongly in women than men. The agentic dimension depicts an assertive and controlling tendency and is believed by some to be manifested more strongly in men than women. While they do exist, these gender stereotypes do not imply that people believe that men and women belong in totally separate categories. Eagly contends that, "people's beliefs appear to represent the sexes

as somewhat heterogeneous, partially overlapping groups, possessing different average levels of various attributes” (p. 17).

Both evolutionary and biological theorists pose an alternate perspective to the origin of gender stereotypes, suggesting that they are a reflection of innate differences between men and women (Rhoads, 2004; Lippa, 2002). Based on Darwin’s theory of evolution, and according to Lippa, evolutionary theory asserts that any traits that give the slightest advantage to the organism will be bred into the species. According to Lippa, “over the history of our species men and women have been subject to somewhat different evolutionary pressures” (p. 74). As an example, because hominid women were responsible for bearing and raising the children they evolved to become more nurturing. Men were responsible to hunt food and protect the family and so they evolved to be more aggressive and better at visual spatial ability. Evolutionary theorists believe that men and women have evolved to have somewhat different reproductive strategies and physical and behavioral traits.

According to the biologically based theory of gender roles, differences between men and women’s behavior are evident from infancy (Rhoads, 2004). Evidence cited in Rhoads book, *Taking Sex Differences Seriously* includes differences in male and female infants’ duration of eye-contact and female infants being able to distinguish photographs of people they know from those they do not, while male infants generally cannot. Brain differences in men and women reveal inherent disparity in both brain construction and in the way men and women use their brain (Rhoads). According to Rhoads, neuroscience has revealed that women have more neurons connecting the left and right hemispheres of

their brains and that women seem to use more neurons in total than men while performing the same tasks. These neuronal differences are suggested by Rhoads to support the theory that gender roles are a reflection of innate differences.

Another study researching the premise that gender roles are a reflection of innate differences between males and females, aims to confirm already established sex differences in performance on tests of certain cognitive abilities (Rahman & Wilson, 2003). An analysis of the performance of men and women on tests of spatial rotation and line judgement strongly suggests that sex differences in spatial abilities do exist. After performing a meta-analysis on a battery of spatial tests given to 120 participants, Rahman and Wilson (2003) reported further evidence for the existence of sex differences in favor of males in tests that assess mental rotation and spatial perception skills. The novelty of these assessment demand characteristics suggests that the observed differences between women and men cannot be explained by maturational or developmental experiences.

Empirical research has shown that there are several factors that may affect the public's view on sex roles (Harris & Firestone, 1998). After using data from the National Opinion Research Center's General Social Surveys for 1974-1994, Harris & Firestone analyzed changes in gender role ideology among women in the United States. The most important variables that effect women's views about appropriate roles for men and women are education, age, year, and religious strengths, in that order. Education, age, and year were positively related to egalitarian sex-role views and stronger religious affiliation was associated with more traditional sex-role views among women. After controlling for the various influences on gender role attitudes they found that there was a

collective shift toward more egalitarian sex-role attitudes among all women regardless of their individual differences.

Changes in attitude towards activities deemed appropriate for women are also occurring among college students (Bryant, 2003). National college student data derived from the 1996 Cooperative Institutional Research Program Freshman Survey and the 2000 College Student Survey were used to assess longitudinal changes in gender role traditionalism across four years of college. Results confirmed that student's level of traditionalism declined during college. It was found that a variety of student characteristics and college experiences including student peer groups, diversity experiences, and chosen major are relevant to the change. Although both male and female students' level of traditionalism towards women declined in 2003, men were found to have a more traditional attitude towards women at college entry and four years later than did women (Bryant).

While research demonstrates a change in the perception of appropriate roles for men and women (Bryant, 2003; Harris & Firestone, 1998; Eagly, 1995), it has not seemingly resulted in a reduction in gender segregation among scholastic subjects. According to one study, trends in the national data demonstrate that considerable convergence of college major choice by males and females occurred between 1951 and 1976 (Turner & Bowen, 1999). The main influence on this transformation was the movement of women out of humanities and into fields like economics and life sciences, with the amount of women choosing economics rising from less than 2.5% to 7.5% and the portion choosing the life sciences growing from 3.3% to 11.7%. Interestingly there

was a lack of further change between 1976 and 1989. Students segregate themselves, with scientific subjects being male dominated and Arts/Humanities having a higher female enrollment. Turner and Bowen (1999) proposed two possible explanations for the slowing in convergence of male and female students' college major choices. Their explanations include marked variations in the experiences of men and women during the college years and women and men attaching different values to the after-college opportunities associated with the different areas of study.

Factors involved in career choice

At the same time that women are re-thinking their career options and extending them into traditionally male-dominated areas, there is little change in their thinking about the primacy of motherhood (Baber & Monaghan, 1988). In 1988, Baber and Monaghan conducted a survey concerning college-age women's attitudes toward careers and childbearing. Among 250 unmarried females at a public university in New England they found a common belief that, "if they handled their responsibilities properly, could stay on top of things, and were organized and flexible enough, they should have little difficulty" in having children, a career, and a marriage (p. 200).

After surveying 430 public relations students at 17 different universities across the United States on their perceptions of gender issues, Farmer and Waugh (1999) found that women are more likely than men to report that they want to maintain both a career and family. Results from the same survey also revealed that female students are more likely to believe that they will have to postpone having a family in order to advance in

their careers. In a comparison study of 173 female students who chose traditional or non-traditional careers, work plans were found to be similar. Women in both types of fields start out wanting it all; i.e., a career and family (O'Connell, L., Betz, M., & Kurth, S., 1989). Regardless of the nature of their career choice, after accounting for work commitment and egalitarian gender beliefs, women in both groups were similarly inclined to interrupt work in order to care for young children.

Balancing work and family is thought to be a main contributor to the disparity in wages earned by men and women (Shack-Marquez, 1984). One problem with most data sets on individual earnings is the absence of work histories and actual labor force experience for individuals (Farrel, 2005). According to Shack-Marquez, it is well known that experience is positively related to wages. The same research found that many women chose to interrupt their careers because of family responsibilities. Subsequently, it is important to quantify the effect of these interruptions on earnings paths as a contributor to the disparity in earned wages.

It has been found that women who leave the work force are more likely to be married and have children than are their counterparts who remain in the work force (Jacobsen & Levin, 1995). In a comparison of the wage differences between women who work continuously and women who interrupt their careers, definite wage differences were found. Using data from the 1984 Survey of Income and Program Participation, women ages 30-64 were sampled over a period of 32 months. Each woman in the sample was required to report their earnings at the 1st, 6th, 12th, 18th, 24th and 32nd months. It was found that although wages that dropped as a result of a break from the work force did rise

over time, women who remained at work continue to earn a 10% higher wage than those who left the labor force. Eighty-five percent of those surveyed stated that they left the work force for family reasons.

One possible influence on women's beliefs about sex roles is their mother. When looking for variance in sex-role attitudes among young girls, Ex and Janssens (1998) found that mothers' sex-role attitude had a direct bearing on their daughters' attitude. "The more traditional the gender role attitudes of the mother, the stronger her tendency to emphasize a daughters' conformity, and the more traditional her daughters' attitudes appear to be" (p. 182). A mother's level of education was also an indicator of more non-traditional sex-role attitudes in both themselves and their daughters.

Culture also plays a role in career choice. Correll states (2001) that cultural belief about gender influences the early career-relevant decisions of men and women. Using data from the National Educational Longitudinal study of 1988 which surveyed approximately 25,000 eighth grade students, their parents, teachers, and school administrators from over 1,000 schools, Correll found that cultural beliefs are related to both males and females' perception of their competence in quantitative subjects.

After controlling for differences in ability and performance feedback, males were more likely to perceive that they were good at math than were those females with equal math grades and test scores. Correll (2001) suggested that cultural beliefs associated with a particular field of study bias students' perceptions of their abilities in that field. Other research suggests that students use effective understandings of their competencies when making career-relevant decisions (Gati, Osipow, & Givon, 1995; Raffaele-Mendez &

Crawford, 2002). Cultural beliefs about gender may then contribute to directing men and women in largely different career directions. It is important to note that the model Correll (2001) proposed was in respect to quantitative professions, and it has yet to be seen whether this models applies to all types of studies.

Men and women appear to hold differing views regarding the perceived barriers facing women's increasing career success (Silverstein 1996). The Los Angeles Times ascertained these differences in a popular-opinion survey of female executives and male CEO's of fortune 1000 companies. While women considered male stereotyping and preconceptions of women to be an obstacle, men in sharp contrast believed "lack of significant general management or line experience" (p. 1) to be the greatest obstacle in women's advancement. Two factors thought by women to be crucial to their success were "consistently performing on the job beyond expectations and developing a work style with which male managers are comfortable." While both men and women are optimistic about women's advancement in the future, women disagree with men's belief that it is only a matter of time before things change. Although not empirically based, the Los Angeles Times survey found that, among female executives surveyed, they battle stereotypes questioning their ability to maintain both a career and family.

Women may not view stereotyping as their only obstacle. According to Siann, and Callaghan (2001), who researched the under-representation of women in science, engineering and technical courses in higher education in Britain, the perception of science and technology as culturally masculine and misogynistic in practice are possible factors in women's decision against entering the field. Until more recently scientific

enquiry has been lead mainly by men and the profession is still viewed by some as dominated by patriarchal discourse and practices (Siann & Callaghan, 2001).

The construct of self-efficacy may be an important mediator of the relationship between a person's ability and his or her choice of various careers (Hackett & Betz, 1981). The construct of self-efficacy originated from Bandura's (1977) social learning theory and was drawn upon by Hackett and Betz (1981) to conceptualize the career behaviors of women. Bandura's theory states that self-efficacy expectations are a person's beliefs about his or her ability to successfully execute a behavior. Self-efficacy expectations will impact the initiation of a behavior, the amount of effort expended on a task, and the degree of persistence on a task in the face of obstacles and aversive experiences (Bandura, 1977).

Research has supported the relationship between self-efficacy expectations and choice of math-related college majors (Betz & Hackett, 1983; Eccles, 1987). Hackett and Betz (1981) contend that women, compared with men, reported significantly lower levels of self-efficacy expectations in relationship to nontraditional fields such as mathematics, engineering and accounting. Hackett and Betz (1981) also suggest that the major contributing variables to the choice of career options were traditional and non-traditional interests. While the degree of interest in traditional occupations was positively related to selection of traditional options, degree of interest in non-traditional occupations was negatively related to the extent of consideration of traditional options.

According to Raffaele-Mendez and Crawford (2002), who studied 227 6-8th graders, boys limited their aspirations to more male dominated careers with higher

prestige, while girls expressed interest in both male and female dominated options. This study also found that boys and girls attitudes towards women had very little to do with the types of careers to which the students aspired. Instead, boys who saw themselves as having more expressive traits such as kindness and understanding were less likely to rule out occupations simply because they were nontraditional for their gender.

Career preferences have also been linked to the desirable characteristics of different occupations. When comparing career preferences of men and women, one study found that men and women demonstrate strong differences in the preference of desirable characteristics of their occupations (Gati, Osipow, & Givon, 1995). Two thousand young adults in Israel participated in a study that showed that more men than women preferred negotiation, management, supervision and working in the fields of business and technology. In contrast, more women than men preferred providing psychological help and community service, utilizing artistic ability, and working in the fields of culture and service (Gati et al., 1995). Both men and women attributed high importance to professional advancement, income, variety and finding fields of interest.

Eccles (1987) suggests that the differences found in men and women's vocational choices are a product of men and women, on average, having different goals for their lives. Eccles proposes that occupational choices could be linked to expectations for success and subjective task value. These constructs in turn are linked to gender role socialization and self-schemas. For example, women are less likely than men to seek out careers with heavy mathematics components because women are less confident in their mathematics ability than men and because women are less likely than men to view

mathematics and related fields as useful. While women are more likely than men to place a high value on people-related endeavors such as combining a career and a family, men in comparison, emphasize more status-oriented values (Lips, 1992).

Not only goals, but also values may play a role in the highest gender imbalances being found in Engineering, Education, Arts and Mathematics (Chevalier, 2004; Betz, N. & Hackett, G., 1981). “Women have characteristic traits that show lower career expectations and long-term values that are less driven by career success” (Chevalier, 2004, p. 11). While men are more likely to recognize career development and financial rewards as important long-term values women distinguish personal development, job satisfaction, and doing a socially useful job as important long-term values. Even when accounting for motivation and expectations, women seem to be more likely to work in the public sector than men (Chevalier, 2004).

Continued disapproval for women who pursue careers

Current questions have arisen as to whether traditional sex-role attitudes are making it more difficult for men to enter the social work profession. For example, social work has typically been viewed as a “women’s profession” (Perry & Cree, 2003, p. 375). Also, there are financial considerations. Men still tend to carry the burden of financial responsibilities in some families and because social work salaries and conditions of service have not kept up with comparable demanding occupations, like education and nursing, it makes it difficult for any one person in this field to support a family (Perry & Cree, 2003).

In his book *Why Men Earn More*, author Warren Farrell expresses a different opinion. According to his research, the pay gap between men and women can no longer be attributed to large-scale discrimination against women. Farrell comments on the encouragement received by women to enter fields involving engineering, computers and math and science. Such encouragement includes better starting salaries than men's, female-only government scholarship, and female-only corporate grants and scholarships. According to Farrell (2005), "when women do enter male-dominated fields, they tend to enter the more glamorous occupations" (p. 25).

Differences in work orientation

When describing "twenty-five ways to increase your pay," Farrell (2005) notes the importance of supply and demand. Careers that are fulfilling, flexible, and safe usually pay less because more people compete for them causing the supply of applicants to be greater than the demand for the most fulfilling jobs. The characteristics of the types of work to which women tend to be interested do not constitute a high pay formula because they are the same conditions that most people prefer (Farrell, 2005). These characteristics "include physical safety, little financial risk, no exposure to inclement weather, pleasant working conditions, short commutes, and no midnight-to-8 a.m. shifts (Farrell, 2005, p. 10).

In addition to possible barriers to particular fields, Siann and Callaghan (2001), discuss the reasons behind women choosing nontraditional fields of study. They ascertained that a major reason people avoid the traditionally male fields of study is the lack of "social responsibility and opportunity to work in the area of human relationships"

found in those fields (p. 92). They found that while studies show these factors to effect both male and female career choices there is a more marked effect for women.

The role of stereotypes in decision-making

When comparing career preferences of men and women, stereotyping is believed to play a large role (e.g., Bodenhausen & Wyer, 1985; Farmer & Waugh, 1999). The research of Bodenhausen and Wyer (1985) which investigated the effects of stereotyping on reactions to behavioral transgressions at work indicated that stereotypes function as judgmental heuristics. After subjects had read a case file describing a transgression committed by a target, they judged the likelihood that the transgression would recur and recommended the severity of the discipline to be used on the target. Ethnicity of the target was conveyed through their name. The effects of activating a stereotype appeared to have overridden the effects of other information available about the target.

A later study conducted by Bodenhausen (1988) indicated that selective processing is the critical process underlying observed judgmental discrimination. The selective processing hypothesis proposes that the activation of a stereotype may lead to differential processing of information depending on its consistency with the implications of the stereotype. According to Bodenhausen, when a stereotype was available, subjects used it as a premise around which they organized evidence that was consistent with the stereotype. At the same time subjects failed to incorporate information inconsistent with the available stereotype.

Farmer and Waugh (1999) found that while male students strongly agreed that sex discrimination was no longer a problem, they did not strongly agree that female public

relations managers were as effective as male managers. Farmer and Waugh also found that 430 women and men studying public relations did not expect to start comparable careers at similar salaries. Results of their survey indicated that female participants expected to start at a lower salary compared to male participants. Survey results also indicated that female participants expect to be promoted behind their male counterparts (Farmer, & Waugh, 1999, Baber & Monaghan, 1988). Compared to this perception, according to the *Monthly Labor Review* in March of 1998 (Hecker), in some fields of study and occupations women do particularly well in relation to men, in others they do not fare so well, and in still others, they are fare about the same.

Some statistics show that the rate of pay is not dependent on sex as much as it is on career equality (Farrell, 2005). According to Farrell (2005) women who have never married or had children earn 15% more than their male counterparts, when both groups worked full-time, were college educated and in the same age group. Farrell's answer for why some women do earn less than men is that, on average, maximizing earnings is less of a priority for women that it is for men (2005). Men are 50 times more likely than women to be the primary or sole breadwinners for their families, and even well-educated, more ambitious women are less committed to their careers and less willing to make sacrifices for them (Farrell, 2005).

Current Study

This study proposes that because of the complexity of the variables researched and the time passed since the original study was conducted on the Humboldt State University campus, it is important to re-visit the original study. For that reason, this

thesis explored the current relationship between social sex-role stereotypes toward women and career choice. Because of research indicating a relationship between sex-role stereotyping and men's career decisions, it could be argued that a valuable piece of research was missed in the original study. As such, this study included males. Furthermore it was proposed that there is a difference in men and women's sex-role attitudes.

HYPOTHESES

1. Differences in attitudes towards women, significant at the .05 level, will be found between male and female students.
2. Differences in attitudes towards women, significant at the .05 level, will be found between students in traditional and non-traditional majors.

METHODS

Participants

In order to replicate the methodology and class standing characteristics of the original study sample, subjects were upper division students enrolled at Humboldt State University. A total of 60 male and 60 female subjects were surveyed. Thirty male and 30 female subjects were majoring in traditionally female fields such as nursing, and education. The other 30 male and 30 female subjects were majoring in traditionally male-oriented fields like math, engineering, and business administration. Subjects were chosen according to availability and permission of the professor to utilize class time. For a full description of the samples' demographics see Appendix B.

Subjects were recruited from specific traditional sex role classes and non-traditional sex role classes through contacting professors. Due to trouble getting the desired sample size intended through classroom survey administration, an alternative method was utilized. More specifically, the pencil and paper survey was translated into an internet survey and e-mailed to the business and engineering departments. The sample needed to complete the survey was eight non-traditional females and six traditional males.

For in class assessment, informed consent was obtained prior to assessment. Online consent was gained prior to access to the survey. Treatment of subjects was in accordance with the ethical standards of American Psychological Association.

Measures

A self-report anonymous questionnaire measured both men's and women's attitudes towards the rights and roles of women in today's society. The Attitude Towards Women Scale (Spence, J.T., & Helmreich, R.L., 1972)—Short Form (AWS-Short) contains 25 items. Each item contained a declarative statement and four possible responses. The responses are (A) Agree Strongly, (B) Agree Mildly, (C) Disagree Mildly, and (D) Disagree Strongly. Each item was given a score from 0 to 3 with 0 representing the most traditional attitude and 3 representing the most liberal, profeminist (the theory of the political, economic, and social equality of the sexes) attitude. Certain items were reverse scored to prevent response set bias by participants. The specific alternative given the 0 score varies from item to item. Each subject's score was attained by summing the scores on all the items with a range of possible scores from 0 to 75. A high score on the AWS-short indicates a more liberal, profeminist attitude towards women.

One validity study done on the AWS-Short form stated that the scale seems to be useful in differentiating feminists from an over-all population (Kilpatrick D.G, Smith A.D., 1974). Spence and Helmreich reported that factor analysis indicates that the short form is essentially unifactorial. No other psychometric data on this measure was found.

In order to increase the validity the AWS measure, a second more empirically validated self-report anonymous questionnaire measured several components of sex-role behaviors and preferences. A bivariate correlation was run between scores on the AWS and The Male-Female Relations Questionnaire- MFR (Spence J., Helmreich, R., Sawin,

L., 1980). The MFR contains 30 items, which are divided into three scales. One sub-scale was not used in this study due to its non-relevance and in order to prevent fatigue among participants.

The two MFR sub-scales used were Social Isolation, where a high score describes the individual's tendency to modify behavior in social situations containing implicit sex-role demands (e.g. I'd rather have a man as a boss at work than a woman); and the Expressivity scale where a high score describes a liking for masculine dominant men (e.g. I like men who act assertive and independent.). Each item was given a score from 4 to 0 with 4 representing strongly agree and 0 representing strongly disagree. Each subject's score was attained by summing the scores on all the items with a range of possible scores from 0 to 80. The scale coefficient alpha reliabilities ($n = 250$) are .87 for Social Interaction, and .67 for Expressivity.

Procedures

The investigator contacted the instructors for each selected class and requested permission to administer the measure in the classroom at either the beginning or end of class according to the instructor's permission. The investigator informed the potential participants of the purpose of the research: "The investigator is attempting to compare H.S.U. students' attitudes towards women's roles in society among students in various major fields of study". The investigator then distributed the 25-item short-version of the Attitude Towards Women Scale and the 20-item Male-Female Relations Questionnaire with the written informed consent, making sure to counter-balance the survey so as to avoid order effects. There was no personal identification on the answer forms. The

investigator then read the consent form out loud to the participants, indicating that participation was voluntary and that their completion of the survey expressed their consent for participation. The principal investigators contact information was left with the participants.

The internet version of the survey was set up by George Bailey the Psychology Department Computer Laboratory Technician. Consent was provided online prior to access of the survey. Responses were anonymous and e-mailed directly to the researcher.

This project was approved by the Committee for the Protection of Human Subjects in Research on September 27, 2005. Approval number 05-03.

RESULTS

To determine whether significant differences in attitude towards women were found between the four sample groups the mean scores of all four sample groups were compared using a 2X2 ANOVA (See Table 1). As expected, a main effect for sex was seen ($F(1,119) = 20.19, p = .000$), indicating that men held significantly more traditional attitude towards women's social roles ($m = 57.24$) than did women ($m = 65.78$). A main effect for career was not found ($F(1,119) = .615, p = .435$), signifying that there was no significant difference in attitude towards women between students in traditional and nontraditional career paths.

Table 1

ANOVA for AWS Score, Sex, and Tradition or Non-Traditional Career

Dependent Variable: AWS Score					
Source	Sum of Squares	df	Mean Square	F	Significance
Sex	2200.13	1	2200.13	20.190	*.000
Career	66.97	1	66.97	0.615	0.435
Sex*Career	724.06	1	724.06	6.640	*.011
Error	12533.53	115	108.99		
Total	466258.00	119	119.00		
Corrected Total	15493.50	118			

A significant interaction was found between sex and career $F(1,119) = 6.64, p = .011$. It was found that while males in traditional career paths hold a more traditional attitude towards women ($m = 53.97$) than males in nontraditional career paths ($m = 60.4$), it is women in nontraditional career paths who have the more traditional attitude toward women ($m = 64.1$) as compared to their traditional counterpart ($m = 67.5$) (See Figure 1).

The above reported results are representative of the data used following the removal of one survey. The score of subject TM23 was an extreme outlier. Since the score deviated substantially from the mean of his group, the investigator recalculated the mean without this score. The mean of traditional men was 53.97 with the outlier excluded. When looking at the demographics of TM23 it was noted that out of the five participants whose mothers earned their Ph.D, TM23 was the only participant whose father's highest level of education was his high school diploma. The other four participants' fathers had earned a college level degree. Even after removal of the extreme outlier the AWS data is skewed to the left; 75% of the participants had an AWS score of 55 or more.

In order to test the importance of certain demographic variables, a final comparison of means was performed between students whose mothers worked part-time during their adolescence (ages 14-18) and whose mother did not work at all during their adolescence. Students whose mothers worked part time during their adolescence scored significantly higher (indicating they are less traditional) on the Attitudes Toward Women Scale (AWS), $t(40) = 2.20, p = .033$ than those whose mothers did not work at all during

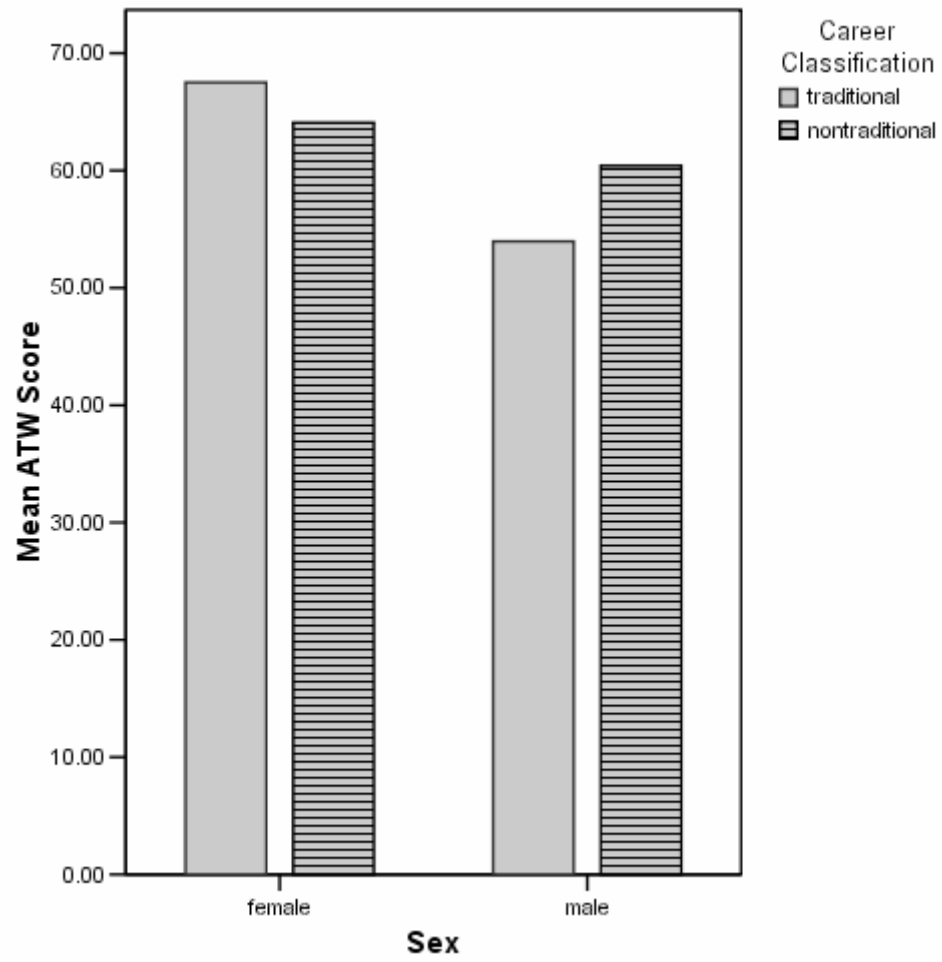


Figure 1 Mean score on the AWS for traditional ($n = 59$) and nontraditional career choices ($n = 60$), according to sex of participant.

their adolescence. There were no further significant findings derived from the demographic information collected.

The investigator hypothesized that the subjects in traditional major study choices would hold significantly different attitudes toward women's social roles than subjects in nontraditional major study choices. Based upon the results reported, the hypothesis was not supported (see results reported above).

The investigator further hypothesized that differences in attitudes towards women's roles in society would be found between male and female students. This hypothesis was supported, (see results reported above).

To further validate the AWS, participants' scores were correlated to their scores on the Male-Female Relations Questionnaire (MFR). After running a Spearman's rho correlation, it was found that there is a correlation between subjects' scores on both measures, ($r = .299, p = .001$). This indicates a small positive correlation between participants' scores on the AWS and their scores on the MFR (See Figure 2). While those who scored higher on the AWS tended to score higher on the MFR, the rho score indicates that the scores on the AWS and MFR have only a modest relationship with each other. This implies that the AWS and MFR are measuring unique constructs.

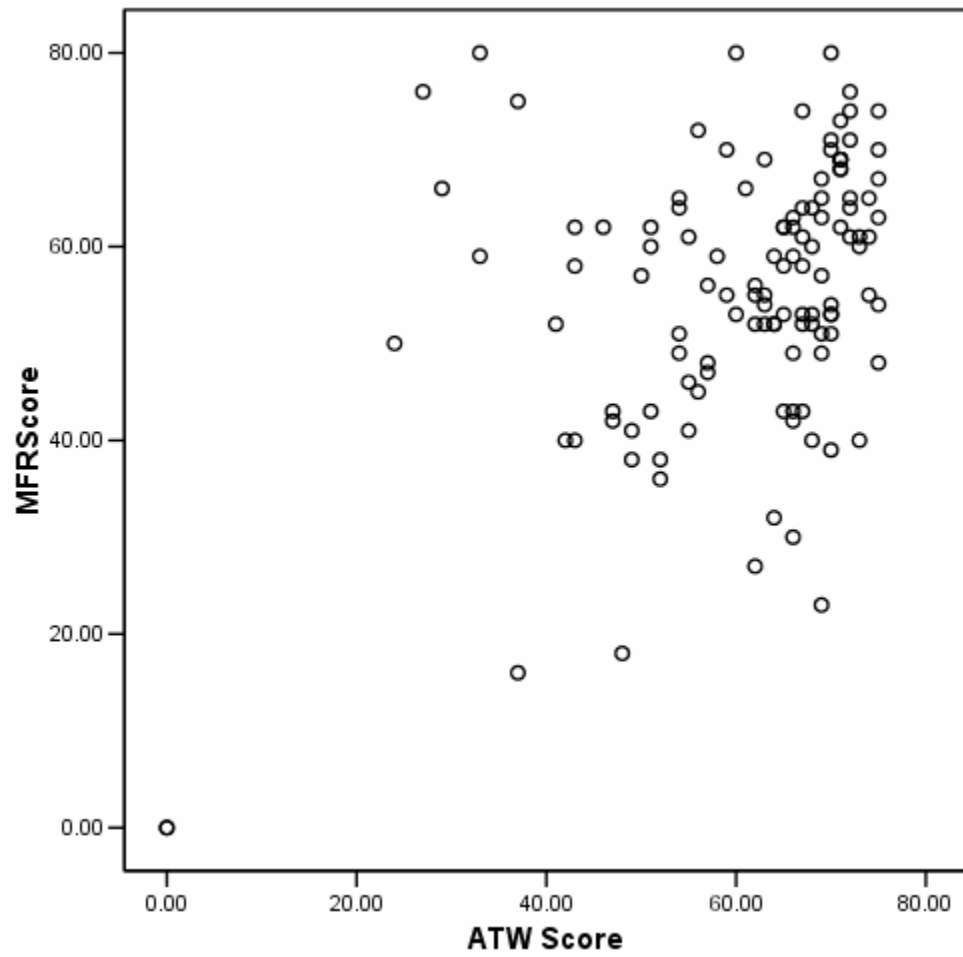


Figure 2 Scatterplot of correlation between MFR and AWS

DISCUSSION

The results of this study revealed that peoples' sex does interact with their attitude towards women's role in society, with men preferring more traditional roles than women. This study also lent further validation to original findings that there is no significant correlation between students' career path and their attitude towards women's roles in society. When sex and career interacted together as variables there was a significant effect on participants' attitudes. This implies that while career path alone is not a significant variable, when viewed in terms of a participant's sex it plays an important role.

Among the scores on the Attitude Towards Women Scale (AWS), the variation in scores was much larger for men ranging from 24 to 75, a 51 point difference, while for women it went from 43 to 75, a 32 point difference. Women's scores clustered into a smaller range of attitudes indicating more of a consensus on the roles that women believe they should play in our culture. Scoring on the AWS indicated that there exists greater variation within the male population, including both very traditional and very non-traditional attitudes towards women. The greater variation of men's scores implies that men are on a much less united front in terms of their beliefs concerning women's roles in society. This difference in variation may also be indicative of continuing change in cultural beliefs regarding women.

One interesting participant to note is TM23, who was excluded from data analysis because he was an extreme outlier. When looking for a possible explanation for his

extremely non-traditional attitude towards women, it was noted that of the five participants whose mother's highest level of education was Ph.D level, his was the only one whose father's highest level of education was a high school level. His parent education differential was the largest of the 120 participants and his scores were the most traditional of the 120 participants. It would be of value to analyze this correlation in further studies on this topic.

An unexpected finding of this study was that women on nontraditional career paths scored lower on the AWS (indicating a more traditional attitude) than did women on traditional career paths. There was not a significant difference between the two populations, nor did career alone have a significant effect on attitude towards women in society, but it is a point of interest. It might represent a response to society's pressure for women to be less traditionally oriented than they have been. Perhaps in response to pressure, women of traditional career orientations may over-emphasize their belief in the non traditional expectations of women. Alternatively, women in nontraditional careers continue to have a seemingly traditional orientation towards women in society.

An unanticipated lack of significance in the effect of career orientation on attitude towards women's roles in society might be explained by the studied sample size. Based upon a power analysis (Kraemer & Thiemann, 1987), there was an 80% chance of detecting a moderate effect size but a smaller effect size may not have been detected. Due to the restriction of needing the classroom instructor's approval to gain access to the class, there were only five career types sampled (business administration, education, engineering, math, and nursing). It may be that the variation in the sample size was not

enough to detect the effect of career orientation on attitude towards women. Because of this it will be important for future studies to have a larger sample in case the population has more variation than the researcher was able to obtain.

According to correlational analysis of the MFR and the AWS, those who scored higher on the MFR also scored high on the AWS. Because the MFR measures sex-role behaviors and the AWS measures attitude towards sex-role behaviors some correlation was expected. The correlation that reported ($r = .299$, $p = .001$) indicates a small but significant relationship between these two measures; however, these measures are separate and distinct. Based upon the reported results it would be difficult to claim that the MFR score predicts the AWS score.

Limitations

Because of the highly skewed nature of the data, there were several concerns regarding generalizing the results of this study. First, it was run at a small West Coast campus where the community itself is already considered to be liberal in nature. This puts into question whether the sample truly represents the average population. Seventy percent of the sample population was Caucasian, which is a little less than the national average. Again this puts into question the representative nature of these results. This study may benefit from being replicated in a more diverse community.

A second limitation of this study was that the measure used to evaluate students' attitude towards women, the AWS, brought up many concerns for the participants. While being viewed favorably within the research community, comments of concern for the outdatedness of the measure were made by participants. Many participants reported being

frustrated by the dichotomous nature of the questions being asked. Verbal response indicated that participants felt their answers would be misunderstood as mutually exclusive. An example question that caused concern is number 10. *Women should worry less about their rights and more about becoming good wives and mothers.* One participant reported feeling that women should worry about both their rights and becoming good wives and mothers. They felt there was no way for them to express their perspective.

Because participants' reactions to the AWS measure were typically verbal and made while filling out the measure itself, it is likely that some participant's public criticism of the measure would have had an effect on the responses of other participants. Creating a more up-to-date version of the measure and administering the survey online would be a benefit to further research. In addition, it is important to consider is that due to the face validity of the AWS, subjects' scores may be more of a reflection of what they think they should believe than a reflection of true attitudes.

Clinical Implications

The results of this study have relevant clinical implications. It is important for clinicians to realize that men and women continue to have significantly different attitudes towards women's roles in society. This disparity will be evident in clinical practice when working with family, individual and work related issues. The greater variation in men's attitudes towards women indicates the importance of making implicit beliefs explicit within the therapeutic context. In our politically correct culture it is a great challenge to contemporary clinicians to create open dialogues with their clients on the topic of sex role

attitudes. This being so, it can be of great value to help a client differentiate between the values of society, and their own personal values.

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APPENDIX A

Questionnaire

Consent Form

Thank you for agreeing to participate in this research project where we are attempting to compare attitudes toward women's roles, among students in various major fields of study. The questionnaires should take approximately 15 minutes to complete. The principle investigator is Stephanie Haley (Email: scr18@humboldt.edu) a graduate student working on her master's thesis. She can also be contacted through T. Mark Harwood, PhD., (Email: tmh29@axe.humboldt.edu), Assistant Professor of Psychology at Humboldt State University at (707) 826-3747.

Your participation in this study is entirely voluntary and you may decline to continue at any time without jeopardy. Please do not answer these questions if you are less than 18 years of age. If you choose to participate please answer the questions as honestly and completely as possible.

All information will remain anonymous. Do not put your name anywhere on any of the forms. By completing and submitting these questionnaires you indicate your consent to participate. You may stop at any time. Following completion of the study all data will be destroyed. If you feel the need to discuss the questionnaires after completing them, please contact the principle investigator Stephanie Haley at her Email address.

Attitudes Toward Women Scale—Short Form

J. T. Spence and R. L. Helmreich

The statements listed below describe attitudes toward the role of women in society which different people have. There are no right or wrong answers, only opinions. You are asked to express your feelings about each statement by indicating whether you (A) Agree strongly, (B) Agree mildly, (C) Disagree mildly, or (D) Disagree strongly. Please indicate your opinion by marking the column which corresponds to the alternative which best describes your personal attitude. Please respond to every item.

(A) Agree strongly	(B) Agree mildly	(C) Disagree mildly	(D) Disagree strongly	
1. Swearing and obscenity is more repulsive in the speech of a woman than a man.	A	B	C	D
2. Women should take increasing responsibility for leadership in solving the intellectual and social problems of the day.	A	B	C	D
3. Both husband and wife should be allowed the same grounds for divorce.	A	B	C	D
4. Telling dirty jokes should be mostly a masculine prerogative.	A	B	C	D
5. Intoxication among women is worse than intoxication among men.	A	B	C	D
6. Under modern economic conditions with women being active outside the home, men should share in household tasks such as washing dishes and doing the laundry.	A	B	C	D
7. It is insulting to women to have the "obey" clause remain in the marriage service.	A	B	C	D
8. There should be a strict merit system in job appointment and promotion without regard to sex.	A	B	C	D
9. A woman should be as free as a man to propose marriage.	A	B	C	D
10. Women should worry less about their rights and more about becoming good wives and mothers.	A	B	C	D
11. Women earning as much as their dates should bear equally the expense when they go out together.	A	B	C	D
12. Women should assume their rightful place in business and all the professions along with men.	A	B	C	D
13. A woman should not expect to go to exactly the same places or to have quite the same freedom of action as a man.	A	B	C	D

(A) Agree strongly	(B) Agree mildly	(C) Disagree mildly	(D) Disagree strongly	
14. Sons in a family should be given more encouragement to go to college than daughters.	A	B	C	D
15. It is ridiculous for a woman to run a locomotive and for a man to darn socks.	A	B	C	D
16. In general, the father should have greater authority than the mother in the bringing up of children.	A	B	C	D
17. Women should be encouraged not to become sexually intimate with anyone before marriage, even their fiancés.	A	B	C	D
18. The husband should not be favored by law over the wife in the disposal of family property or income.	A	B	C	D
19. Women should be concerned with their duties of childrearing and house tending, rather than with desires for professional and business careers.	A	B	C	D
20. The intellectual leadership of a community should be largely in the hands of men.	A	B	C	D
21. Economic and social freedom is worth far more to women than acceptance of the ideal of femininity which has been set by men.	A	B	C	D
22. On the average, women should be regarded as less capable of contribution to economic production than are men.	A	B	C	D
23. There are many jobs in which men should be given preference over women in being hired or promoted.	A	B	C	D
24. Women should be given equal opportunity with men for apprenticeship in the various trades.	A	B	C	D
25. The modern girl is entitled to the same freedom from regulation and control that is given to the modern boy.	A	B	C	D

Male-Female Relations Questionnaire—Female Form

J. T. Spence, R. L. Helmreich, and L. L. Sawin

The statements below describe feelings and reactions that a woman might have as a woman and in her relationships with men. Answer each statement by indicating how strongly you agree or disagree as it describes your reactions and feelings by choosing the appropriate letter, A, B, C, D, or E on the accompanying scale. “A” should be chosen if you strongly agree and “E” if you strongly disagree. “B,” “C,” or “D” should be chosen if you are neutral or less strongly in agreement or disagreement.

	Strongly agree			Strongly disagree	
	A	B	C	D	E
1. I'd rather have a man as a boss at work than a woman.	A	B	C	D	E
2. It's all right for women to be affectionate with their female friends, but I don't particularly like men to show affection toward their male friends.	A	B	C	D	E
3. I don't have much respect for a man who allows himself to be led around by his wife or girlfriend, even if it's not done obviously.	A	B	C	D	E
4. When men and women are in the same organization, women should let the men take the lead and try not to take over.	A	B	C	D	E
5. I wouldn't like men to think of me as an assertive, independent person.	A	B	C	D	E
6. When there's an important job to be done, I'd prefer to have a man take the leadership than a woman.	A	B	C	D	E
7. I like men who act assertive and independent.	A	B	C	D	E
8. When I'm playing a sport with a man, I feel better about him if he wins.	A	B	C	D	E
9. Women who are very assertive and independent don't have the concern about other people that most women have.	A	B	C	D	E

	Strongly agree			Strongly disagree	
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
10. The kind of man I like is rugged and masculine.	A	B	C	D	E
11. I'm more likely to swear or use obscenities when in the company of other women than in mixed company.	A	B	C	D	E
12. Masculine men who make me feel they can take care of me turn me on.	A	B	C	D	E
13. I prefer to defer to a man rather than trying to be his equal all the time.	A	B	C	D	E
14. I would not like people to think of me as unfeminine.	A	B	C	D	E
15. When I'm with women I want to impress, I try to act very feminine.	A	B	C	D	E
16. When I'm with a man I want to impress, I try to act very feminine.	A	B	C	D	E
17. When I'm around men, I'm likely to act more helpless than I really feel.	A	B	C	D	E
18. I sometimes treat men as if they were stronger and smarter than they really are.	A	B	C	D	E
19. I don't like a man who lets me dominate him.	A	B	C	D	E
20. I sometimes try to get my way by acting "feminine."	A	B	C	D	E

Male-Female Relations Questionnaire—Male Form

J. T. Spence, R. L. Helmreich, and L. L. Sawin

The statements below describe feelings and reactions that a man might have as a man and in his relationships with women. Answer each statement by indicating how strongly you agree or disagree as it describes your reactions and feelings by choosing the appropriate letter, A, B, C, D, or E on the accompanying scale. “A” should be chosen if you strongly agree and “E” if you strongly disagree. “B,” “C,” or “D” should be chosen if you are neutral or less strongly in agreement or disagreement.

	Strongly agree			Strongly disagree	
	A	B	C	D	E
1. I'd rather have a man as a boss at work than a woman.	A	B	C	D	E
2. When a woman is very smart, I like her better if she doesn't let it show too much around me.	A	B	C	D	E
3. When men and women are in the same organization, women should let the men take the lead and try not to take over.	A	B	C	D	E
4. I don't have much respect for a man who allows himself to be led around by his wife or girlfriend, even if it's not done obviously.	A	B	C	D	E
5. If I tried to be very kind and aware of other people's feelings, it would make me too soft to be a good leader.	A	B	C	D	E
6. I wouldn't like other men to think of me as a very sensitive person.	A	B	C	D	E
7. When there's an important job to be done, I'd prefer to have a man as leader than a woman.	A	B	C	D	E
8. I don't like women who act assertive and independent.	A	B	C	D	E
9. Women who are very assertive and independent don't have the concern about other people that most women have.	A	B	C	D	E

	Strongly agree		Strongly disagree		
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
10. The kind of woman I like best is soft and feminine.	A	B	C	D	E
11. When I'm with a woman I want to impress, I try to act very masculine.	A	B	C	D	E
12. When I'm around other men, I'm likely to act tougher and more indifferent to others' feelings than I really feel.	A	B	C	D	E
13. Feminine women who make me feel that I should take care of them turn me on.	A	B	C	D	E
14. When I'm with women I want to impress, I try to act very feminine.	A	B	C	D	E
15. I prefer a woman who defers to me rather than trying to be my equal all the time.	A	B	C	D	E
16. When I'm with men I want to impress, I try to act very masculine.	A	B	C	D	E
17. It's important to me as a man not to let it show when something relatively unimportant upsets me.	A	B	C	D	E
18. I sometimes treat men as if they were stronger and smarter than they really are.	A	B	C	D	E
19. I prefer women who dress in feminine styles.	A	B	C	D	E
20. It's important to me not to show emotional weakness, no matter how I feel.	A	B	C	D	E

Demographics

1. Age: ____
2. Ethnicity:
 African American
 Asian/Pacific Islander
 Hispanic
 Native American
 White
 Other
4. Student academic rank:
 Freshman
 Sophomore
 Junior
 Senior
5. Are you currently:
 Single, never been married
 Single, previously married
 Married
 Cohabiting
 Other (specify): _____
6. Mother's highest level of education:
 High School graduate
 College graduate
 Masters level
 Ph.D level
7. Father's highest level of education:
 High School graduate
 College graduate
 Masters level
 Ph.D level
8. During the majority of my childhood years (up to age 13), my mother worked:
 Full-time
 Part-time
 No work outside the home
9. During the majority of my adolescent years (between 14-18), my mother worked:
 Full-time
 Part-time
 No work outside the home
10. Sex: ____Female ____Male
11. Major emphasis of study (please **do not** indicate minor)
 Biology
 Chemistry
 Nursing
 Psychology
 Physics
 Math
 Forestry
 Business
 Economics
 Education
 Industrial Tech
 Anthropology
 Sociology
 History
 Philosophy
 Communication
 Other: _____

APPENDIX B

Description of the Sample

Age		Father's highest level of education	
25%	19-22	39%	High School graduate
25%	23-24	35%	College graduate
25%	25-29	15%	Masters level
25%	30-50	8%	Ph.D level
Ethnicity		Participants' mothers worked (before age 13)	
1%	African American	41%	Full-time
6%	Asian/Pacific Islander	25%	Part-time
10%	Hispanic	34%	No work outside the home
4%	Native American		
71%	White	Participants' mothers worked (between 14-18)	
8%	Other	55%	Full-time
Relationship Status		23%	Part-time
49%	Single, never been married	20%	No work outside the home
1%	Single, previously married		
21%	Married	Major emphasis of study	
18%	Cohabiting	21%	Business
8%	Other	1%	Chemistry
Mother's highest level of education		21%	Education
42%	High School graduate	3%	Engineering
39%	College graduate	1%	Fisheries
15%	Masters level	24%	Math
3%	Ph.D level	29%	Nursing
		1%	Physics